

Vocational Higher Secondary Education in Kerala: A Status Study of Students, Pass Outs and Training Components

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Certificate by the Research Guide

This is to certify that the thesis titled “Vocational Higher Secondary Education in Kerala: A Status Study of Students, Pass Outs and Training Components” is an original work of Sri. Anil Kumar R, and is being submitted for the award of the degree of Doctor of Philosophy under the Faculty of Social Sciences of the Cochin University of Science and Technology.

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Declaration

I declare that this thesis titled “Vocational Higher Secondary Education in Kerala: A Status Study of Students, Pass Outs and Training Components” is the record of the bona fide research work, carried out by me under the supervision of Prof. (Dr.) K. George Varghese, Professor, School of Management Studies, Cochin University of Science and Technology. I further declare that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles of recognition.

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ABBREVIATIONS

AA	Apprentices Act
AAG	Accounting and Auditing
ADB	Asian Development Bank
AICTE	All India Council of Teacher Education
AISES	All India School Educational Survey
APR	Asia Pacific Region
ASE	Academic Schemes of Education
AT	Apprenticeship Training
ATI	Advanced Training Institutes
BC	Body of Consensus
B&T	Business and Trades
BVE	Bureau of Vocational Education
CABE	Central Advisory Board of Education
CAC	Central Apprenticeship Council
CBSE	Central Board of Secondary Education
CCE	Continuous and Comprehensive Evaluation
CEA	Central Executive Agency
CEGS	Continuous Evaluation and Grading Scheme
CERPA	Centre for Educational Research, Planning and Action
CGCC	Career Guidance and Counselling Cell
CGCS	Career Guidance and Counselling Service
CI	Chambers of Industry
CIVE	Central Institute for Vocational Education
CMS	Centre for Media Studies
COBSE	Conference of Boards of Secondary Education
CSEM	Conference of State Education Ministers
CSS	Centrally Sponsored Scheme
CSVEPS	Centrally Sponsored Vocational Education Programme in Schools
DE	Department of Education/Directorate of Education
DETE	Department of Training and Employment
DVE	Department/Directorate of Vocational Education
DVEC	District Vocational Education Committee
DVS	District Vocational Survey
ED	Entrepreneurship Training

EE	Environmental Education
ERIC	Educational Research and Innovations Committee
FDI	Foreign Direct Investment
FV	Field Visit
GDP	Gross Domestic Product
GES	General Education School
GFC	General Foundation Course
GOI	Government of India
GS	Government Sector
HD	Human Development
HS	High School
HSVP	Higher Secondary Vocational Education Programme
IAMR	Institute of Applied Man Power Research
ICAR	Indian Council of Agricultural Research
ICMR	Indian Council of Medical Research
ICSSR	Indian Council of Social Science Research
ICT	Information and Communication Technology
IGNOU	Indira Gandhi National Open University
IIM	Indian Institute of Management
IIT	Indian Institute of Technology
ILO	International Labour Organization
IQ	Intelligent Quotient
IT	Information Technology
ITI	Industrial Training Institute
JCVE	Joint Council of Vocational Education
KPSC	Kerala Public Service Commission
AWG	Kulandai Swami Working Group
LDC	Less Developed Country
LO	Linked Organisations
LPG	Liberalisation Privatisation and Globalisation
MHA	Ministry of Home Affairs
MHRD	Ministry of Human Resource Development
MLJ	Ministry of Law and Justice
MLT	Medical Laboratory Technician

MOU	Memorandum of Understanding
MP	Member of Parliament/Madhya Pradesh
MRT	Maintenance and Repairs of Radio and Television
NCERT	National Council for Educational Research and Training
NCF	National Curriculum Framework
NCVT	National Council of Vocational Training
NDC	National Development Council
NDD	National Door Darshan
NGO	Non-Governmental Organisations
NIEPA	National Institute of Educational Planning and Administration
NOS	National Open Schooling
NPE	National Policy on Education
NRC	National Review Committee
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
NVQS	National Vocational Qualifications System
OJT	On the Job Training
ORG	Operational Research Group
OS	Organised Sector
OSA	Old Students Association
PC	Planning Commission
POA	Programme of Action
PSSCIVE	Pandit Sunder Lal Sharma Central Institute of Vocational Education
PTC	Production cum Training Centre
QSP	Questionnaire to Survey Principals
QSPO	Questionnaire to Survey Pass Outs
QSS	Questionnaire to Survey Students
QST	Questionnaire to Survey Teachers
R&D	Research and Development
RABI	Rural and Agro based Industries
RCE	Regional Colleges of Education
SB	State Board
SC/ST	Scheduled Caste / Scheduled Tribe
SCERT	State Council of Educational Research and Training

SEB	Socio-Economic Background
SES	Socio-Economic Status
SS	Service Sector
TTTI	Technical Teachers Training Institute
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational Scientific and Cultural Organization
UK	United Kingdom
UP	Uttar Pradesh
USA	United States of America
UT	Union Territory
VE	Vocational Education
VEP	Vocational Education Programme

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1.1 Introduction

Historically, education in India was seen as one of the methods to achieve *Moksha*, or enlightenment. As time progressed, knowledge was imparted on the basis of caste and the related duties that one had to perform. Education at that time was traditional in form. It was meant to be an agent for the growth of individuals by bringing about social and behavioural changes. This laid more emphasis on assisting human beings in the assimilation of knowledge. But of late, economic development has emerged as the major principle behind all educational policies and education has been redefined as a means for strengthening the economy of a country. To make the close alignment between the education and economic systems, a variety of structural and curricular changes are recommended in terms of *Vocationalisation* of education. Up to a certain level, the role of education is to enable people to read and write, but afterwards, its role has to change towards *Vocationalisation*, which means to enable people to get adequate jobs in industry, business,

government and other sectors and also for self employment. Vocational Education is a distinct scheme of education meant to impart work related skills to students to make them competent to take up occupations or engage in self employment. Vocational Education attempts to interface education with the world of work.

According to Kazim Bacchus the term *Vocationalisation* refers to the “efforts by schools to include in their curriculum those practical subjects likely to generate among the students some basic knowledge, skill, and dispositions that might prepare them to think of becoming skilled workers or take up other manual occupations”, (Lauglo & Lillis, 1988)¹. *Vocationalisation* of secondary education is therefore taken to mean curriculum change at secondary stage in a practical or vocational direction.

Selvaratenam (1988)² observed that the alarming growth in the population in recent years in the third world countries has lead to massive unemployment among school leavers. Planners have attempted to interface education with the world of work, presuming that a skill oriented education will ameliorate the growing unemployment among youth, provide relief to parents and tax payers from the increased burden on education-expenditure, produce manpower for industrial establishments, enable school leavers to become easily employable and contribute to industrial development and economic growth. Policy makers the world over believe that *Vocationalisation* will provide skills and attitudes or competencies for making the economic system efficient and help to meet manpower shortages and skill development that would make students enter the labour force earlier with a decrease in the demand for more schooling.

UNESCO (1974)³ defined vocational education as “a comprehensive term embracing those aspects of educational process involving in addition to general education, of practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of economic and social life.” Such an education has to be an integral part of preparing an individual for an occupational field and an aspect of continuing education. *Vocationalisation* of education, thus, aims at increasing the employment potentials of the people through education for selecting vocations for self-employment in agriculture, industry and related occupations, including art and craft, agro-industries, mechanisation, etc. It helps individuals to be more productive by preparing them for specific competencies in different vocations. It prepares individuals for understanding the social needs and conditions and helps to realise their own potentialities, so that both can be correlated for bringing about economic development and prosperity of the nation. According to Buch et al. (2006)⁴, in an international perspective the term Technical and Vocational Education (TVE), Vocational Education and Training (VET), Technical and Vocational Education and Training (TVET) and Vocational Education (VE) are used interchangeably for vocational education. Laso (2005)⁵ differentiated Vocational and Technical Education in India as follows; “In India, generally speaking, vocational education ranges between pre-trade and paraprofessional and is aimed at effective utilisation of human resources. On the other hand, technical education is education relating to industrial and mechanical arts.”

Agarwal (2005)⁶ stated that after independence, the social outlook in India has tremendously changed due to the restructuring of economy as well as development of science and technology, and growing unemployment has brought us at a point where the number of job seekers has increased in geometric progression which has necessitated a change in the system of education. The shift

was obviously towards *Vocationalisation*. *Vocationalisation* can be implemented at different stages of education. But *Vocationalisation* of the higher secondary stage has special significance for a country like India. This is not only because of the vastness of the stage in terms of the number of students but also due to the fact that this is a terminal stage of general education for a large number of students. *Vocationalisation* of the higher secondary stage is meant to make sure that those who complete this stage and want to enter the world of work have acquired some occupation related skills and have better employment potentials.

Maheswari (2005)⁷ observed that since India has opened up its economy, it needs to invest in skill development and education and training of the workforce to ensure their meaningful existence in the society. As a consequence of technological change, shorter product life cycles, new forms of work organisation, and new patterns of work are reshaping the business environment, which in turn is putting tremendous pressure on the training and training systems. For a country like India, having a large reserve of human capital and ever-growing unemployment rate, the success of a programme like the Vocational Higher Secondary Education Programme is crucial to its national development. At the same time it is extremely challenging to design, implement, and manage vocational education effectively. According to Khaparde (2003)⁸, the socio-economic changes due to LPG (Liberalisation Privatisation and Globalisation) strategies have created a variety of challenges to policy makers, educational planners, administrators and training providers.

Vocational Higher Secondary Education was initiated in India in the year 1976. To start with, the programme was implemented in a handful of States and Union Territories of India. Later on it was expanded to almost all the States and Union Territories of India. It was implemented in Kerala in 1983. Kerala is well known for its achievements in the field of education. It enjoys

one of the highest school enrolment rates (AISES, NCERT, 2002)⁹, lowest dropout rates and highest literacy rates (Economic Survey, MHA, 2011-12)¹⁰ among the states in India. At the same time Kerala is a state having one of the highest unemployment rates (NSS, 2000)¹¹ of educated youth among the states of India. Here lies the importance of a scheme like the Vocational Higher Secondary Education to the state of Kerala.

This study analyses the socio-economic backgrounds and entrepreneurial profiles of the students and pass outs of the Vocational Higher Secondary Education in Kerala and the academic achievements of the Vocational Higher Secondary students and pass outs in Kerala in terms of their performance in the examinations. The study also analyses the quality and availability of the various training and support facilities of the Vocational Higher Secondary Schools in Kerala, nature and rate of employment and higher studies among the pass outs of the Vocational Higher Secondary Education in Kerala and the awareness of students, pass outs, teachers and principals regarding the goals and objectives, mode of implementation, apprenticeship training and higher study and employment opportunities of the programme of the Vocational Higher Secondary Education in Kerala.

1.2 Research Problem and Rationale of the Study

Bansal (2005)¹² is of the view that the rapid changes that have been taking place due to consumerism & technological revolution have created a lot of problems in the field of vocational education globally and it has apparently not been able to tackle the problems of geographic, socio-economic, cultural and skill differences. With the fast growing changes in Information and Communication Technologies (ICT), the boundaries of global market narrowed and production and marketing became more competitive in terms of both

quality and price. The need of the day is to produce quality skilled manpower having adequate in-hand knowledge and work experience. According to Shah (2002)¹³, the biggest challenge today is to design, develop and implement Vocational Education Programmes vis-à-vis the challenges posed by the rapid technological advancements, globalisation of trade and economy and changes in employment opportunities to make sure that it is socially relevant, meaningful and provide self-employment. Moreover it is a programme requiring large amounts of a variety of resources including financial resources. It is important to make sure the availability and effective utilisation of these resources to ensure the success of the programme. So it is imperative that you continuously monitor and evaluate the programme with respect to the suitability of its design and implementation, managerial effectiveness, quality and availability of training requirements, demand, employment opportunities, vertical mobility, and stakeholder profiles, awareness and benefits. This will help to make sure that the programme is on the right track and its objectives are fulfilled.

Studies on vocational education have brought out different problems and challenges faced by vocational education in different parts of the world. Vocational education, though in vogue in most parts of the world, assumes comparatively a low status when compared with the academic stream of education.

The situation in India is no better. The report of the planning commission for the Xth Five Year (2002-07)¹⁴ Plan admits that the *Vocationalisation* of education at the +2 level has achieved only partial success. The students prefer general courses like science, arts or commerce at the +2 level and later in the tertiary sector of education. They constitute the bulk of the 60 million educated unemployed youth in the country. On the other hand the country requires technical and skilled manpower particularly in view of the

liberalisation of the economy in the recent years. There are immense opportunities for trained manpower in a developing economy like India's, especially in the agriculture, manufacturing and social services sector. A properly planned and effectively implemented vocational education system will enable the unemployed youth to take-up some useful employment.

There have been huge increases in the budget allocation for Vocational Education in the Five Year Plans of India in recent times. Given below is a glimpse of the plan outlay/budget estimate for vocational education in the last four Five Year Plans (*Table: 1.1*).

Table 1.1 Plan Outlay/Budget Estimate for Vocational Education in the Last Four Five Year Plans of India.

Five Year Plan	Plan Outlay/ Budget Estimate
IX th Five Year Plan (1997-2002) ¹⁵	100 Crores
X th Five Year Plan (2002-2007) ¹⁶	350 Crores
XI th Five Year Plan (2007-2012) ¹⁷	6876.30 Crores
XII th Five Year Plan (2012-2017) ¹⁸	14186.78 Crores

According to the reports of the Operations Research Group (ORG, 1996)¹⁹, low priority accorded to vocational education by the states, lack of awareness, poor enrolment rate, lack of employment opportunities, lack of stress on self employment, lack of coordination between departments, lack of full time teachers, lack of apprenticeship training, language problem, lack of industry experience of teachers, lack of school industry linkage, lack of teacher training and lack of recognition of VHSE courses were the major problems of Vocational Higher Secondary Education in India.

The reports of the Centre for Research Planning and Action (CERPA, 1999)²⁰ stressed the need for a manpower need assessment, improving the

quality of vocational pass outs, providing career guidance and counselling, introduction of short modular courses, introduction of market and economy oriented new courses, monitoring and evaluation of programmes, performance based fund allocation and tapping of international funds.

The recommendations of the National Council for Educational Research and Training (NCERT, 1998)²¹ include the need for access to higher studies, restructuring of the National Curriculum Framework (NCF, NCERT, 2000)²² to give more importance to work experience and the utilisation of facilities of technical and other vocational education programmes for improving the VHSE.

There are differences in the implementation of the VHSE programme among the States of India. Considerable differences exist in the formation of administrative structures, location of schools, formulation of curriculum design, availability of infrastructural facilities, and collaborative patterns amongst the States (Mishra, 1996)²³ which has directly or indirectly affected the teaching learning process. The guidelines for the implementation of the scheme provide flexibilities to the States to make certain adjustments in the implementation of the scheme in order to suit the specific requirements of the States or to cope with the circumstances prevailing in the States. In Kerala the scheme of VHSE is implemented slightly different from many of the other States. The main feature of this is the *Bifocal Mode* of implementation. This allows the students to opt for optional subjects along with vocational subjects making them eligible for higher studies once they successfully complete the course. As a result the total working hours per week has gone up to 43, which is the highest among the higher secondary courses in India, and the work load of students increased. Moreover the age limit for admission to the scheme has been fixed at 20 years in Kerala where as there are no such limits in some other States. All these were done to cater to the interests of the secondary pass outs and to attract more of

them to the scheme and to make it more popular. In addition to the above differences, there are differences in the socio-economic, cultural, industrial, and labour market environments, and value systems of the different states of India. All these can have an impact on the success/failure of the Vocational Higher Secondary Education Programme in the State. Therefore the studies conducted on an all India basis may not be able to provide a clear cut picture of the situations prevalent in Kerala. So it is worthwhile to conduct a separate study on the Vocational Higher Secondary Education in Kerala.

An on-the-spot study by Sacheti et al. (1992)²⁴ on the implementation of *Vocationalisation* in Kerala revealed that the management structure was created as per the Centrally Sponsored Scheme (CSS). The course design was found to be the most important bottleneck in the overall implementation of the scheme. Inexperience of teachers and poor academic performance of students were the other major limitations. The researcher suggested more practical training and better qualified and trained teachers for vocational subjects.

According to a study conducted by the Operations Research Group (ORG, 1996)²⁵ on the Implementation of Vocational Education Programme in Maharashtra, Kerala, Uttar Pradesh and Chandigarh, the *Vocationalisation* of secondary education had not been able to achieve the objectives set for it. The study observed that poor management, lack of vocational surveys, non-availability of competent faculty and instructional material, poor infrastructure facilities, lack of school industry linkage, limited teacher preparation facilities, inadequate On-the-Job Training (OJT), lack of apprenticeship training, lack of vertical mobility, lack of employment opportunities, lack of guidance and counselling and lack of proper monitoring mechanism were the major problems. The study also found that the general impression was that the vocational courses are opted by socio-economically and academically inferior student population.

The study by Kremer in 2000²⁶ concluded that the VHSE in Kerala had failed to achieve the primary objective of the programme which was to prepare the educated youth for employment. He also observed that the programme had transformed into a transitional stage to the higher education which was quite contrary to the programme objectives.

The study conducted by the Planning Board of Kerala in 2002²⁷ found that most of the courses did not lead to jobs. The study concluded that lack of modern work shop facilities and in-plant training facilities, non-availability of permanent teachers in government schools, non-availability of text books and training manuals, lack of training to teachers, non-recognition of courses by the Kerala Public Service Commission (KPSC) and the absence of revision of curriculum were the major problems. The study also found that courses were sanctioned without conducting ample studies and the suitability of the scheme of VHSE to the state was questionable and the demand for the scheme was low.

Not many studies have been conducted on the Vocational Higher Secondary Education in Kerala. Recently, no studies have been conducted on the topic. The present study is a status study of the students, pass outs and training components of the Vocational Higher Secondary Education in Kerala. The previous studies have shown that the scheme of Vocational Higher Secondary Education in Kerala has not yielded the expected results. The major problem is that the number of pass outs entering employment is very small. The exact reasons behind this phenomenon are not clear. The studies have also identified a lot of other problems and made quite a few recommendations to solve these problems. This study is expected to bring to light, the deficiencies in the training facilities of the VHS schools in Kerala and the awareness of the various stakeholders of VHSE about the goals and objectives and some other important aspects of the programme. The study is also expected to reveal the

profiles of the pursuers of the scheme of VHSE in Kerala in terms of their entrepreneurial skills, socio-economic statuses and academic achievements. In addition the study attempts to throw light on the success/failure of the scheme of VHSE in Kerala in terms of its ability to direct its students to employment and also tries to know how far some of the recommendations of the previous studies have been implemented.

This study analyses the socio-economic backgrounds and entrepreneurial profiles of the students and pass outs of the Vocational Higher Secondary Education in Kerala, the academic achievements of the Vocational Higher Secondary students and pass outs in Kerala in terms of their performance in the examinations, quality and availability of the various training and support facilities of the Vocational Higher Secondary Schools in Kerala, nature and rate of employment and higher studies among the pass outs of the Vocational Higher Secondary Education in Kerala and the awareness of students, pass outs, teachers and principals regarding the goals and objectives, mode of implementation, apprenticeship training and higher study and employment opportunities of the programme of Vocational Higher Secondary Education in Kerala.

As different from the previous studies, an effort has been made in this study to measure the training and support facilities using a newly developed scale. The study also tries to analyse the employment and higher studies among pass outs with respect to their socio-economic backgrounds which was not done previously. For the first time an attempt has been made to analyse the entrepreneurship profiles of the students and pass outs of the Vocational Higher Secondary Education in Kerala and to find out the relationship between the training and support facilities of the VHS schools and the entrepreneurship profiles of the pass outs.

1.3 Objectives of the Study

The study is a status study of the students, pass outs and training components of the Vocational Higher Secondary Education in Kerala. The specific objectives of the study are:

1. To study the Socio-economic Backgrounds of the Vocational Higher Secondary students and pass outs in Kerala.
2. To study the awareness of students, pass outs, teachers and principals of the Vocational Higher Secondary Education in Kerala with respect to the goals and objectives, mode of implementation, apprenticeship training and higher study and employment opportunities of the programme of VHSE.
3. To assess the Training and Support Facilities of the Vocational Higher Secondary Schools in Kerala.
4. To evaluate the Academic Achievements of students and pass outs of the Vocational Higher Secondary Education in Kerala in terms of their grades in the qualifying and VHSE examinations respectively.
5. To analyse the Entrepreneurship Profiles of the Vocational Higher Secondary students and pass outs in Kerala.
6. To study the nature and rate of employment and higher studies among the Vocational Higher Secondary pass outs in Kerala.
7. To make suggestions, if required, to improve the scheme of Vocational Higher Secondary Education Programme in Kerala.

1.4 Hypotheses

The following hypotheses have been formulated and tested to draw conclusions on the population.

1. The mean Socio-Economic Background (SEB) Scores of the students and pass of the VHS schools in Kerala are less than 50 (50% of the maximum score) on the Socio-Economic Status Scale used in this study.
2. The mean Awareness Scores of the students, pass outs, teachers, and principals of the VHS schools in Kerala are less than 4 (50% of the maximum score) on the Awareness Scale used in this study.
3. The Average Training and Support Facility Score of the Vocational Higher Secondary schools in Kerala is less than 35 (70% of the maximum score) on the Training and Support Facility Scale used in this study.
4. Majority of the Vocational Higher Secondary students in Kerala have 'C+' grade or below in the qualifying examinations.
5. The mean Entrepreneurship Scores of the Vocational Higher Secondary students and pass outs in Kerala is less than 182 (70% of the maximum score) on the Entrepreneurship Scale used in this study.
6. The Entrepreneurship Scores of the pass outs from different schools have a positive relationship with the Training and Support Facility Scores of the corresponding schools.
7. The rate of higher studies among the Vocational Higher Secondary pass outs in Kerala is higher than the national average of 38%.
8. The rate of employment among the Vocational Higher Secondary pass outs in Kerala is less than the national average of 28%.

9. There is relationship between the grades of pass outs in the VHSE examination and their rate of employment.
10. There is relationship between the socio-economic backgrounds of pass outs and their rate of employment.

1.5 Scope of the Study

The study covers the vocational higher secondary schools of Kerala and the students, pass outs, teachers and principals of these schools. The scope of the study includes areas like socio-economic backgrounds, awareness about the program, achievements and entrepreneurship profiles of the students and pass outs. The study also analyses the nature and rate of employment and higher studies opted by the pass outs. Awareness of the teachers and principals on the basic objectives of the program has also been subjected to study. Analysis of the training and support facilities of the vocational higher secondary schools also form part of the study.

1.6 Expected Outcome of the Study

This study is expected to help the policy makers, implementing authorities and the management of Vocational Higher Secondary Education in Kerala to get a true picture of the scheme, where it stands now and where it is heading to. This may also help them in making policy changes, modifying the design and implementation of the programme, strengthening training strategies and issuing proper guidelines to make sure that the scheme of Vocational Higher Secondary Education in Kerala yields the desired results.

1.7 Delimitations of the Study

The following are the delimitations of this study.

- i. The study is restricted to three out of the fourteen districts of Kerala.

- ii. Only three out of the forty two vocational courses are included in the study.
- iii. Pass outs for the five year period from 2003-2004 to 2007-2008 only are included in the sample.
- iv. The research is subjected to all the inherent delimitations of social research.

1.8 Definitions of Terms Used

The researcher has used different terms in this study, the operational definitions of which are given below.

1.8.1 Training and Support Facilities

Training and support facilities in the context of this study refers to the various facilities like infrastructure, training personnel, career guidance and counselling and real life training of the Vocational Higher Secondary Schools in Kerala.

1.8.2 Infrastructure

Infrastructure in the context of this study refers to the various facilities like class room, laboratory, library, smart room, drinking water, toilet, transportation, and physical training facilities required by the VHS schools in Kerala.

1.8.3 Training Personnel

Training personnel in the context of this study refers to the teachers and instructors of the VHS schools in Kerala.

1.8.4 Real Life Training

Real Life Training in the context of this study refers to that sort of training given to the Vocational Higher Secondary students which impart them with practical training in the real life situation and includes on-the-job training, apprenticeship training, training at production cum training centres and field visit.

1.8.5 Career Guidance and Counselling

Career Guidance and Counselling in the context of this study refers to the various guidance and counselling services given to the students and pass outs of the VHS schools in Kerala to help them to progress along a suitable career path and includes services of the Career Guidance and Counselling Cell, Old Students Association and the availability of a comprehensive database of the pass outs.

1.8.6 Academic Achievement

Academic achievement in the context of this study refers to the grades obtained by the Vocational Higher Secondary students and pass outs in the qualifying and VHSE examinations respectively.

1.8.7 Entrepreneurship Profile

Entrepreneurship profile in the context of the study refers to the extent of possession of the various entrepreneurial skills, necessary for an entrepreneur, by the VHS pass outs in Kerala.

1.8.8 Awareness

Awareness in the context of the study refers to the awareness of the students, pass outs, teachers and principals regarding the goals and objectives,

mode of implementation, apprenticeship training and higher study and employment opportunities of the programme of Vocational Higher Secondary Education in Kerala.

1.9 Conclusion

Implemented properly and managed effectively, Vocational Higher Secondary Education in Kerala can be a remedy to some extent to the unemployment problem in Kerala. Continuous monitoring is required to bring to light the limitations of the scheme and to reveal the problems faced by it. This study on the Vocational Higher Secondary Education in Kerala is an attempt of this kind. Every effort has been made to make sure that this study brings out a true picture of the scheme of the Vocational Higher Secondary Education in Kerala with respect to the objectives of the study and helps in improving the scheme in the State.



VOCATIONAL EDUCATION IN INDIA – AN OVERVIEW

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2.1 Introduction

In the Indian context *Vocationalisation* is not a new concept. As in other developing countries much thinking has gone into *Vocationalising* the educational system in the country. The present concept of *Vocationalisation* dates back to the ancient Vedic culture in which technological knowledge was transferred from the father to the son. All the periods of education that followed (Brahminic, Budhist, Mediaeval Hindu, Mediaeval Mugal, and Colonial) had elements of vocational education in them, though, with varying degrees of quality and content. Sivarajan (1997)²⁸ observed that in the *Gurukula System* disciples were required to perform all kinds of manual work for living and learning but in the due course, practical ability of education was neglected and

education became too bookish. There was no provision for manual activity in the curriculum of general education.

2.2 Development of Modern Vocational Education in India

In India the idea of modern vocational education originated in the middle of the 19th century. For the first time in our country the attention of the government was drawn towards practical education by the Wood's dispatch in 1854²⁹ which contemplated prevocational education. "A name that strikes us most in the 19th century is the forgotten hero of India's struggle for independence during the British rule. He was Raja Mahendra Prathap, a revolutionary in exile, fighting for an Indian republic in 1860. What the scholars of Indian history couldn't believe before Raja Mahendra Prathap went to self imposed exile was the fact that he travelled around the world and returned with the confirmed idea that the future of India lay in introducing vocational education in its educational system. He decided to setup a vocational school called *Prem Mahavidyalaya* at Brindavan and donated his entire state, palaces and lands for this cause. The foundation of this vocational institute was laid by no less a person than the founder of Banaras Hindu University, Pandit Madan Mohan Malviya. To him *Vocationalisation* was a movement like the industrial revolution in Britain, which would reinvigorate its liberation from the colonial rule" (Seminar on Vocational Education, 1990)³⁰

Since then a number of committees and commissions have been formed from time to time to consider the prevailing education system and to make recommendations for introducing vocational education, especially at the Higher Secondary Stage. Hunter Commission (1882)³¹, Hartog Committee (1929)³², Sapru Committee (1934)³³, Abbot and Wood Report (1937)³⁴, Zakir Hussain Committee (1937)³⁵ Sargent Committee (1944)³⁶, Radhakrishnan Commission

(1948)³⁷, and Mudaliar Commission (1952-53)³⁸ stressed the need for introducing vocational education at the school level. But the recommendations of these committees and commissions could not lead to the *Vocationalisation* of the higher secondary stage of education in the country.

The Education Commission (Kothari Commission-1964-66, 1968)³⁹ suggested restructuring of education (10+2+3) and recommended distinct streams of general and vocational education at higher secondary stage to intercept the goalless climb up of the youth on the educational ladder and divert them to productive path. The Commission felt that it should be possible to divert 50% of students of the vocational stream. The Parliamentary Resolution⁴⁰ on National Policy of Education (NPE, 1968)⁴¹ accepted the recommendation of the Education Commission-1964-66 and emphasized the '*effectively terminal nature of the vocational stream of studies.*' Nothing much happened for the next one decade.

The Central Advisory Board of Education (CABE) at its meeting in 1975 endorsed the policy resolution and resolved to adopt 10+2+3 pattern of education and reiterated that the +2 stage of education should be regarded not merely as a college preparatory, but a period for preparing an increasingly large number of school leavers for different vocations in life. The CABE endorsed the National Council of Educational Research and Training (NCERT) to prepare curricula and help the State Governments in implementing vocational education.

The NCERT document on '*Higher Secondary Education and its Vocationalisation*' presented a model of conceptual framework for implementation in 1976⁴². The document asserted that *Vocationalisation* is a major transformation in education and cannot be achieved without important structural and functional

changes in the whole setup. Eventually the Vocational Education Programme (VEP) at the higher secondary stage was initiated in 1976. In 1976 following the conceptual frame work for implementing Vocational Education Programme (VEP) in the country, a Centrally Sponsored Scheme (CSS) was launched. However, shortly after launching, it encountered serious difficulties.

The Eswar Bhai Patel Committee (1977-78)⁴³ pointed out that work experience or Socially Useful productive Work (SUPW) should be an integral component of curriculum at all stages of education. The committee describes SUPW as “purposive meaningful work resulting in either goods or services which are useful to the community”.

The Union Minister of Education (UME) in his capacity as the president, NCERT appointed a National Review Committee (NRC, 1978)⁴⁴ popularly known as Adishesaiah Committee to review the above NCERT documents. This committee touched upon nearly all the recommendations of the preceding document and gave detailed recommendations for the introduction of vocational courses at the Higher Secondary Stage. Its report was published as ‘*Learning to Do*’ in 1978.

The Ministry of Education, Government of India simultaneously constituted the Working Group on *Vocationalisation* of Education, the report of which was finalised in November 1977⁴⁵. It presented details in regard to the scheme of implementation and the financial implications while giving its own set of recommendations. These recommendations had close resemblance to those of the ‘*Learning to Do*’ and its predecessor, the NCERT document.

A special session of Conference of Boards of Secondary Education (COBSE) in September 1978 recommended that the State Boards (SB) should review their courses in the light of course patterns and other suggestions made

in these reports (*Learning to Do* and the *Working Group Report on Vocationalisation of Education*) to suit the needs of the community. The Centrally Sponsored Scheme (CSS) was discontinued in 1979. Consequently the Vocational Education Programme (VEP) at the +2 level in the States received a setback. During the years, 1976 to 1984, 9 States and 3 Union Territories (UT) implemented the scheme for higher productive and economic development.

In 1984, the document '*Challengers of Education, a Policy Perspective*'⁴⁶ published by the Ministry of Education, lead by Dr. V.C. Kulandaiswami undertook extensive review of the Vocational Education (VE) in the country and provided guidelines for the development of the programme. It formulated the concept of *Vocationalisation* at different levels and recommended the linkages required among different agencies running Vocational Programmes (VP), setting up of a well knit management system, an action plan for promotion of *Vocationalisation* in the country and liberal central financial assistance for achieving the targets fixed in 1986. The National Policy on Education (NPE, 1986)⁴⁷ accorded a very high priority to the programme of *Vocationalisation* and set a target to cover 10% of the higher secondary students by 1990 and 25% by 1995. With this in view, near about all the States and Union Territories implemented the scheme. The extent of post secondary Vocational Education Programme is not precisely quantified in India. A rough estimate would put the number as being close to a million in all the programmes of one to three years duration. This number is more an indicator of the scale of operation rather than a statistical compilation. To be more specific, the first year of the higher secondary programme enrolled nearly 186000 students in 1989-90 which amounted to about 7% of the total enrolment in that grade in higher secondary institutions, taking the country as a whole.

In 1987, the Programme of Action (POA)⁴⁸ prepared by the Ministry of Education for the implementation of NPE (1986) in the field of *Vocationalisation* accepted the model suggested by the Kulandaiswami Working Group (KWG, 1985)⁴⁹. A detailed framework of the programme of *Vocationalisation* of education to be launched in the country was formulated in consultation with experts and was discussed in the Conference of State Education Ministers (CSEM) held in 1987 and a Body of Consensus (BC) was arrived at on various components of the programme. In the conference, State representatives were of the view that liberal financial assistance was necessary for the implementation of the programme.

The Centrally Sponsored Scheme (CSS) was launched by the Ministry of Human Resource Development (MHRD)⁵⁰ in 1988 under which assistance would be given to the State Governments (SG) and Union Territories (UT) and Non-Governmental Organisations (NGO). The Scheme provided broad guidelines in respect of management of the programme at various levels, curriculum design, infrastructure, vocational surveys, instructional materials, teachers and their training, school-industry linkages, vocational guidance, examination and certification, modification of recruitment rules and apprenticeship training and funding norms for various components of Vocational Education Programme (VEP). It also made provisions for financial assistance to Non-Government Organisations (NGOs)/Voluntary Organisations (VOs).

Ramamurti Committee (MHRD, 1990)⁵¹ reviewed the NPE (1986) and in its Programme of Action (MHRD, 1992)⁵² while emphasizing the need for strengthening Vocational Education Programme, set a target to divert 10% of secondary students by 1995 and 25% by 2000 to vocational stream.

The report of the Conference of Chairmen of Boards of School Education on Semesterisation and Examination Reform (NCERT, 1992)⁵³ dealt elaborately with the semesterisation of vocational education at the higher secondary level for providing greater flexibility and functionality.

A Scheme of Pre-vocational Education at the Lower Secondary Stage of Education was also launched by the MHRD, Government of India in 1993 for funding of schools in a phased manner. Both the schemes continued till the end of the Eighth Five Year Plan⁵⁴.

According to the annual report of the Ministry of HRD, (1996-97)⁵⁵ the scheme of *Vocationalisation* of education at the +2 stage is implemented through the State Government/UTs administrations. So far, all the states and UTs except Lakshadweep have joined the programme. Up to the end of 1995-96, 18,780 vocational sections had been approved in 6,476 schools, creating capacity for diversion of 9.35 lakh students to the vocational stream at the +2 stage. This was 11% of the enrolment of +2 levels. The actual enrolment was, however, likely to be less as optimum utilisation of facilities created, might not be achieved. During 1996-97 the main emphasis was therefore, on consolidation and qualitative improvement of the programme. The National Curriculum Framework for School Education (NCERT, 2000)⁵⁶ emphasised the need for work education at all stages of education. It considers work education as a part of a continuum and suggests that work education should be an essential component at all stages of education and be provided through well-structured and graded programmes. The competencies to be developed in this field include knowledge, understanding, practical skills, and values through need based life skills.

Since then the Vocational Education in India has witnessed many reforms and expansions as part of an effort to popularise the programme in the country. Recognising the importance and the need for diversification of post-secondary students to vocational stream, the Ministry of Human Resource Development (MHRD) and the National Council of Educational Research and Training (NCERT) initiated many actions for its promotion. Presently, the Vocational Education Programme covers 31 States and Union Territories. It has a sanctioned capacity of 10 lakh in more than 6728 (GOI, 2001)⁵⁷ schools. A number of studies have also been conducted to provide feedback to the States for its better implementation. In spite of all these, the Vocational Education in India has not been able to achieve its goals owing to a number of reasons. The enrolment rate is only 8% against 25% envisaged by the year 2000 AD in the revised NPE-1992. One can notice huge differences among the States not only in the mode of implementation, delivery and management of the scheme but also in its success and effectiveness.

The scheme of *Vocationalisation* of education at the degree level (+3 stage of education) was launched by the University Grants Commission (1994-95)⁵⁸. Under the scheme, the UGC provides funds to the colleges and universities for starting vocational subject(s). UGC identified 35 vocational subjects in four discipline areas i.e. Arts, Humanities and Social Science, Commerce, Economics and Management, and Engineering and Technology. Other areas were not taken into account because they were to be initiated by the concerned Ministries. The UGC has provided financial assistance for running vocational courses to an extent of 152.17 Crores. On reviewing the scheme by the UGC it was found that there have been very few takers for 7 subjects out of 35. These have been deleted since 1998-99 and an additional list of 10 have

been added considering the need of rural, hilly and tribal areas with specific reference to the North-Eastern Region and that of women.

The Ninth Five-Year Plan (1997-2002)⁵⁹ identified the key issues facing secondary education as access, quality and diversification. It argued that, despite the pressure to modify secondary curricula in a vocational direction, secondary education curricula continue to be liberal and oriented to the first degree courses. It proposed further revision and modification of secondary curricula to relate them more to work opportunities, particularly at middle-level manpower, further expansion of vocational education at both lower and senior secondary level, and establishment of effective links between industry and education. It claimed that this further expansion is justified in terms of both economic efficiency and social justice. Need for selecting courses on the basis of an assessment of manpower needs and ensuring greater participation of all the groups within the community was considered important.

The Tenth Five Year Plan observed that the vocational education in India has not been able to achieve its objectives fully. The steering committee on secondary, higher and technical education setup for the Xth Five Year Plan (2002-2007)⁶⁰ recommended that the vocational education at the Secondary School Level, Polytechnics and Industrial Training Institutes (ITIs) should come under one department of the state government for better networking, linkages, focused targeting and optimal utilization of resources.

The Eleventh Five Year Plan (2007-2012)⁶¹ in the report of its working group found that there is a huge gap in the vocational training capacity. The proportion of trained youth (10%) is one of the lowest in the world. Our Vocational Education and Training (VET) system needs to cover more trades. According to the recent National Sample Survey Organisation (NSSO) data,

only 5% of the population of 19–24 age group in India have acquired some sort of skills through VE. Qualitatively it suffers from disabilities such as poor infrastructure, ill-equipped classrooms/laboratories/workshops, below par faculty, absence of measurement of performance and outcomes, etc. Placements are not tracked, training institutions are not rated, and accreditation systems are archaic. End-of-the-training examinations and certification systems are either nonexistent or flawed. There are now about 9583 schools offering about 150 vocational courses of two years duration in the broad areas of agriculture, business and commerce, engineering and technology, health and paramedical, home science and science and technology at +2 stage covering about one million students. During the Eleventh Plan, VE will be expanded to cover 20000 schools with intake capacity of 25 lakh by 2011–12. The programme will ensure mobility between vocational, general, and technical education and multiple entry and exit options.

In the approach to the Twelfth Five Year Plan⁶², the planning commission stressed the need to start pre-vocational courses at Xth and XIth and the importance of providing vertical mobility to the students to pursue advanced courses if they want. It also highlighted the need to put in place the National Vocational Qualifications System (NVQS) and the need to aligning the *Vocationalisation* of the secondary stage with it. It also identified the need for special focus on training of trainers/teachers in skill impartation possibly using a PPP (Public-Private Participation) model. It observed that the Vocational Education and Training sector in the country is small and this limited capacity is under-utilised due to poor quality and lack of social status. During the Twelfth-Plan, there is an urgent need to develop a large sector offering short-cycle qualifications in the form of associate degrees catering to intermediate skills in the higher education space within the National Vocational Education

Qualifications Framework. It also envisaged the need for expanding and overhauling the vocational education system in the country. The plan proposes to increase the percentage of the workforce which has received formal skills through vocational education and training from 12.0 per cent at present to 25.0 per cent by the end of the Twelfth Plan. This would mean that about 70 million more people have to be imparted formal skills in the next five years.

At a time when technological advancements are bringing about unprecedented changes and developments in all sectors and when the whole world is shrinking into a village riding on the shoulders of *Globalisation* and *Liberalisation*, the demand for skilled manpower is higher than ever before. The relevance and importance of Vocational Education and Training (VET) in this context need not be over emphasised. In this era of cut throat competition, it is left to the policy makers and other authorities to make sure that the Vocational Education Programme (VEP) in the country is not left behind.

2.3 Objectives of Vocational Education in India

As said earlier VEP was started in India in 1976-77 under the programme of *Vocationalisation* of Higher Secondary Education in general education institutions. A variety of vocational courses of two-year duration in the area of Agriculture, Business and Commerce, Engineering and Technology, Home Science, Health and Paramedical and Humanities are being offered by schools. The programme aims to provide skills through production and service oriented courses to reduce the mismatch between the skills acquired by pupils with those required by the employee/market, thereby reducing the aimless pursuit to higher education. The programme also helps in developing entrepreneurial spirit, motivation and competencies needed to organise and run an entrepreneurial venture.

The objectives of Vocational Education in India are: (MHRD, 1977)⁶³

- To fulfil the national goals of development and the removal of unemployment and destitution
- To impart education relevant to productivity, economic development and individual prosperity
- To meet the needs of skilled and middle level manpower for the growing sectors of economy, both organised and unorganised
- To attract a sizeable segment of population to varied vocational courses so as to reduce the rush to general education
- To prepare students for self-reliance and gainful employment.

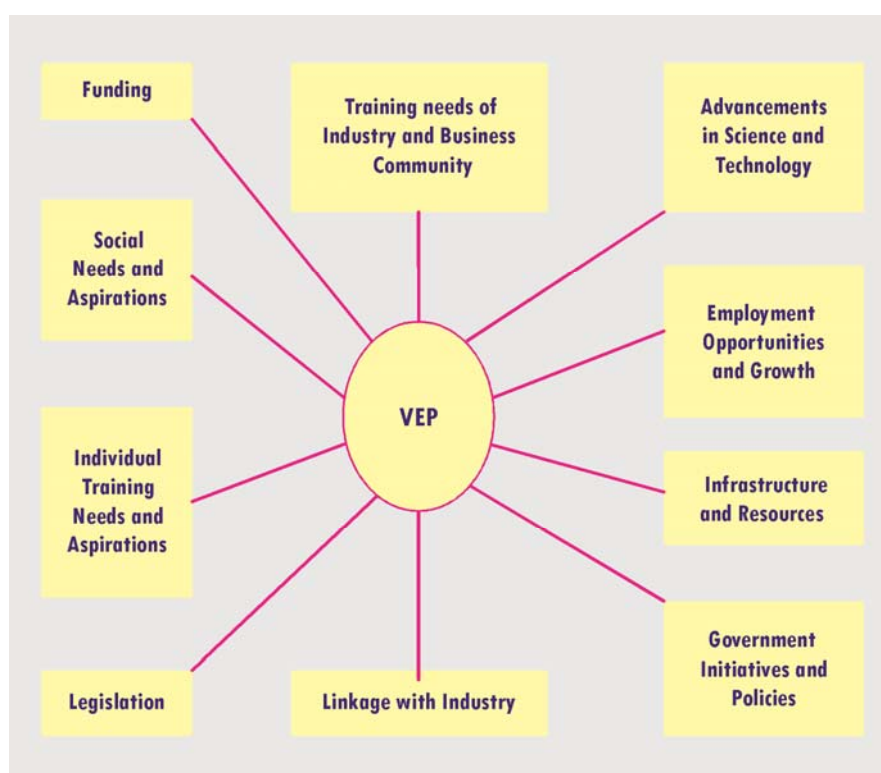
2.4 Dimensions of Vocational Education Programme

Vocational education has a number of dimensions which are illustrated in the diagram (*Figure: 2.1*) given below (Mehrotra, 2005)⁶⁴. These dimensions have great impact on the conceptualisation, implementation, delivery, management, popularity and success of vocational education. Training needs as felt by different stake holders are a real source of motivation for the initiation and implementation of any sort of vocational education. The stake holders here are industry and business community, society and individuals. The aspirations of individuals and societies also contribute to this. Government policies, legislations and adequate allocation of funds are a must for the successful and smooth running of such a programme.

Huge amount of fund is required for providing the necessary infrastructure and other resources. Apart from the government, industry and business community can also contribute to this cause. Advancements in science and technology necessitate the need for upgrading skills and the creation of

skilled manpower, to which vocational education can contribute heavily. Vocational education in turn should be modified and adapted to suit the changing technologies and needs of the industry. Linkages with industry assume utmost importance in this context. This association is a symbiotic one where both the industry and the vocational education stand to gain. Technological advancements will trigger industrial revolution which in turn will result in generation of employment opportunities and economic development. Therefore these dimensions are not standalone ones but are positively associated.

Figure: 2.1 Dimensions of Vocational Education Programme



Source: V.S. Mahrothra, *Vocational Education, and Training: Challenges and Strategies*, PSSCIVE, Bhopal, 2005.

2.5 Types of Vocational/Technical Education Programmes in India

In India, at national level, there are three different types of Technical and Vocational Education and Training (TVET) Programmes, which are provided through 3 distinct types of institutions. First is the system of polytechnics, which admit students after 10 years of school/high school pass and offer diploma after 3 years of instruction. The system is managed by the State Directorate of Technical Education at the state level and the Union Ministry of Human Resource Development through its Bureau of Technical Education at the national level. The second system is that of Vocational Education in the Higher Secondary Schools, which also accept students after 10 years of general education and offers courses of 2 years duration. This is managed by the Directorate of School Education/Vocational Education and is coordinated by the Union Ministry of Human Resource Development through its Technical Education Bureau. The third system is that of Vocational Training provided separately through established Industrial Training Institutes (ITIs). These institutes also accept high school pass students for majority of the trades offered by them. Large numbers of these trades are of 2 years duration. The management of these institutions is looked after either by the State Directorate of Technical Education for Vocational Training and is coordinated by the Union Ministry of Labour through its Directorate General of Employment and Training. In addition, there are several institutions belonging to different State/Central Government Departments or Ministries, besides, private sector institutions, which offer a variety of vocational programmes/courses of different duration for different target groups.

In addition to the programmes mentioned above, some other vocational training programmes that are being organised at state level are;

- i. Certificate courses: - The certificate courses are offered by States and Union Territories sponsored institutions and are being conducted to prepare semi-skilled craftsman, workers and operators. They are governed by regulations, norms and standards set by the individual institution and, therefore, the programmes suffer from lack of quality and uniformity of instruction. The course duration varies from 6 months to 2 years.
- ii. High school level vocational courses; These vocational courses are mostly run in Technical High Schools, Multi-Purpose High Schools, Post Basic schools, Junior Technical Schools and Agriculture High Schools, meant for education in one technical and vocational pre-subjects along with the general academic subjects. Examination is conducted by respective State Boards. The vocational and technical base is limited in scope and vocational training is not terminal in nature. It is not organised on the lines of comprehensive system of school education as in USA, UK, Germany and Japan. The vocational course as a subject forms an integral part of the total education process. In most of the States, it is available in limited number of schools.

Then there are some part-time training programmes offered and sponsored by the Central Government, State Government and Local Productivity Councils to develop occupational knowledge and skills among adults working in industries. Some of these training programmes are discussed here.

- i. In-plant training programmes: A number of industrial and business organisations (big or medium) within the plant organise from time to time, short-term training programmes, based on occupational knowledge and competencies to enhance the productivity of workers. The programmes include apprenticeship and pre-service job training, on-the-

job training and supervisory training. A good proportion of the present work force is trained as skilled workers, operators and trainees through this system of training in industry.

- ii. Staff-training programmes: The following programmes are offered in the country under this scheme:
 - a. Polytechnic teachers training programmes: For technical teacher's training institutes established by the government of India at Chennai, Bhopal, Kolkata and Chandigarh serves the training requirements of the polytechnic teachers of southern, western, eastern and northern regions, respectively. The duration of training varies. The technical teachers training institutes also conduct training programmes for other target groups.
 - b. Craft instructor training programmes: To provide training to instructors working in ITIs apprenticeship training establishments, 6 Advanced Training Institutes (ATI) were established at Mumbai, Kolkata, Chennai, Hyderabad, Kanpur and Ludhiana. The course duration which ranges from 6 months to 1 year give the knowledge of development of skills and principles of teaching. Refresher courses are also conducted in ATIs.
 - c. Foreman Training Programmes: Foreman training institutes at Bangalore provides long-term and short-term courses for existing and potential foreman in technical and managerial skills. In service tailor made programmes, as per the need of a particular establishment are also conducted by the institutes.
 - d. Executive training programmes: Central Staff Training and Research Institute at Kolkata has been established to train officers and staff of

the Central and State Governments as well as of industrial organisations. The training is provided to those who are directly engaged in training, development and research activities related to the field of vocational training. The institute has started developing courses and institutional materials for industrial training institutes.

2.6 The Role of NCERT in Vocational Education

The National Council of Educational Research and Training (NCERT) is concerned so far only with the Higher Secondary *Vocationalisation* Programme (HSVP) in formal schools. Its Department of *Vocationalisation* of Education (DVE) has been converted into a Central Institute of Vocational Education (CIVE) which is the nodal agency for all aspects relating to curriculum development, staff development, research, evaluation and monitoring and international contacts. The scope of the department extends over the entire country but it has only an advisory and guiding role to perform. Having attained sufficient experience and expertise in Higher Secondary *Vocationalisation* Programmes (HSVP), the department is now actively associated with the development of various types of vocational courses for the undergraduate stage of education under the auspices of the University Grants Commission. In relation to the vocational training component under the Ministry of Labour the NCERT is represented on the National Council of Vocational Training (NCVT) which is the apex decision making and coordinating body for its institutions throughout the country. Similarly, in respect of the Technical Education Programme (TEP), the NCERT is represented in the All India Council of Technical Education (AICTE), a statutory body to look after technical and management education in the country. The NCERT is also directly involved with the programme development of the Indira Gandhi National Open University (IGNOU) and National Open School (NOS).

2.7 Management System and Personnel for Vocational Education in India

The NCERT studies have described the present state of management system development at the centre and in various states in terms of its structure and human component.

The role of a proper management system manned by personnel with proper backgrounds and experiences is well accepted but its emergence has been rather slow and often erratic. Essentially, the management system consists of four distinct categories of functions for which structures are visualised to operate at four different levels. The functions are:

- a) Policy and co-ordination
- b) Administration (including supervision and financing)
- c) Research and development and
- d) Examination and accreditation.

The four levels at which these operate are:

- a) National
- b) State
- c) District and
- d) School.

2.8 Policy and Coordination of Vocational Education in India

The Joint Council of Vocational Education (JCVE) is responsible for the overall coordination of all other bodies and departments concerned with vocational education. The State Council of Vocational Education (SCVE) is a

body which functions as JCVE at the state level. The District Vocational Education Committees perform the function of local coordination.

2.9 Administration of Vocational Education in India

The division of Vocational Education under the Bureau of School Education (BSE) provides finances and monitor the programmes of vocational education. The Regional Boards of Apprenticeship Training (RBAT) administer the Apprenticeship Act of vocational apprentices. Directorates of Education (DE) or their counterparts of State Governments (SG) are responsible for general administration and finances. The district vocational education offices or the district education offices provide local administration and supervision in respect of the *Vocationalisation* programme. The principal/vice-principal is the administrator concerned at the school level.

2.10 Research and Development of Vocational Education in India

The Department of Vocationalisation of Education (DVE), NCERT provides overall academic direction, maintains standards, conducts research and evaluation and co-ordinates curriculum development and teacher training. The Regional Colleges of Education (RCE) of the NCERT function as the regional units of the NCERT. The State Institute of Vocational Education (SIVE)/State Council of Educational Research and Training (SCERT) perform Research and Development (R&D) functions at the state level. *Table: 2.1* given below shows the agencies involved in the implementation of vocational education in India at different levels (Sacheti, 2005)⁶⁵.

Table: 2.1 Agencies Involved at Various Levels in the Implementation of the Vocational Education Programme in India

Level	Policy and Co-ordination	Research and Development	Administration	Examination/ Evaluation
National	Joint Council of Vocational Education (JCVE)	Pundit Sunderlal Sharma Institute of Vocational Education (PSSCIVE)	Bureau of Technical Education (BTE), MHRD	Central Board of Secondary Education (CBSE)/ Indian Council of Secondary Education (ICSE)
Regional	-	-	Regional Boards of Apprenticeship Training (RBAT)	-
State	State Council of Vocational Education (SCVE)	State Council of Educational Research and Training (SCERT)/ State Institute of Vocational Education (SIVE)/ State Institute of Education (SIE)	State Department of Education(SDE)/Vocational Council/Wing (VC(W))/ Directorate of Vocational Education (DVE)	State Board of Examination/ Higher Secondary Council -
District	District Vocational Education Committee (DVEC)	-	District Educational/ Vocational Education Officer	
School/ Institute	School/Institute Advisory Committee (S(I)AC)	-	Principal/Head Master	-

Source: A.K. Sacheti, *Vocational Education, and Training: Challenges and Strategies*, PSSCIVE, Bhopal, 2005.

2.11 Sources of Policy Concepts for Vocational Education in India

Policy formulation is a complex exercise which involves many departments, institutions and organisations. The sources of policy concepts are numerous which have accumulated over a period of time. In India there is hardly any legal framework for vocational education policies as in many other countries. The Indian constitution does not provide specific thoughts or directives on vocational education. There are no national laws to regulate the efforts in this area. The States also have not resorted to legislation on vocational education. Indian education in general is non-legislative in nature.

As a mechanism prevailing for over hundred years, the concepts and committees were appointed from time to time. These were not statutory bodies in the sense that their recommendations could be binding on the Union or State Governments. They were accepted partly or wholly depending on the desire of the government in power. Scanty financial resources often proved to be the major constraint in the implementation of many recommendations repeating decade after decade without being questioned. Slow and cyclic movement is what one encounters if one scans through the pages of history in this critical sector of education.

2.12 Mechanism for Policy Formulation of Vocational Education in India

According to the National Constitution, education was a state subject till 1976. Through an amendment of the constitution later it occupied a place on the concurrent list. Now it is fundamental right by an amendment made in 2002 (MLJ, GOI, 2007)⁶⁶ (Constitution - Eighty-sixth Amendment - Act, 2002, s. 2). The Union Government coordinates the entire efforts in this area by laying down policies, intervening through the national planning process and using persuasion to bring about desired changes. The National Policy on Education (NPE, 1986)⁶⁷ is a comprehensive document adopted by the parliament and has been the instrument to guide the educational development throughout the country. It has recently been comprehensively reviewed by a national committee constituted for this purpose.

Vocational education which has an overlap of areas has to coordinate with a number of bodies and departments. This has to be done through a joint coordination mechanism and is now being operated through Joint Council of Vocational Education (JCVE) at the national level, functional since August 1990.

Educational policy formulation is under the overall charge of the Ministry of Human Resource Development (MHRD). The Ministry is guided by the Central Advisory Board of Education (CABE) which is the national level advisory body which has, amongst others, the education ministers of all the States as members. However, in the area of overall planning for the country of which the educational planning is a part, the National Development Council (NDC) with the Prime Minister as the Chairman is the apex level body. The Planning Commission (PC), with the Prime Minister as the Chairman, is the Central Executive Agency (CEA) for the planning process.

The formulation of policies and strategies is an extensive exercise involving consultations between various expert institutions, nongovernmental agencies, industries, teachers' unions, students and community at large including the mass media.

The statutory bodies/agencies and departments have their own modalities for involving various sections of society and other concerned institutions/organisations. In the field of general and vocational education, the National Council of Educational Research and Training (NCERT) and the National Institute of Educational Planning and Administration (NIEPA) are two such apex institutions. The State Councils of Educational Research and Training (SCERT) are the principal R&D institutions in all the States. The NCERT and many of the SCERTs have a wing or a cell of vocational education for R&D functions feeding into the process of policy formulation. These institutions function as coordinators or facilitators of wider involvement and interaction.

2.13 The Centrally Sponsored Vocational Education Programme in Schools (CSVEPS)

The scheme launched in 1988 was terminal in nature. Vocational courses in Agriculture, Business and Commerce, Health and Para-Medical Services, Engineering and Technology and Home Science were started in schools across the country at the +2 level of the school system. In India the nationally accepted pattern on the education is the 10+2+3 system. All the States and Union Territories have accepted it for certain uniformity in the educational system.

The main objectives (MHRD, 1988)⁶⁸, scope and features envisaged under the scheme are briefly described at first to enable a proper understanding of the programme.

2.13.1 Main Objectives

- a) To enhance individual employability by providing diversification of educational opportunities
- b) To reduce the mismatch between demand and supply of skilled manpower
- c) To provide an alternative to higher education

2.13.2 Scope

The Centrally Sponsored Vocational Education Programme (CSVEPS) is a distinct stream intended to prepare students for identified occupations spanning several areas of activity. These courses are offered in General Education Schools (GES) after the secondary stage (class X) for the duration of two years, though the scheme has the flexibility to change the duration from one to three years if considered suitable. Financial assistance for conducting the programme is given by the central government on a sharing pattern prescribed

in the scheme. An allocation for the purpose has been made in the budget of department of education. District Vocational Surveys (DVS), workshops and equipments, curriculum development and teacher training are funded 100 percent from the centre. The salaries of teachers are shared between the centre and the states, i.e., 75% borne by the Central Government and 25% by the States. For the administrative staff the sharing is 50:50. The States contribute 100% towards the raw materials required for the training and expenses on examination and certification.

2.13.3 Features

As stated earlier a high ranking body called the Joint Council of Vocational Education (JCVE) has been setup at the national level for laying down the policy guidelines, planning and co-ordination of Vocational Programmes conducted by different agencies of organisations. It has a membership of representatives from Vocational Authorities (VA), State Governments (SG), Chambers of Industry (CI), Linked Organisations (LO) and Non-Governmental Organisations (NGO) engaged in vocational activities. A counterpart body of JCVE was envisaged to be setup at the state level.

(i) Management Structure

Separate management structures were expected to be setup at the national, state and district levels. The Bureau of Vocational Education (BVE) in the Ministry of Human Resource Development (MHRD), Department of Education (DE) had to provide secretariat support to the JCVE, maintain linkage with national, regional and state level agencies, provide financial support and oversee the implementation of the programme in the country. The National Council for Education Research and Training (NCERT), through its Vocational Education Department (VED), now the Central Institute for

Vocational Education (CIVE) serves as the apex institution of research and development, giving academic support to the ministry in the planning and implementation of the vocational programmes. Its task is to undertake activities for curriculum development, to conduct short term training programmes for functionaries and teachers of vocational education and to ensure the quality and standard of the courses. It should also undertake monitoring and evaluation of the programme.

The Directorate of Education (DE) had to provide administrative leadership to the programme at the state level. A separate wing in the State Council of Education Research and Training (SCERT) had to be setup for research and development support at the district level. It has been envisaged that a District Vocational Committee (DVC) would be constituted to promote the programme and for maintaining linkage with related institutions, schools and community. At the school level, the vice principal or a senior staff member had to remain in-charge of the management and implementation of vocational courses. At the regional level, the Boards of Apprenticeship Training (BOA) are expected to cater to the training needs of the vocational students after they complete the vocational courses at the +2 stage. They are responsible for liaison with industry and for seeking placements for apprenticeship training of the students for one year. The Regional Colleges of Education (RCE) under the NCERT are to function as the Vocational Teacher Training Institutions (VTTI) in addition to other research and development functions.

(ii) Teaching Arrangements

Vocational courses in three or four trades are offered in each school at the +2 level of the 10+2 system of education. Generally, 20-25 is the optimum number of students in each vocational course so that the facilities created are

not underutilised. Infrastructure support, such as equipments and work-sheds for laboratories, where practical skill training is given, are provided by the Directorate of Education (DE).

(iii) District Surveys.

The State Governments/UTs are to carry out vocational survey in the districts mainly with such tools as questionnaires and interviews to establish demand of manpower needs in the area, the range of available occupation, the trend of emerging occupations and the extent to which training facilities are available in the neighbourhood before launching the programme to ensure that the courses offered have demand in labour market.

The GFC curriculum developed by NCERT is recommended as a compulsory component of all the vocational courses at the +2 stage.

The curriculum transaction in Vocational Education has three major components:

1. Education and basic skill training in schools
2. Specialised skill training in collaborating institutions
3. On-the-job training in actual job situations.

After the completion of the course, the vocational graduate has the option to go for apprenticeship training in Industries/ Organisations/ Agricultural Farms etc.

2.13.4 Scheme of Studies

The scheme of studies for the vocational stream consists of:

- Language
- General Foundation Course

- Health and Physical Education and
- Vocational Electives

The table given below (*Table: 2.2*) shows the weightages given to the above components in the VHSE curriculum. Language, General Foundation Course (GFC) and Health and Physical Education taken together has a weightage of 30% and the Vocational part including theory and practical has a weightage of 70%.

Table: 2.2 Components of VHSE Curriculum

Component	Weightage
Part A	
1. Language(s)	30%
2. General Foundation Course (GFC): General Studies, Rural Development, Environmental Education, Entrepreneurship Development, Information and Communication Technology	
3. Health and Physical Education	
Part B	
Vocational Theory and Practice Including On-the-Job Training	70%

Source: www.vhse.kerala.gov.in/

Vocational education covers a wide variety of areas like Agriculture, Engineering and Technology (Including Information and Communication Technology), Business and Commerce, Home Science, Health and Paramedical Services and Humanities. Each area in itself comprises a large number of special courses.

The courses will be modular in nature catering to some specified competencies based on the credit system. Accumulation of a prescribed number of credits after successful completion of these courses will be the requirement for the award of a certificate. The vocational courses so offered will have

inbuilt flexibility to suit local needs and the needs of the target groups in order to enhance their relevance and effectiveness.

With the phenomenal strides in the area of information and communication technology and globalisation of economy, the spectrum of areas for which competency and skills need to be developed through vocational education has become very wide. On the one hand, there will be need to develop manpower in the use of information and communication technology so as to spread its applications even into the remote areas and, on the other, the vocational requirements of rural India in agriculture and agriculture-based technology will have to be met. In addition, one cannot forget the traditional artisans and craftsmen. Their skills and competency have to be passed on to the new generation. Formal courses in these trades and crafts will make use of modern technology to improve efficiency and quality, and at the same time, to overcome drudgery, traditionally associated with these trades and crafts. These should receive adequate recognition and, wherever necessary, due certification.

(i) Language

The study of language would take care of communication skills which in no way are less important for students pursuing vocational courses. The only, but highly significant, difference would be in organising the language courses in such a way that they take care of the grammatical structures and additional vocabulary peculiar to the trade or vocation of each student. In addition, there would be units on culture and literature to cater to the emotional and intellectual growth of the learner and the harmonious growth of his personality. The choice of the language may be determined by the learners' need and the infrastructural facilities available in the system.

(ii) General Foundation Course

The General Foundation Course (GFC) for the vocational stream will mainly comprise General Studies (GS), Entrepreneurship Development (ED), Environmental Education (EE), Rural Development (RD) and Information and Communication Technology (ICT). The course in general studies is the extension of the foundations already laid during the first ten years of schooling. Its purpose is to sensitise the youth to the social, economic, political and moral or ethical issues of contemporary India and the world.

Entrepreneurship development including salesmanship is necessary for self-employment and, as such, forms an important part of the general foundation course.

Addressing environmental issues at the grass root level is necessary for sustainable development. Therefore, the students of vocational education, who are expected to enter the world of work at an early age, have to be made aware of the concerns and issues related to environmental conservation and development.

In a country where nearly two-thirds of the population lives on agriculture, the rural areas have a tremendous potential for providing self-employment opportunities. Rural development, therefore, forms an integral component of this course.

Another significant development of the day is the use of computers in every walk of life which makes the knowledge of internet, e-mail, and e-commerce absolutely essential. Hence, Information and Communication Technology (ICT) is also to be included in this course.

(iii) Health and Physical Education

At every stage and in every stream of schooling, opportunities for regular physical training and activities must be provided for physical fitness. However, for the students of vocational courses, the exercises and activities involving less of physical strain will be more suited because these students have to undertake strenuous physical activity in their practical work and on-the-job Training in the regular vocational courses. Keeping this in view, physical activities like yoga, meditation, and light exercises involving posture change, and relaxation may be recommended. Improvement of local sanitation and public health should form part of the fieldwork of this course.

(iv) Vocational Electives

Vocational courses cater to the requirements of varied and heterogeneous clientele. Majority of the pass outs from the vocational stream will soon be entering the world of work. Students have to be given a large number of options based on the local needs, employment opportunities for wage employment and self employment, their aptitude and interest, and the geographical location of the school. Students will, thus, get an opportunity to choose courses in the areas of their liking. Within each broad area, a number of courses for developing specific competencies are to be prepared. This can be done after a detailed analysis of the functions and tasks expected to be performed by a worker in that area.

The possible employment opportunities, for wage employment as well as self employment, are identified by experts drawn from the relevant fields. The related competencies in terms of knowledge, skills and attitudes are identified and the learning experiences are then organised accordingly. Grouping of similar types of learning experiences to form a module to facilitate the teaching-

learning process and to manage the implementation of the vocational education programme is then initiated. A careful review and modification in the grouping of the options from time to time would also be desirable. Some kind of effective mechanism for standardisation and quality control of the existing courses is needed to enhance the credibility of the vocational courses and the acceptability of the pass outs among potential employers.

2.13.5 Instructional Strategy

Vocational education programmes require well tried out strategies for effective teaching-learning and the practice of vocations and entrepreneurship. Practical training is an essential component of the vocational courses, as it helps in developing the required competencies with adequate precision. For this purpose, schools need to make sufficient provision for exposing the students to work at the Production cum Training Centres (PTC) and for integrating their knowledge with skills through job training and project work. The competencies thus acquired would be further reinforced and refined during apprenticeship.

(i) Production cum Training Centre (PTC)

Schools providing vocational courses should strive to have their own Production cum Training Centres (PTC). These centres provide the learners with real life experiences and an opportunity for acquiring on-the-job skills and developing entrepreneurship abilities. Thus, the schools offering vocational courses may undertake semi-commercial ventures in production and services to generate income. It will provide additional incentives to the learners and teachers in monetary terms as they will share the profits. It is also a sound pedagogical practice. The community should be suitably involved in marketing the products.

(ii) On-the-Job Training (OJT) and Integration of Knowledge and Skills

During the transaction of the vocational courses, a continuous integration of knowledge and skills take place in the schools. It, however, needs to be augmented through On-the-Job Training (OJT) and project work. In order to be enriched with practical experience, the students are taken to a service centre or repair centre or production unit to work in a real life situation under the guidance of an expert practitioner. There must, therefore, be provision for On-the-Job Training (OJT) for certain number of hours for every vocational course. The students may be evaluated jointly by the teacher and the expert practitioner.

Students are to be given project work to be done individually or in small groups. It will help them consolidate their learning, learn to communicate, and achieve the time target.

(iii) Apprenticeship Training

Under the Apprentices Act, many of the vocational courses currently being offered are expected to be providing apprenticeship training to the pass outs. Apprenticeship training enables the pass outs to get acquainted with the industrial environment and to get firsthand experience of working in an industry and its work culture. In order to be acceptable to an industry under the provisions of the Apprentices Act (AA), a student would have to demonstrate the competencies he is supposed to have acquired. However, apprenticeship is not a substitute for the practical work or workshop training in the school.

2.13.6 Instructional Time

For an effective implementation of the Vocational Education Programme (VEP), the provision of adequate instructional time as per the requirements of the various courses needs to be ensured. It has to be impressed upon the

schools/agencies that the time allocation as suggested in the Programme of Action (POA, 1992) ⁶⁹ i.e., 30% time for language, general foundation course, and health and physical education, and 70% time for vocational courses may be adhered to.

2.13.7 Evaluation and Certification

Assessment in vocational courses has to be performance oriented. Continuous and Comprehensive Evaluation (CCE), with a built-in procedure for remedial measures, will ensure effective achievement of the requisite competencies. A complete and comprehensive record of the assessment of the students' performance including evidences reflecting their personality traits will be maintained. Both process and product assessment are important for correct evaluation. The certificate issued will make a mention of the competencies acquired along with the credits earned therein.

2.13.8 School-Industry Linkages

Linkages between schools and industries catering to the areas relevant to the vocational courses will be an important feature of vocational education. The school enters into a mutually beneficial relationship with a nearby industry to share its facilities, teachers, etc. and to provide opportunities to interns. Such a system is also available through the Apprentices Act. In many countries, the industry eventually employs the workers trained in it. It substantially reduces the cost and time spent in the schooling process. The curriculum for such training is largely determined by the industry. Such a symbiosis can be developed by schools with both the organised and the unorganised industry.

The term '*industry*' in this context includes every such organisation as has direct relevance with the vocational courses offered, and has the potential for employment. As such, vocational education has to cater to the needs of

Organised Sector (OS), Service Sector (SS), Rural and Agro-Based Industries (RABI), Agriculture Related Vocations (ARV), Business and Trades (B&T) and Other Crafts.

In order to have experiences related to the world of work, the learners shall have to have interactions with outside organisations, agencies and community at large. The schools shall have to play an important role in establishing these linkages.

2.14 Need for Vocational Education

Vocational education with its primary focus on trade related skill development is a much sought after scheme of education in many parts of the world. The importance of such a scheme of education for a fast developing country like India with a huge deposit of raw manpower assumes many fold dimensions. Some of the important arguments that can be put forward in favour of a scheme of vocational education in India are given in the following paragraphs.

Gandhiji emphasised long back that “Millions of India’s peasants starve for want of a supplementary occupation..... Over 80 percent of her populations have more than a quarter of their time lying idle...The country had steadily grown poorer because of this enforced idleness....The problem is how to utilise these billions of hours of the nation....” (Gandhi, 1919)⁷⁰.

The International Commission of Education for the 21st century under the Chairmanship of Jacques Delors (UNESCO, 1996)⁷¹ has pointed out that education throughout the life is based on four pillars - ‘learning to know’, ‘learning to do’, ‘learning to live together’ and ‘learning to be’. ‘Learning to do’, is essentially related to vocational education. The formal education system emphasises the acquisition of knowledge to the detriment of other types of

learning. In the present scenario there is a demand from the industry that students must be more trainable.

The real image of India is not reflected in its metropolises but in the diverse and complex matrix of her societies, interspersed over an area of almost 33 lakh square kilometres with 934 million people. Still 672 million people live in the villages and are dependent directly or indirectly on land based vocations accounting for more than 78% of the total working population of India and contributing a little over 30% of the GNP and generating almost 20% of export earnings. There is an urgent need to develop appropriate technological skills to revolutionise the productive capacity of the farmers. Development of the services and communication sector is badly needed. It is necessary that the institutions located in rural areas develop their human resources keeping in view of the emerging need of future development. More than 80% of the school going population drop-out at under graduate level. Youth migrates to urban areas and remain unemployed or under employed for quite a while and their family lives in dire poverty. Major deficiency of the existing educational system is insensitivity to rural woman though they contribute significantly to national income by way of providing active labour. Many of them acquire skills and competency in various indigenous crafts using locally available low cost raw materials. Their potentiality remains untapped due to the lack of proper training and opportunities. They should be encouraged to take up entrepreneurship, to convert raw material into value added products and take initiatives in income generating activities in the rural areas to supplement family income to sustain India as a country proud of its cultural heritage and having an abiding faith in its capabilities for bringing speedy socioeconomic regeneration.

The rural-based vocational course must be aimed at developing a healthy attitude among the students towards work and life and to enhance individual

employability and reduce the mismatch between the demand and supply of skilled manpower.

Given in the following paragraphs are thoughts on the different perspectives regarding the need for vocational education in India.

2.14.1 Economic Perspective

Today, the economic development has emerged as the major principle behind all educational policies. To make the close alignment between the education and economic systems, a variety of structural and curricular changes are recommended in terms of *Vocationalisation* of education. It is important to understand the economic role of education in preparing young people for work within the context of a declining manufacturing industry, fast technological changes and continuously increasing unemployment (Shah, 2005)⁷².

Leclercq (1994)⁷³ observed that because of the economic crisis and the threat of unemployment which it brings to bear on young people, it has seemed necessary to familiarise them with technological learning and the world of work even while they are engaged in general education. The process has been brought into gear from compulsory schooling onwards, with the introduction of technological instruction included in the curriculum-in France in 1985, in Britain in 1986, in Netherlands in 1989, and in Spain in 1990. Today it takes place in the upper secondary school.

In an article Khanna (2005)⁷⁴ presented the following observations. One thousand years ago, the world was roughly divided into three main trading blocs: China, India and the rest of the world; each with about 33% of the world trade. It is estimated that India had nearly 27% of World Trade about 250 years ago, when the Britishers landed in India. The King of Spain sent Columbus to search for India, as it was a rich country. After one thousand years, the

country's share in world trade is just 0.62% though it has one of the largest human resource capitals. Now India has only 1.35% of world's buying power, 0.38% of tourist arrivals, 0.35% of world FDI but 17% of world's human capital and 2.2% of world's total land area. Obviously there has been problem in managing the resources (physical and human). An effective administration and good governance would have brought about greater economic prosperity.

The latent energy of our nation is gigantic, which needs to be allowed to blossom and grow. No amount of money or technology can ever replace the presence of effective human capital. In fact, effective manpower or personnel know how is required to rustle up other resources. The reverse is not true, especially in a competitive and global environment. Better governance can unleash this latent energy for India.

55% of the Indians (550 million people) are below 30 years of age and 70% of them (728 million people) are below 35 years of age. While India do needs graduates from Indian Institutes of Technology (IIT), Indian Institute of Management (IIM), Medical Colleges and Engineering Colleges, the actual requirement is for skilled manpower from vocational education and training institutions. India's population needs basic education facilities and at least 95% of it needs to get into some sort of vocational education and training after high school (Khanna, 2005)⁷⁵.

Even after 60 years of independence, India does not prepare internationally certified carpenter, car mechanic, retailer, export-import assistant, mason, electrician, gardener, beautician etc. China already has more than 1300 vocational courses in position for preparing world-class skilled manpower and product. There are more than 2500 trade options in Germany. These trades cover the manufacturing, trading and service sectors. India is

lagging behind and needs this to change for the sake of employment generation and improving the economy to international levels of efficiency and productivity. It should train at least 15 to 20 million people every year above the age of 14 and up to 55 in different skill sets, which are required for the domestic as well as the world market. The country offers programmes and courses for preparing manpower in Information Technology (IT) and software, which contributes 2% to the Gross Domestic Product (GDP). However, skill sets are needed for the balance 98% of the economic activity in manufacturing, trading and service sector (Khanna, 2005)⁷⁶.

India must become an international hub for manufacturing, trading and services. It has all the ingredients to achieve this status but there is a need to free many socioeconomic attributes from the clutches of unnecessary regulations and provide better administration and governance for expansion of economic sectors through generation of internationally acclaimed human resource. Vocational Education and Training at a large scale is the right choice for our country to become an economic super power.

2.14.2 Human Development Perspective

Vocationalisation of education should be dealt and approached within the comprehensive concept of Human Development (HD). It is in this context that the following observation on human development in South Asia by UNDP (1998)⁷⁷ can be appreciated.

“The challenge for the South Asian region today is to travel the vast distance between its performance and its promise. On the one hand, it has emerged as the poorest, the most illiterate the most malnourished, and the least gender sensitive region in the world. On the other hand, it has all the potential to become the most dynamic region in the 21st century, if there is massive

investment in human development. The most critical components in any such investment plan are: 1. Basic education for all and; 2. Relevant technical skills.”

According to William (2005)⁷⁸ Vocational Education and Training make an individual successful in life. It is deep rooted in Indian philosophy, culture and tradition. Relevant, employment and market oriented VET is essential in present day scenario

In Haider’s (2005)⁷⁹ view point developing people is the essence of any Human Development effort and it is an important goal of all other development activities. All forms of development (economic, technological, agricultural, industrial etc.) are ultimately meant to serve people in terms of improving their happiness through better quality and standards of life.

It is a widely accepted fact that Human Development plays a crucial role in the development of a nation. Those countries, which have developed their people by investing in sectors such as education, health and science and technology, have achieved considerable success. Most developing countries on the other hand, due to constraint of resources tend to make Human Development choices haphazardly, rather than in a continuous and planned manner, especially in terms of identifying development sectors and target groups and in choosing appropriate processes. They need to prepare a frame work for action - a comprehensive one - keeping in view the requirements of all people. The concept of HD as discussed by Rao (1997)⁸⁰ includes the process of development of people’s competencies, (knowledge, skills, attitudes and values), and also enabling them to apply these competencies to improve their own lives and those of the others. In the later case, the impact will be on the overall economic growth and social development. Seen in this way, it is apparent that human development results in economic development, while

economic development also contributes towards human development. The only consideration here is that the benefit of development should reach all people rather than only a segment of the population.

Thus, Human Development accelerates the process of development. There are different dimensions of Human Development, such as poverty elimination, health care, employment, wage and income generation, reducing child mortality, reducing maternal mortality, empowering women, enhancing enrolment in schools, reducing gender gap, availability of water, long and healthy life, decent standard of living, decent work to do for earning livelihood etc. These aspects are concerned with individual's growth, society's development and finally the national development.

Every aspect of the societal or national development requires human force to manage and implement it. For example, for health care and health services, doctors, nurses and other paramedical personnel are required to manage hospitals, nursing homes, pathological services etc. For providing water, electricity, housing, roads, transport etc., a large number of professionals and persons with relevant skills and knowledge are needed to maintain and manage these services. Similar is the case with other sectors. Thus, for the overall development, what is required is development of individuals' capabilities as per his/her potential and application of these capabilities for his/her own benefit and for the benefit of others, resulting in the development of society, and finally the development of the nation. This suggests that there should be some mechanism for developing individuals' capabilities and a system to provide them opportunities to use their capabilities for the prosperity of the society and building of the nation. This is a dynamic process, where individuals' capabilities are developed, which contributes to the economic growth, and the benefits of the economic growth provide further developmental

opportunities to individuals. The iterative process can continue till a dynamic equilibrium is achieved based on the availability of resources and capability of resource generation. There are obviously some restrictive factors within the system as well as outside the system, which do affect this process.

The instrument for Human Development is education. It is education that helps in building human capabilities. Rather, it can be said that education is nothing but the Human Development process. It helps individuals grow as per his/her potential. The importance of education for development is not a new realisation. It has always been recognised. The point, which requires consideration, is what form of education should be provided, which help individuals to do, to improve living standards, to acquire skills and knowledge necessary for gainful employment, to live and work with dignity, to participate fully in development and to improve the quality of their lives. The form of education imparted should be relevant to achieve the above goals and must be available to all children, youth and adults.

When an analysis of the unemployment situation in India is done applying the concept of human development, the only remedy or alternative visible is to go for *Vocationalisation* of school education in a big way. There is a general agreement that basic education is essential for improving upon the standard of living. These are the two extremes. At one end, all children of school going age should have the right for basic education; on the other a small percentage of youth get the opportunity to acquire higher education in science and technology. In between there are large number of children and youths who are left in a state, where they do not get opportunities to acquire the skills and knowledge to enhance their potential, enabling them to live and work with dignity and participate fully in development. It is here that Vocational Education and Training (VET) is required for a large number of people,

covering various socioeconomic sectors, and covering local occupations as well as those where global competition is required. The Vocational Education (VE), thus, should be comprehensive and inclusive i.e., everyone desirous to acquire skills and competencies in any vocation should be given an opportunity to acquire and develop them. It should be a part of life-long education programme.

2.14.3 Employment Generation Perspective

Attaining full employment is considered to be one of the primary objectives of any economy and society. However with more than a billion mouths to feed, this, in the recent past has become an onerous task for India. The problem has accentuated in the last decade, when the experience of jobless growth have compounded the woes of globalisation. Employment cannot be generated without economic growth. However unless employment generation is made an integral part of the growth and development matrix, interests of labours cannot be protected. The recent developments in the developed countries, particularly the US and Japan, makes for a more compulsive case for the above, driving home with absolute certainty the point that economic growth and prosperity sans employment generation, calls for painful adjustments for even of the most developed of nations.

According to Karmakar (2005)⁸¹ economic growth in the last decade in India, since the liberalisation of the economy began in 1991, has unfortunately been of the jobless kind. The rate of employment growth has not been commensurate with the rate of growth in the economy. The consequence of this has been an increase in the inequality in the economy, a common feature in developing economies. Unavailability of skilled man power of the right kind is one reason among many others that hinders the generation of employment even when there is a growth in the economy. Availability of skilled manpower will

accelerate economic and industrial activities which in turn will generate more employment.

There are no two opinions that the growing problem of unemployment amongst the youths requires the Vocational Education and Training (VET) to be rigorously implemented in right earnest. Only less than 10 per cent of children admitted in schools are going for higher education and a very large percentage is entering the world of work without possessing employable skills. A radical change in the system of secondary education would divert a large number of students at the completion of their school education to useful occupations.

2.14.4 Social Perspective

In a convocation address at the University of Madras on 14th October, 1965 Prof. D. S. Kothari opined that in an age of science and technology, education at all levels should contain three essential elements: literacy, (i.e., language, literature, civics and so on), numeracy (i.e., science and mathematics) and work experience. Work experience through participation (productive work, may be on-farm, in factories, in workshops and so forth would help to lessen the distribution between mental and manual work, or must make employment easier and more readily acceptable, it would contribute to national productivity and it would help national and social integration (CSIR, 2000)⁸².

The Second International Congress on Technical and Vocational education (UNESCO, 1999)⁸³ concluded that Technical and Vocational Education, as an integral component of life-long learning has a crucial role to play in this new era as an effective tool to realise the objectives of a culture of peace, environmentally sound sustainable development, social cohesion and international citizenship.

Psacharopoulos (1997)⁸⁴ observed that vocational education and training is perceived throughout the world to be a favoured instrument of social engineering for achieving a series of objectives such as accelerating economic growth, reducing youth unemployment and benefiting from economic globalisation. Many consider it is like building a bridge to lower transportation costs between two sides of a river. Others argue that it is not a panacea for all social ills.

India has about 100 million people with disabilities of different kinds. All these disabilities are covered under the Person with Disabilities Act (PWD Act, 1995)⁸⁵. Thirty million children with disabilities need earnest education and vocational training leading to total rehabilitation as observed by Sing (2005)⁸⁶.

India inherited its education system from the colonial past. At that time over riding stress was laid on the three R's (Reading, Writing and Arithmetic) of education. The advent of Braille in the early 19th century opened the gateway of knowledge for visually impaired children. The special education system for children with special needs was brought to India by Christian Missionaries. The establishment of special schools in India started in the last two decades of the 19th century in India but the emphasis was on the three R's of education. The Report on Blindness (1944)⁸⁷ stressed the need of initiating need-based vocational training programme to students with various disabilities.

It is a fact that, even after 65 years of achieving independence, millions of children in the age group of 6-14 are not attending schools in India. Increasing number of out-of-the school children is aggravating the already serious problem of unemployment in the country. So an alternative system of education should be made available to these children. A flexible course

curriculum and teaching methodology, with cost effective educational infrastructure is the need of the hour. It is the prime duty of the educational planners and administrators to provide necessary opportunities to the dropouts to prove their abilities and worth.

Janak et. al. (2005)⁸⁸ in an article opined that rural women are the backbone of the communities and transfer knowledge to the future generations through their children. Further rural women are the ones who face more problems due to overall oppression physical social and mental levels. In tribal communities female education is very low apart from the dropouts, a vast majority of tribal children and women are unable to develop the necessary skills for employment because of the lack of alternative system of education. According to Sing (2005)⁸⁹, vocational training programmes must be organised to empower the disadvantaged and underprivileged by providing them holistic education in collaboration with formal educational institutions and industrial establishments of the local community.

2.14.5 Globalisation & Educational Policy Perspective

Verma (2005)⁹⁰ observed that the advent of 21st century is witnessing tremendous explosion in knowledge and rapid changes and development in the field of technology, particularly information and communication technology. There is also a policy of liberalisation of economic sector and globalisation, which necessarily lead to heightened competitiveness and a demand from the consumer for increasing the quality of products. All these point towards the fact that though it is difficult to predict the kind of manpower that will be required after a period of 4-5 years, the question of designing programmes for providing skills to the students, which will make them suitable for the world of work

whenever they leave the formal system of learning, has to be addressed through manpower planning.

Competition, especially in the export sector, will push companies to improve quality, reduce cost and improve productivity which in turn will generate employment opportunities. For example, the software business and diamond cutting industry has transformed India in many ways and will continue to do so in the future. This approach needs to be duplicated for many other spheres of the Indian economy.

Brand (1994)⁹¹ reported that in order to remain competitive, business needs flexible workers, with good analytical and solid basic skills. New jobs, technology, and reorganised workplaces are requiring multi-skilled workers with strong language, mathematics, reasoning, problem-solving and analytical skills.

Wilson (1994)⁹² stated that in Japan and Germany, the cross-training trend, in which skilled workers are trained in both mechanical and electrical/electronic skill areas for capability in operating and maintaining robotic and computer-controlled equipment is becoming the 'norm'.

Mclean (1995)⁹³ pointed out that globalisation challenges employment and training policies because companies can shift quite rapidly their centres of production across national boundaries. This is due to perceptions of, among other factors, the cost and quality of labour. High-skill management and research and development can be located in one country and low-skill production in another.

For India, sustainability and ecological aspects should determine the educational model for skills and competence. In the rural context, the vocations are to be sought in the management of environment, water, food, energy, information, human comforts and reduction of drudgery in work (PSSCIVE,

1999)⁹⁴. The manpower preparation in services sector should find a prominent place rather than preparing manpower in industrial production processes.

In various government reports, documents and ministerial speeches, it is accepted that to compete in the global market, education must serve the economy better than it has done in the past. *Vocationalisation* of education has been unanimously accepted as an essential step for enhancing self-employment and for development of national economy. Diversification of education is the slogan of the present century. Sustainability has become an important consideration of any developmental programme. For India, sustainability and ecological aspects should determine the educational model for skills and competence. In the rural context, the vocations are to be sought in the management of environment, water, food, energy, information, human comforts and reduction of drudgery in work (PSSCIVE, 1999)⁹⁵. The manpower preparation in services sector should find a prominent place rather than preparing manpower in industrial production processes.

According to Briz, and Haider (2003)⁹⁶, the demand of the 21st century will be much different from what they were ten or fifteen years ago. Even predicting what the shape of new technologies will be in the next five or ten years is a difficult proposition and in some areas it will be impossible to make a prediction and the conventional courses are not going to meet these challenges. Salooja (2003)⁹⁷ pointed out that the present socioeconomic scenario of globalisation of economy, industrial reforms, market oriented competition, country-wide network of information technology, and universalisation of education indicate greater demand and need for skilled man power in the country.

2.14.6 Value Education Perspective

Kumar (2005)⁹⁸, observed that the spirit of '*Kartavya Palan*' and spontaneous feeling of love, care and concern for others are somehow not been emphatically included in the mainstream education and professional education. As a result, self-centred educated people, most of whom are just jobseekers with no specific job skills and no entrepreneurship spirit are being produced.

Knowledge and skills are no doubt necessary, but far more important is the spirit of commitment of duty, spirit of quality and experience, spirit of working together, spirit of co-operation, spirit of service, etc. If our vocational education courses could focus on development of positive work values, and managerial wisdom and common sense, then this can become an important contribution to nation building.

Modern education is focused on the development of Intelligent Quotient (IQ) oriented analytical left brain, but it totally ignores the development of the creative, holistic, intuitive and synthesising right brain, which can help to realise our vision for which, the limited, logical left brain has no knowledge and experience.

Professional and management qualifications are not enough in the competitive world. Managing human and capital resource requires emotional stability and a healthy worldview of reality and personal qualities like willingness to take responsibilities, produce results, solve problems of society, ability to create conditions where people strive to achieve the highest and the best. These qualities start manifesting when there is a healthy worldview of reality, strive for developing the powers of mind, acquire clarity on the aim and purpose of life, and understand the importance of quality and excellence in work. Work is not just a means for '*roti*' (food), '*kapada*' (clothing) and

'*makaan*' (shelter). It gives an opportunity to manifest our infinite potential and attain infinite joy.

Management taught in structured education system is unable to create people, environment, systems and organisational structures conducive for world-class results. How to educate and train the youth who can create the environment and systems where people willingly work together to produce the best results for the good of the others is the real question? This is the major challenge today. The present education, training and administrative system has failed to imbibe in our people the spirit of service and the urge for continuous improvement and quality in work.

A few centuries back India was having a share of 23% of the whole trade which dropped to only 5% in 1947 and now it is only 0.6%. Is this progress? Are modern management, training and education systems at fault? Where have we gone wrong? How can they help produce excellence today? (Kumar, 2005)⁹⁹

Value education can help people acquire positive work values, and attitudes develop entrepreneurial values, necessary for promoting a holistic approach towards Vocational Education and Training (VET). The Vocational Education and Training should lead to creation of products and services with a focus on quality, durability and innovativeness. The training programmes should have an in-built component of entrepreneurial values so that good workers and managers, who can not only enhance the productivity, but also promote basic values in the society, can be developed.

2.15 Problems and Challenges to Vocational Education

Change is the only thing that doesn't change. Unprecedented changes are witnessed in all walks of life. Technological advancements have virtually revolutionised the Information and Communication scenario. The world has

shrunk into a global village. Artificial intelligence has started to challenge human wits. The human skill set required today has radically changed from that of a decade ago. The main challenge to vocational education today is to develop strategies to cope with these changes.

Curriculum must be restructured to keep pace with the rapid and continuous changes in technology or situations. This leads to the need for a continuation in training process and to upgrade and update both the knowledge and skills. This need can only be met through a flexible and open system of education in terms of age, course programme, time, place and pace.

Masri (1998)¹⁰⁰ opined that the feasibility of a VET system can be addressed through the ability to secure employment, level of earnings, self and social image, job satisfaction and the degree of lateral and upward mobility at the individual level; and through productivity levels, quality standards, and national income figures on the national levels.

Kulkshrestha (2005)¹⁰¹ is of the view that for running a training programme successfully, strengthening of the training institution is necessary. The strengthening measures include financial support, recognition of various academic bodies and learner mobilisation.

According to Shah (2005)¹⁰², technical and vocational education will have to provide the following:

- Competency based modularised and preferably self-paced curricula and materials.
- Wider and more flexible array of delivery strategies, particularly those related to new delivery technologies.
- Qualified and trained teachers.

- Adequate facilities for work-experience and hands-on experience to compete with ever expanding and increasing global market.

A National Vocational Qualifications (NVQ) System is needed in India to provide competency based vocational education, training and assessment. Students should be given the choice of determining the programme by matching and mixing the modules of their choice to their professional needs. Sacheti and Mehrotra (2002)¹⁰³ proposed an alternative VET system, which can link formal and non-formal vocational education and training and would prepare manpower for working at various levels. IGNOU (Kulshrestha and Bharadwaj, 2002)¹⁰⁴ designed a Competency Based Vocational Qualifications System for trades and supervisory level manpower.

Managing technical and vocational education and training system is quite a complex job. A comprehensive management structure should be developed to ensure that the curricula meet the requirements of diversity, suitability, and cost effectiveness. At the same time, it has to ensure that the facilities are adequate and managed and maintained as required. It has to also ensure that the teaching-learning process keeps pace with changes in pedagogy, economy and manpower demands.

Adequate budget should be allocated to the VET programmes and the management should seek other means of financial support to the programmes. The managers of the institution should be competent, qualified, and committed to advance the ability, skills and competence of teachers and trainers, ensure that the delivery of services to the students and trainees is commensurate to the time, effort and money spent. The management should ensure that the teachers and trainers get the best pedagogical opportunities, and as a matter of priority,

make sure that the co-operation and coordination among the various agencies involved in providing VET programmes are given due attention.

Trade skills standardisation testing and certification is aimed at promoting the attainment of higher and uniform skill levels among workers, thereby improving their employability and ensuring uniform quality. An effective scheme must be evolved and implemented to evaluate VET institutions to ascertain the quality of training.

With the changing technology at the work place, less educated and less trainable workforce can be a drag on the development of enterprises or industries. They will have difficulties in adjusting to the changing work structure and new production technologies. Such workers should be provided with some basic adult education and training in order to remain a productive participant to the growth of the enterprise or industry.

An efficient manpower planning and training system should be capable of achieving a balance between the requirements of the economy and the output of the trained manpower from the system. In the case of skilled manpower information on the existing employment market and future manpower requirements is required for policy formulation and planning.

In fact the children at large do not need intellectual schooling but rather a consistent training for becoming industrious and conscientious worker and the objective of training should be to produce productive citizens. In Germany, vocational education and training is very successful. It compels one to explore as to what makes the dual system of VET (Grienert, 1991)¹⁰⁵ work in that country. It is important to mention here that from an early age, the Germans get proper guidance to find out the right profession or trade, which they can develop according to their own inclinations, interests and aptitudes. It gives

them personal and professional satisfaction and through their development they make useful and meaningful contribution to the society and nation. It is unfortunate that this aspect is totally missing in the vocational education system in India as observed by Shah (2002)¹⁰⁶.

Constraints in the progressive development of vocational education programme in India have been due to absence or inadequacy of the following (Adhikari, 2005)¹⁰⁷

- Data based career guidance and counselling service.
- Community/industry resource support to planning and implementation;
- Survey of community needs and local skill needs.
- Resources and expertise inventory of participating agencies;
- Dissemination strategies and infrastructure;
- Technology up-gradation;
- Competency standards for assessment and certification; and
- Project formulation framework.

Systematic dissemination activity in the context of development in information technology has become an exciting field of activity of vocational education managers. One can access the latest and most appropriate information from anywhere for developing a tailor-made Human Resource Development (HRD) programme for individuals in a community as per local needs and resources and individual career goals. The main concern is however, as to what strategies should be followed to make dissemination programme effective, given the magnitude of the problem and the constraints of the developing economy.

Here are some of the positive developments in the field of vocational training. The community polytechnics are offering about 25 career-oriented programmes to rural youths. The Technical Teachers Training Institutes (TTTI) organise training for trainers. Polytechnics and extension centres of the TTTI's can act as the Hub Centre (HC) to provide on-line data to the users through the Information Technology enabled community information centres. All development centres publish newsletters, programme brochures and product catalogues. These will be converted to electronic media and made available on their portals. The 'Gyan Bhatrati' channel of the National Door Darshan (NDD) has started broadcasting technical and vocational course materials.

It is a fact that vocational education in India and in many parts of the world is faced with a large number of problems. In India the major problems are inadequacy of resources, both human and financial, inadequacy of infrastructure facilities, inefficient management of vocational institutions and poor planning and implementation of vocational programmes. This situation needs to be changed to make sure that the Vocational Education Programme in India serves its purpose.

2.16 Conclusion

India needs vocational education to develop skilled manpower and generate employment which will lead to economic development. Vocational education is an important tool for the development of the vast reserve of the human resources of our country. At the same time the quantity and quality of vocational education in our country is not adequate. There are a number of issues in the field of vocational education in our country which need to be addressed immediately if our country has to progress and compete with the economic super powers globally.



REVIEW OF RELATED LITERATURE

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	3.2 Studies Conducted in India
	3.3 Studies Conducted Abroad
	3.4 Studies on Vocational Higher Secondary Education in Kerala
	3.5 Conclusion

3.1 Introduction

The research scholar carried out a survey of the available literature on Vocational Education with the objective of collecting maximum information about the scheme including the latest developments. Although the main focus of the literature survey was on the reports of the studies conducted on vocational education, other types of literature were also surveyed.

Vocational Education in the school education system has not been a popular research topic due to various reasons which include lack of awareness about vocational education (Buch et al., 2006)¹⁰⁸. Therefore, there are only very few agencies and institutions which are involved in sponsoring or conducting research in vocational education. The NCERT through Educational Research and Innovations Committee (ERIC) supports researches in all fields of education including vocational education. The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), which is a constituent of NCERT, conducts research in vocational education and work experience. In addition, Departments of Education of Universities, Institutes of Advance Studies in Education and others working in the field of education, conduct research in the field. At the State level, State Council of Educational Research and Training (SCERT) and

State Institute of Vocational Education (SIVE) conduct research in education. Besides, Directorate of Education sponsors/conducts research in vocational education. The Ministry of Human Resource Development, Planning Commission and Ministry of Labour sponsor external agencies to conduct research on their behalf, besides, sponsoring individual researches. The Indian Council of Social Science Research (ICSSR), Indian Council of Agriculture Research (ICAR), Indian Council of Medical Research (ICMR), National Institute of Educational Planning and Administration (NIEPA) and Institute of Applied Manpower Research (IAMR) also conduct research in the field of vocational education. Other agencies/institutions involved in research in vocational education are Centre for Educational Research Planning and Action (CERPA), Xavier's Labour Relations Institute (XLRI), TATA Institute of Social Studies, Centre for Media Studies (CMS), Joint Council of Vocational Education (JCVE), and State Council of Vocational Education (SCVE). Quite a few individual efforts have also been noticed.

At the international level quite a few international bodies, governmental organisations of various countries, voluntary organisations and private research organisations have been conducting studies on vocational education. The most important contributions come from United Nations Educational, Social and Cultural Organisation (UNESCO). Noticeable among others includes International Labour Organisation (ILO), World Trade Organisation (WTO), World Bank (WB) and Asian Development Bank (ADB).

The researcher has categorised the related studies in to three groups

- Studies conducted abroad.
- Studies conducted in India.
- Studies on Vocational Higher Secondary Education in Kerala.

3.2 Studies Conducted Abroad

Psacharopoulos (1981)¹⁰⁹ on the basis of a review of various studies conducted on the rate of return had observed that the rate of return of general education was found to be higher than that of vocational/technical/scientific education in less developed countries (LDCs). Again, if the level of development in a country or region is low, vocational or diversified education may have little relevance to development.

Haddad (1981)¹¹⁰ observed that general education has been found in many countries to increase the productivity of workers, making them more self-reliant, more adaptive to new situations and above all more trainable.

Bowles and Gintis (1976)¹¹¹ and Blaug (1984)¹¹² separately observed that while cognitive knowledge and skills are indeed important for economic development and employment, yet it is a bundle of characteristics which includes much of the traits from the affective domain. Another important observation in this context is that as societies grow more advanced, there is an increased need for technology and a flexible labour force.

Oxenham (1984)¹¹³ drawing on research in certain developing countries found that there is no neat universal explanation of what employers want from school. Noah and Eckstein (1988) on the basis of a study of Britain, France and Germany reached a similar conclusion. The demand from employers is not exactly for pre-vocational courses relating to specific occupations or families of occupations. Rather, the emphasis is on better teaching of basic communication and computation skills.

Psacharopoulos and Loxley (1985)¹¹⁴ observed that paradoxically it may seem that lower the overall level of development weaker the case for

introducing a diversified curriculum. The more developed the country the more it may be able to afford diversification.

Thongplece (1985)¹¹⁵ studied non-formal vocational education programmes in Thailand. Administrators were trained graduates with a certificate in *vocationalisation*. About fifty per cent of the instructors also had such certificates. Learners, most of whom were in the 15 to 35 age group and were women, undertook courses in agriculture, business, home economics and industry. Along with teachers and administrators, they also felt that the courses were relevant to their needs. It appears that everything went on well with *Vocationalisation* in Thailand, except that successful non-formal graduates remained unemployed.

Foster (1987)¹¹⁶ had commented that “... in the initial stage, technical or vocational instruction is the cart rather than the horse in economic growth and its development depends upon real and perceived opportunities in the economy.”

Chin-Aleong (1988)¹¹⁷ studied vocational secondary education in Trinidad and Tobago. He concluded that, in the context of a booming economy, specialised craft students found jobs more quickly and earned better salaries than academic students. Pre-employment training in schools, the role of private institutions and enterprises in delivering training, the cost efficiency of various modes of vocational education and training were related with self-employment. Poverty alleviation, productive role of demand, training in relation to equity, place of training, financing, curriculum considerations and distance learning should be based on empirical evidences for *Vocationalisation* of education.

Psacharopoulos’s research (1988)¹¹⁸, in Colombia and Tanzania showed no labour advantage of graduates from *Vocationalised* courses—neither in

terms of success in finding employment nor in pay levels when employed. Tracer study findings on this issue are rare.

Wilms (1988)¹¹⁹ reviewed empirical researches carried out in the United States from 1970 to 1985. He concluded that the outcomes of vocational education in schools did not accord with the lofty aims that this education fails to improve the student's chance of success in the labour market.

Tilak (1988)¹²⁰ had found that in low-income countries vocational education contributes negatively to economic growth. These studies suggest the necessity of a threshold level of development for vocational education to contribute significantly to development. These findings have far-reaching policy implications for less developed countries (LDC). The uniform type of educational advancement cannot offer solutions to the diversified developmental needs of various societies/states/regions. The level of development of a particular region/state/society would decide what type and content of education would be relevant to its process of development.

Kairamo (1989)¹²¹ maintains that in Europe, particularly in Belgium, France, Italy, the Netherlands and Sweden, a trend towards *Vocationalisation* of secondary education is pretty clear. The share of school-based technical and/or vocational streams in total enrolments has been increasing gradually over the past 20 years. In countries like France, Italy and the Netherlands apprenticeship has been revitalised. It has become the dominant mode of training for 16-19 year olds in West Germany. More recently "alternative training" combining school and work-based learning has developed in continental Europe.

Phitaktanakhom (1990)¹²² surveyed the socio-economic conditions and guidance services in the government secondary schools of the Nonthaburi Province of Thailand. The purpose was to study the nature of vocational

guidance services in these schools and the attitudes of the school administrators, guidance teachers, and classroom teachers towards vocational guidance services which are related to Thailand's Sixth National Education Development Plan (1987-91). For the study a sample of 13 school administrators, 46 assistant school administrators, 44 guidance teachers, and 246 class teachers from the government secondary schools of Nonthuburi Province were selected. It was found that the vocational guidance services provided in the special, large, medium and small sized schools were different. The attitudes of school administrators, assistant school administrators, guidance teachers and class teachers towards guidance services were not different.

Mishra and Sen Gupta (1991) during a study found a large number of vocational trades at the senior secondary level in many of the countries in the Asia Pacific Region (APR). Expansion of secondary education system is continuing in the region. The quality of higher education is diminishing due to excessive pressure on it. High unemployment rate among the educated (secondary to degree level) youth is a serious problem. There is a need to siphon-off sizable segment of student population to vocational stream through proper guidance. Inclusion of non-traditional technology oriented courses for girls in larger numbers and in greater variety was recommended.

Buechtemann and Christoph (1994)¹²³ carried out a synthesis of national studies on the changing role of vocational and technical education and training (VOTEC). The national studies were carried out by the Organisation for Economic Cooperation and Development (OECD). The study suggested that, despite massive and increasing amounts of public and private expenditure on education and training in highly industrialised and also in industrialising and developing countries, there is a scarcity of clear evidence balancing the costs of and returns to such investment. To a large degree, this lack of evidence of

returns to human capital is due to the very heterogeneous nature of the societal and private benefits derived from education and training and the long time periods over which the benefits accrue.

Qureshi (1996)¹²⁴ reviewed the reports of the TVET programmes and case studies of various countries in the Asia-Pacific region and noted that there is a growing awareness in countries of Asia-Pacific region for the need to adapt technical and vocational education to meet the rapidly changing requirements of the economy at the national, regional and global levels.

Tabbron and Yang (1997)¹²⁵ in a study on the trend on vocational education in developed countries observed the following. The gap between academic education and vocational education is being reduced by means of the introduction of vocational subjects into general education curriculum and closer approximation of vocation training to general education. Vocational education is being conducted more and more at the post-secondary level and the route from vocational education to higher education is widening. Competence-based curriculum development has a more important role to play. The cooperation between education authorities and employment organisations as well as industries is being strengthened. The delivery system of TVET is becoming more decentralised. Employers are becoming more involved in the process of TVET.

Basu (1997)¹²⁶ stated that despite the expansion of technical vocational education and training in nearly all Asia-Pacific countries during the past 10-15 years, many of the region's policy makers have called for greater and more effective integration of technical and vocational components in basic and general education curricula.

Singh (1998)¹²⁷ examined case studies of school enterprises in countries viz., China, India, Indonesia, Papua New Guinea, Germany, Botswana, Kenya,

Ghana, Algeria, Cuba and Costa Rica. He observed that many secondary level school-based programmes were incorporating elements from several of the following modes of organising learning and training: traditional apprenticeships, on-the-job training, and dual vocational training (combining practical training in workshops of private enterprises with training in traditional training centres). The following were among the factors identified as enhancing school enterprises: support from policy makers; institutional-level policies that balance economic, educational, and social goals; diversified financing; incentives; networks; support infrastructure; monitoring system; and high standard of training.

A review of the roles of evaluation for vocational education and training in USA and UK conducted by Grul et al. (1999)¹²⁸ has highlighted the fact that the results of these studies have not been taken seriously by the policy makers and pointed out that the results of the programme evaluative studies are often met with reservations as these necessitates policy revision.

The review above has revealed that vocational education is plagued by problems of different kinds globally. The challenges to vocational education are many. At the same time there are some serious efforts from the part of different nations and organizations to popularise vocational education which have shown some positive results.

3.3 Studies Conducted in India

Bhatt (1972)¹²⁹ critically compared the status of Vocational Education in West Germany and India. Secondary as well as primary data were used for the analysis. He discovered that the system was functioning very well in West Germany as observed through attitudes to manual labour, private support, relevance of course, production of literature, teacher training and balance

between Vocational and General Education. India was found wanting in all these respects.

Munjal (1972)¹³⁰ studied the problems of drop-outs from pre-vocational training centres in Haryana. 25% to 37% of the pupils dropped out in the three institutions under the study. He found parental indifference, improper attitudes to labour, unsustainable curriculum and unattractive trades, poverty and social maladjustment among the pupils, employment of teaching staff on temporary basis etc., as the reasons for the drop-out phenomenon in the pre-vocational training centres.

Though an understanding of the vocational needs of students is of value in planning vocational education and guidance programmes, it is observed that only one study has been completed on this topic. Reddy (1972)¹³¹ studied vocational needs in relation to the occupational choices of 3600 IX, X and XI grade students. He observed that, while social and economic statuses of students were significantly related to their vocational needs, occupational choices had significant relationship with their social status only.

Working with 75 boys and 75 girls each of VIII, IX, X and XI standards of Gujarati-medium schools of Baroda city, Parlikar (1973)¹³² discovered that intelligence and achievement in schools were associated with measures of vocational maturity. Neurosis, self-sufficiency, introversion-extroversion and dominance-submission (personality factors) showed inconsistent relationships with vocational maturity. Sex differences were observed. Vocational maturity had been defined in terms of choice competency, choice attitude and choice consistency.

Reddy (1974)¹³³ studied the role of rural-urban and Socio-Economic factors in the development of vocational sense of 1103 boys of IX, X and XI

grade. He found that agreement between choice of occupations and self concept was high among urban students. The study revealed that the occupational choices increased from lower grade to higher grade.

Sidhu (1974)¹³⁴ standardised a vocational interest inventory on 2100 successful XI class students of Punjab, taking 300 students in seven criteria groups: fine arts, agriculture, commerce, home science, humanities, medical, and non-medical courses. The purpose of standardisation was to provide a basis for diversifying students into different streams.

Mathur (1975)¹³⁵ was essentially interested in preparing a projective tool and establishing norms to predict vocational interest in the fields of medicine, engineering and teaching. He developed a tool using the free expression drawings technique among 75 trainees and 75 in-service personnel from urban Rajasthan, and prepared stanine-grade norms for each of the three vocations and for vocational interests in general.

In one of its studies in Mathura district of Uttar Pradesh, the work-experience and *Vocationalisation* Unit of the NCERT (1976)¹³⁶ identified the following courses for *Vocationalisation*: dairying, sugarcane technology, animal husbandry, inland fisheries, cooperative farming, agricultural extension, food preservation and processing, veterinary services, small-scale industrial services, nursing and midwifery, pre-school education. Many of these courses were observed to have potential for creating self-employment.

Pendharkar (1977)¹³⁷ studied the occupational aspirations of 300 Hindu under graduate students of Indore, through the case study method. He discovered that the home atmosphere is an important factor in occupational aspirations. He found that the knowledge of occupations and monetary returns from them was highly associated with the level of aspirations.

Bose and Mukherji (1978)¹³⁸ carried out a techno-economic survey of the needs for local skills in four blocks of West Bengal so as to work out guidelines for the organisation of the +2 stage of vocational education. The study highlighted the need for diversified courses and general education content in technical and vocational education.

From a similar study in another area of West Bengal, Gayen (1978)¹³⁹ identified agriculture, industries, trade and commerce, health and public services as major areas for introducing vocational and technical courses at the +2 stage.

Sali (1978)¹⁴⁰ during a study in Maharashtra found that the factors responsible for non-introduction of *Vocationalisation* as non-availability of trained, specialist teachers, inadequate physical and other infrastructure facilities, problems in marketing finished products, lack of integration of programmes with local resources and students' needs.

Gupta (1978)¹⁴¹ conducted an experimental study of the impact of vocational training on behaviour of adolescents in terms of attitudes towards work and improved work performance. Three groups of 40 IX standard male students each of a school from Kota, Rajasthan, were formed. While one of them was kept under control, the other two were treated with vocational training. One of the experimental groups was given reinforcement in addition to training. The investigator prepared the tools by himself. The results showed that, while training alone led to positive improvements, the impact was higher when reinforcement was coupled with training. However, the impact was more pronounced in the case of punctuality and completion than in the case of precision and concentration.

With a view to providing insights for *Vocationalisation* of education at all levels, Devasthalee (1978)¹⁴² examined the secondary education (standards V to X) curriculum of Maharashtra state. He emphasised the need for *Vocationalisation* from standard V, establishment of central vocational schools to serve neighbourhood schools, and vocational guidance.

Gupta (1979)¹⁴³ conducted a survey of the status of agriculture education in the secondary school of the UT of Delhi. The investigator reported that quite a few rural schools offered agriculture as a subject of study. The study revealed that every alternate teacher was not professionally qualified for the job, facilities for practical work, library and storage were very poor and only half of the successful students finally took to farming.

Vocational aspirations in the formative years of life are supposed to determine success in later life in regard to job satisfaction productivity, personality adjustment, etc. Several variables appear to fashion the nature and reality-orientation of such aspirations. Parental occupational and social background, intelligence, achievement, peer-group experiences, vocational guidance etc. are some of the variables which may influence vocational aspirations. Chadha (1979)¹⁴⁴ studied vocational aspirations of 713 rural and urban boys of Chandigarh and rural Punjab. He developed a Vocational Aspirations Blank and used other available tests. He discovered a high degree of vocational aspiration among children and parents.

Chand (1979)¹⁴⁵ studied the correlates of vocational maturity of 480 boys and girls of urban and rural high schools of Chandigarh. Apart from using other tests, he developed a Career Maturity Inventory, a Competence Test and a Vocational Aptitude Scale. Intelligence, self-concept, education, income and

occupation of parents, scholastic achievement, and certain personality factors showed significant relationships with vocational maturity.

Jain and Kurulkar (1980)¹⁴⁶ made an assessment of on-going training programmes in relation to the vocational needs of women in Anantpur district of Andhra Pradesh and Kanyakumari district of Tamil Nadu. They discovered that, though the needs of women were highly diversified and fell into nine categories, the bulk of the ongoing training programmes revolved around tailoring, embroidery and agriculture.

Patel (1980)¹⁴⁷ critically examined the organisation of vocational education in the higher secondary schools of Gujarat state. The absence of clear guidelines, lack of orientation of teachers, the blind rush to the commerce stream, absence of diversification due to inadequacy of grants, were some of the finding of the study.

Saheb (1980)¹⁴⁸ studied, in a comparative framework, the vocational interests and academic abilities of 455 boys from vocational stream and 532 boys from academic stream. Marked differences were observed between the academic abilities and vocational interests of the two streams of students. Students of the academic stream were better in academic abilities, leadership, writing and science talent, and displayed interest in physical and biological sciences. Students of the vocational stream displayed interest in business and computation. They were better in social service, music, game and sports. Choice of the stream did not depend on the socio-economic status of the students. Theoretically it has been observed that creative individuals can rely on their creative thinking skills and abilities in the career decision making process. There is place for convergent thinking too. Studies have shown that highly intelligent individuals are vocationally more mature.

A comparative study of 180 institutionalised and 540 non-institutionalised adolescents of both sexes from upper, middle and lower social strata was made by John (1981)¹⁴⁹ to understand the relation between vocational interest and self-concept as well as perceptions about the future. Kulshreshta's Vocational Interest Record and other tools were used. It was observed that vocational interests of adolescents were directly related to their socio-economic status.

Singh et al. (1981)¹⁵⁰ conducted a vocational Survey of +2 stage 1978-80 (district wise) in collaboration with Vocational Educational Unit of NCERT in *Haryana*. The main objective of the study was to identify the educational institutions where vocational courses could be started and the names of the courses which could be run in the identified institutions, keeping in view, (a) the students' strength and their vocational needs, (b) availability of physical and other facilities with minimum financial outlay, (c) absorption and utility of the trained students in the employment market, (d) recommended occupations offering reasonably good prospects of self-employment. On the basis of reports of the study in Ambala, Bhiwani, Gurgaon, Kurukshetra, Mahendragarh, Rohtak, Sirsa and Sonapat districts, 73 educational institutions of high school and higher secondary levels were identified.

In a study concerning the vocational interest of higher secondary school students, Jayapoorani (1982)¹⁵¹ found that a majority of students (84%) preferred natural sciences, mathematics and English. While boys showed interest in engineering jobs, girls preferred to work as doctors. Both boys and girls developed their vocational interests between 13-15 years of age.

Treating age, socio-economic status and marital status as intervening variables, Kakkar (1983)¹⁵² studied the impact of vocational attitudes, interests and work values on the job satisfaction of 800 women belonging to teaching,

mechanical, clerical and medical occupations in BHEL, Bhopal. In addition, the occupational aspirations of these women were compared with those of 113 higher secondary girl students in vocational streams. Age, educational level, vocational attitudes and work values turned out to have positive and significant relationships with job satisfaction. Significant differences were observed between job satisfaction as well as work attitudes and vocational interests of women in different occupations. Age and SES had a significant relation with vocational interests and occupational aspirations of girl students.

Bhatnagar (1983)¹⁵³ discovered that vocational interest was the chief factor in determining occupational choice among adolescent girls. This was pronounced among girls belonging to higher income groups. Urban and semi-urban differences were not significant. Girls displayed diversified vocational choices.

Tulsi (1983)¹⁵⁴ studied in an experimental setting, differential effects of career guidance strategies on vocational maturity patterns. 12 groups of students each with varying combinations of levels of intelligence and achievement among both sexes were used as experimental and control groups. Chand's career maturity tests were used along with other tools. The group which received treatment in both self awareness and occupational information proved better in realising vocational maturity than those who were treated with only one of these techniques. Higher vocational maturity was realised by both sexes with low and average rather than higher intelligence score.

Mowji (1983)¹⁵⁵ studied the vocational and educational problems of 1800 XI and XII standard arts, science and commerce students of Greater Bombay. Some of the problems reported by the researcher are: absence of guidance for choice of courses, lack of coordination between schools and

colleges, paucity of trained teachers, uninteresting syllabi and books, defective admissions, large classes and inadequate facilities, dissatisfaction among teachers regarding low wages and heavy work-load.

Deshmukhya (1984)¹⁵⁶ explained the secondary school curriculum in Assam in the light of needs for *Vocationalisation*. It was found to respond to local economic needs. Negative attitudes of students, teachers and parents, inadequacy of facilities, pressure of other school subjects, lack of funds, raw materials, tools and equipments were the problems faced in organising work educational activities.

Gokhale (1984)¹⁵⁷ conducted a study of *Vocationalisation* at +2 stages. The objectives of the study included appraising the status of vocational education as perceived by the students and identify the problems in instructional aspects of *Vocationalisation* of education. A sample of 40 students from 2 colleges of Nagpur city was taken. The study revealed that; the presently run vocational courses were useful as compared with general course, but failed to prepare a student for any job or self-employment venture. The government was not providing any job or financial assistance to the student passing out with vocational courses. The practical training was not sufficient. Teachers needed to be trained in all practical aspects in their respective subjects. The service conditions of teachers teaching vocational subjects were such that they kept good teachers away from these subjects. The grants provided by government were insufficient for imparting practical training.

Reddy et al. (1984)¹⁵⁸ conducted a survey of the existing *Vocationalisation* of school education in Andhra Pradesh. The objectives of the study were to study the existing syllabus and scheme of instruction being provided to high school students with reference to the *Vocationalisation*

programme. A comprehensive survey of the available infrastructural facilities in all schools of the states and the records available in the directorate of school education were examined. The major finding of the study was that nearly 50% of students dropped out at various stages between VI and X classes. The chances of introducing *Vocationalisation* were only possible from class VIII to X as congenial environment was not prevailing in the school.

Soundaravalli (1984)¹⁵⁹ did a critical study of the functioning of the vocational education in higher secondary schools in Tamilnadu. The investigator conducted the study on 1000 students of Salem district. The objectives of the study were to identify the administrative policy regarding the selection of school and vocational subjects, to assess the availability of instructional material provided in relation to the curriculum, to find out the qualifications, training and experience of teachers who were handling vocational subjects in the various higher secondary schools, to identify some of the major characteristics of students who opted for vocational subjects and to assess the degree of acceptance of the new system as revealed by the attitude of teachers and parents towards vocational education. The investigator used information blank, test battery and self developed vocational attitude scale as tools.

Researcher found that nearly 90% of schools were upgraded as higher secondary schools with academic and vocational stream in 1978. 21 vocational subjects were offered in these schools. About 90% of the schools functioned well and were able to produce 90% result in the public exams. The students were admitted in vocational stream without any aptitude tests. As a result of the introduction of vocational stream in higher secondary schools, many teachers were appointed but only 20% of them were full time teachers and 80% of them were part time teachers with a fixed remuneration of Rs.200/- per month. For

certain subjects like accountancy there was no external exams and there was no provision of practical in many vocational subjects. Co-operation of industry and factory owners was not adequate in 50% of the schools. Only 30% of the schools were fully equipped. Though the aim of introducing vocational education was to reduce unemployment and to reduce the pressure on colleges, it was not achieved. Nearly 37% of the vocational group students, teachers and the parents of vocational group students showed a favourable attitude towards vocational education.

Mishra (1985)¹⁶⁰ in Assam during a case study found non-availability of trained teachers, inadequacy of physical and other infrastructure facilities, problems in the marketing of the finished products, lack of integration of programmes with local resources and students' needs, and individual differences as the main problems faced by vocational education in the State.

Planning Commission financed (1985)¹⁶¹ a study aimed at (i) exploring the facts about organisation and functioning of *Vocationalisation* of education at the higher secondary stage in Maharashtra, Karnataka and Gujarat and (ii) to study the reaction of students, teachers and principals towards the functioning of *Vocationalisation* of education. The study revealed: (1) Karnataka had offered 31 trades, Maharashtra 24 trades, and Gujarat 21 trades. The common trades were agriculture and farm management, automobile servicing, and electrical. (2) The institutions were mostly situated in urban localities. (3) Being a part of formal institutions like higher secondary schools and colleges, the *Vocationalisation* stream did not get adequate facilities. (4) Most of the students were male. In Karnataka and Gujarat, most of them belonged to backward communities. The students of Maharashtra and Gujarat were from high and middle-class families, whereas in Karnataka most of them belonged to poor families. (5) Most of the principals had no technical education; hence they

could not pay proper attention to the functioning of the system. (6) Most of the teachers had technical education qualifications. However, because of lack of job security and low salary, highly qualified and experienced teachers could not be attracted. (7) Admission was on a merit basis and no rush for admission was noted. (8) Except in a few cases, the courses did not match the local needs of employment as perceived by the principals and teachers. (9) In spite of the declaration of flexible entry-points, Karnataka did not give recognition to the products of vocational streams for enrolment in professional courses. (10) The syllabi were very lengthy and could not be completed in time. (11) Practical experience could not be provided to the students appropriately because of lack of funds, lack of transportation and lack of cooperation from teachers.

Similarly, during a case study in Marathwada districts of Maharashtra, Dharmankar (1985)¹⁶² found a great demand for vocational and craft training in the district. The investigator after analysing the enrolment trends in ITI concluded that the successful students from the ITI found the courses very useful in getting jobs in factories, industries, motor-garages, workshops, airports etc. or in self employment. An imbalance was observed between the equipments used in the employment market and schools. The courses need to be modernised.

Advant (1985)¹⁶³ discovered intra-regional imbalances in the introduction of vocational courses at the +2 stage in the Marathwada region. There was an imbalance in the choice of courses with the larger number of colleges offering secretarial practice while need was felt for courses in animal and crop sciences, small-scale and ancillary industries, mechanical repairs, etc. Shortage of human resources (trained, skilled and experienced vocational teachers) was one of the major problems faced by institutions offering vocational courses.

Working with 400 boys and 200 girls of class XII in Eastern UP, Tomar (1985)¹⁶⁴ discovered that sex, rural-urban residence and SES were determinant factors in the occupational interests of adolescents. Occupational interests conformed to the trends in the job market.

Dabir (1986)¹⁶⁵ studied the interaction of vocational aspirations with aptitudes and motivational pattern of IX, X and XI grade boys and girls of Nagpur district. He selected a sample of 1080 students from 3 grades. He used J.S. Gewal's occupational aspiration scale. Predominant relations were discovered between vocational aspiration and SES, need achievement, need difference and need nurturance.

Mohanty (1986)¹⁶⁶ conducted a survey of vocational education in the State of Orissa since independence. The major objectives of the study were, to make a status survey of vocational education in the State from 1947-1981, to list the type of training cum activities being conducted under vocational and technical education schemes and programmes to know the views of the heads of the vocational institutions regarding the efficiency of such programme, including the follow-up activities, and to suggest ways and means for further improvement. An inventory was developed and sent to 113 vocational and technical schools. An information list was also developed. 30 heads of institutes were interviewed. It was found that very few schools imparted vocational and technical education in 1947. By the year 1971 the total number rose to 106 and it became 124 in 1981. More men were attracted towards vocational and technical education than women. Typewriting, music, dance and drama and tailoring had attracted woman. There was shortage of skilled personnel and an unemployment problem was noticed from 1961 to 1981. No follow-up programme was undertaken. The feedback between training institutions and place of work was not attained. There was no placement service available to

students. Courses in various institutions were not need based. Since the employment prospects were bleak, many students dropped out. Students coming out successful were technically unsuitable for want of adequate practical experiences.

Sharma (1987)¹⁶⁷ studied the effectiveness of the vocational exploration programme at secondary school level for *Vocationalisation* of education. The study indicated that vocational exploration programme was highly significant in attaining its objective. It was also found that both the high and low intelligence groups gained significantly.

Gogate (1987)¹⁶⁸ conducted a study of *Vocationalisation* of education at Higher Secondary stage in Andhra Pradesh, Tamil Nadu and West Bengal. The objectives of the study were; to study the relevance of vocational courses suited to the needs and aspirations of the people in these states and relevance of the courses in terms of linkage with other academic courses, method of training and evaluation; to study the criterion of selection of vocational courses and to study the selection of institutions, where the courses were located; to study the type of students and their SES, academic achievement, attitude towards vocational courses; to study the adequacy of physical and other facilities available in institutions in which vocational courses were located; to identify academic administrative and financial difficulties faced by teachers and institutions in conducting vocational courses; to study the absorption of vocationally trained students either in employment or in self-employment and to study the difficulties experienced by students either in employment or in self-employment; to assess the manpower requirement of the states during the next 10 years, the relevance of vocational courses at +2 stage and; to make recommendations for the improvement of vocational education at +2 level in the states under the study. Out of 124 schools where vocational education was

imparted, data was collected from 68 schools. Andhra Pradesh and Karnataka were the only two states in the country where +2 classes were either attached to schools or to colleges or were allowed to develop in independent junior colleges. Separate schools were not there for vocational education. Most of the schools teaching agricultural and technical subjects had collaborating arrangements with some other government institutes and this arrangement was not successful due to the lack of coordination. Government institutions were facing no financial problems whereas private institutions were suffering from lack of finance. In Andhra Pradesh, English was the only medium for vocational education which was found to be difficult by the students. Students and parents lost faith in vocational education because they found it difficult to get jobs or get admitted for further courses. NCERT after reviewing the situation in 1981 suggested some measures for improvement. State government appointed a committee to take immediate steps in the right direction.

In Tamil Nadu all the multipurpose schools were converted into higher secondary schools imparting vocational education. Vocational education was started in 950 schools in all the six vocational areas. Most of the teachers were part-time and funds were inadequate. Introduction of certain subjects in large scale at the +2 level resulted in over supply and unemployment of skilled workers. Only 10% students were employed.

West Bengal government introduced vocational education at +2 levels in 45 schools. State government did not encourage its introduction at +2 stages. West Bengal has introduced *Vocationalisation* in 3 areas only, Agriculture, Engineering and Commerce. State government did not pay any special grant for these courses. District wise surveys too were not undertaken to find out manpower needs. Students were frustrated due to unemployment. The teachers were also frustrated due to extra work. More diversified courses, based on local

needs, were needed. Para medical courses introduced in the state were discontinued. Though they were very popular, they were not recognised by the All India Pharmacy/Medical Council. Statistics showed that only around 1% students at this level could be offered vocational subject in the state of West Bengal.

Singh (1988)¹⁶⁹ made an evaluative study of *Vocationalisation* of education in Indian schools. It was a descriptive study based on an analysis of the recommendations of the various Commissions and Committees right from 1854, followed by a critical study of attempts made towards *Vocationalising* school education in India since then.

During a project work, Saxena (1988)¹⁷⁰ tried to study the pattern of vocational development in Indian students. The main aim of this investigation was to study the developmental pattern of vocational maturity measures during the secondary (grade XI and XII) school years. The investigator using descriptive survey method collected the data (350 boys and 350 girls) of grades of IX, X, XI and XII from government senior secondary schools of Delhi. The tools used were Super's original demonstration of maturity (1953, 1955) and Crites's career choice competencies and career choice attitudes (1961, 1965). The investigator found that XI grade students showed better involvement and were more oriented, aware, decisive and competent in career choice making than X grades. At grade XII, sharp increase in career choice attitude was observed. The study revealed that, students at the school leaving stage (grade XII) were showing better involvement, had more occupational information, encouraged in achieving future vocational goals and were planning steps to reach these goals. Dr. Saxena felt that creative people were highly beneficial for society and humanity at large extent. It is essential to increase our

understanding of the diverse aspects of their behaviour to make them mentally healthy, vocationally successful and fully functioning individuals.

Srivastava (1988)¹⁷¹ studied the influence of some variables - academic achievement, personality, socio-economic status - on vocational development. The study concluded that vocational development was related to academic achievement and socio-economic status but was not related to sex and different levels of education.

Gautam (1988)¹⁷² investigated the educational and vocational interests of students at the delta stages - Classes VIII and X. Significant correlation was found in the preference orders of boys of Classes VIII and X in both educational and vocational interest areas. No significant correlation was found in the case of girls, especially in the educational interest area, while in vocational interest area significant correlation was noted. Significant differences were found between the scores of boys and girls in all the areas of educational and vocational interests. However, significant correlation was noted in the preference orders of urban and rural students of Class VIII in both the areas of interest which shows that their interest preferences were similar.

A study of risk-taking, self-esteem and family status in relation to vocational interests was done by Makhiza (1988)¹⁷³. He found that risk-taking and vocational interests were significantly related. Risk-taking was found to be significantly and positively related to literary interests, scientific interest, executive interest and outside interest but negatively related to agriculture, constructive, commercial, persuasive, social and household interests. Self-esteem was positively related to social jobs and negatively related to constructive and agricultural jobs. Further, a study of vocational interests of males showed that they were high in executive, social and scientific jobs; there

was moderate interest in persuasive, artistic and literary jobs and low interest in commercial, agricultural, household and constructive jobs. Family status was found to be a significant determinant of artistic and agricultural interests.

Sodhi (1988)¹⁷⁴ made a study of the vocational interests and occupational choices of adolescent girls. Taking a stratified random sample of 1,015 adolescent girls of Class X, the study found that very few adolescent girls were able to make correct occupational choices in accordance with their vocational interests. It was also observed that occupational choices and vocational interests were comparatively more congruent for girls of urban background and those belonging to the high-income group as against their counterparts from semi-urban areas and the low-income group.

Arora (1988)¹⁷⁵ developed an interview schedule as part of a pilot study to assess the educational and vocational aspirations of students of Class XII. The interview schedule was used by many researchers.

Studying the economic parameters and interests of vocational-stream students, Pattinthsar (1989)¹⁷⁶ found that the parents of the vocational-stream students marginally differed in their level of income and expenditure. The study also concluded that occupation, income and expenditure are the determining factors of a student's vocational interest.

Majumdar (1989) conducted a study of academic motivation in Calcutta. It was found that vocational aspiration and academic performance are highly and positively related. Vocational aspiration affects motivation. There is high significant effect of the sex difference on academic motivation together with the main effect of vocational aspiration and interaction between sex and vocational aspirations on the academic motivation.

Bhatnagar and Gulati (1989)¹⁷⁷ tried to investigate the nature and development of vocational behaviour of creative adolescents in Indian conditions in comparison to various reference groups of less creative adolescents in our country. The study suggested that, the reorganisation of higher secondary education and especially its *Vocationalisation* was very essential.

Mehta et al. (1989)¹⁷⁸ conducted a field study of an exploratory nature to find out the vocational planning among the tribal first-generation learners (FGL) of Meghalaya. From a judgment sample of 9 schools in and around Shillong (Meghalaya), a sample of 257 tribal students of Class IX was taken, of which 77 were first-generation learners (FGL) and 180 were non-first generation learners (NFGL). Data were collected through the group administration of a questionnaire entitled the 'Vocational Planning Questionnaire'. The tribal FGLs were found to differ on a number of family and environmental factors but did not differ too much on most of the vocational planning variables from the NFGLs despite many obvious drawbacks.

In another study, Mehta et al. (1989)¹⁷⁹ studied the educational and vocational planning and also the home background, and psychological and academic achievement of tribal high school students of Meghalaya. The major objective of the study was to acquire information about these characteristics of the tribal students. Another objective was to understand the role of these characteristics in the educational and vocational development of high school students in the north-eastern state of Meghalaya, to validate certain aspects of theories of vocational development propounded in the USA in a very different socio-economic and cultural context. The comparative approach was adopted in this study, in which different groups of tribal and non-tribal students were compared on the independent variables. Data were collected through a number

of tools, techniques, questionnaires. Parametric and non-parametric techniques were used to analyse the data. The findings of the study have provided information about the various characteristics of the tribal students of Meghalaya. Also, the theoretical assumptions about the importance of certain psychological and environmental variables in educational and vocational development of individuals have been confirmed in cultural and socioeconomic context quite different from the context in which they originated viz., USA.

Gaikwad (1989)¹⁸⁰ conducted an investigation purported to study factors that affect Class X students' decision making abilities related to educational and vocational career, and the effect of vocational guidance on these abilities. The findings revealed that the students who were above average in intelligence showed definiteness and those who were below average in intelligence were not certain about further course of study. Also those with higher intelligence had more occupational information as compared to those with lower intelligence who had less occupational information. The study showed that psychological testing, occupational information and group guidance programme certainly help the students in making appropriate educational and vocational choices.

Mehta and Gupta (1990)¹⁸¹ tried to find the answer of "vocationally who is better informed?" The study revealed that majority of the students were lacking in adequate and correct information about the occupations they expected to enter. The study also indicated that girls required information and encouragement to take up new vocational avenues in non-traditional fields.

Gupta (1990)¹⁸² investigated the implementation of the vocational education programme in the schools of the UT of Delhi. The researcher also tried to find out the problems associated with it. It was found that vocational students came from all sections of the society. Most of these students joined the

courses as they did not get admission elsewhere. He concluded that the management of vocational schools was weak. The courses were not need-based and linkages were yet to be established.

Emmanuel (1990)¹⁸³ studied some major problems of implementing the *Vocationalisation* programme in Andhra Pradesh. The study revealed inadequacies in the system. There is a felt need for vocational courses in the state. There was neither a proper management structure to implement the scheme nor regular teaching personal. There was lack of necessary infrastructural facilities in the vocational institutions.

Sen Gupta and Dhote (1990)¹⁸⁴ studied the implementation of the centrally sponsored scheme (CSS) on *Vocationalisation* of secondary education in Himachal Pradesh. The study found that there was no release of funds in time. No effective collaborative arrangements were in existence. Absence of instructional materials and text books created huddles in the implementation of the scheme. No On the Job Training facility for vocational teachers was in existence.

Vaid and Sen Gupta (1990)¹⁸⁵ studied the implementation of the CSS on *Vocationalisation* of secondary education in Goa. The study found that 11.2% of all the higher secondary students had been diverted to the vocational stream. No systematic vocational survey was conducted in Goa. About 60% of the heads of the institutions felt that the practical training to students was inadequate. About 74% students and teachers reported inadequate instructional materials and equipment. 76% teachers had not undergone any specialised training in vocational education. The students who had joined the vocational courses obtained second division (56%) and another 11% first division in high school. Vocational guidance was not provided to students.

Verma (1990)¹⁸⁶ during a quick appraisal study in Delhi found that in 107 schools, 21 courses were introduced with 5200 students (40% boys and 60% girls). In the qualifying examination 26.12% of the students included in the study obtained the first division, 53.3% the second division and 20.39% the third division. Majority of students were from other castes while 12% belonged to SC/ST. The study revealed certain weak points. Only part-time teachers were employed, no vocational survey was conducted. Inadequate vocational guidance was reported. The study also revealed the dearth of instructional material, on-the-job training and collaboration arrangements. There was a great demand for sponsored courses.

Mishra and Verma (1990)¹⁸⁷ made a quick appraisal study of *Vocationalisation* in Uttar Pradesh. It was found that the management system as suggested by CSS had not been fully implemented at various levels. The district vocational surveys for identification of courses and institutions were not completed. There was lack of text books, teachers' guides, practical manuals and other instructional material for almost all the vocational courses. Full time teachers were not appointed. The in-service teacher training programmes organised were grossly inadequate. Work sheds were constructed in 197, out of 200 institutions. Majority of the institutions had shortage of furniture and library books. No provision was made for raw materials and other contingencies.

Raizada and Sacheti (1990)¹⁸⁸ during a quick appraisal study of CSS of *Vocationalisation* of secondary education in Gujarat, observed shortcomings and draw backs in the implementation of the schemes. The findings of the study highlighted the inadequacy related to management structure, selection of courses and institutions, curriculum design, instructional materials, collaborative arrangements and utilisation of available funds.

Sacheti and Raizada (1990)¹⁸⁹ conducted a quick appraisal of the implementation of the CSS in the state of Rajasthan. The study covered 11% of the higher secondary schools offering vocational courses. The study revealed that, these courses were mostly found in government run schools. The post of vice principal had been filled through promotion, based on seniority from the general stream. Most of the teachers were graduates or post graduates in the concerned vocational areas. About 68% students reported non-availability of workshops, laboratories and libraries for vocational courses. Only 6.42% vocational students obtained first division, 41.79% second division and the remaining the third division in the qualifying public examination. The parents of 36.39% vocational students were found to be government servants, 27.22% were engaged in agriculture and related occupation and 20.14% were doing business. Majority of the students (88.17%) belonged to the general category. After the course, only isolated cases of gainful employment were reported by teachers. Majority of the first batch students had joined general first degree courses.

Javed (1990)¹⁹⁰ during a critical study of the vocational interest of the students of arts, science and commerce found that the rural students were not interested in vocations based on agriculture. Rural students were more interested in science based vocations. Students of arts and commerce expressed high interest in persuasive and executive vocations. Students of all the three faculties showed low and little interest in social vocations. The rural students were highly interested in white collar jobs against vocations requiring physical labour in which they were the least interested.

Singh and Sengar (1990)¹⁹¹ found that Class VIII rural subjects' vocational experiences were influenced by self-concept and socio-economic status. This negative self- concept would lower vocational aspirations.

Choudhury (1990)¹⁹² conducted a study to find out the vocational aspirations, occupational choices and academic choices of students. The sample consisted of 196 Class IX students in the city of Pune. Using the descriptive survey method it was found that 40% of the total sample wanted to become doctors or engineers. The majority of the students preferred the science stream for continuing their studies and future career. The study did not find any relationship between the occupation of the fathers and the occupational choices of the students.

Kaur (1990)¹⁹³ studied the educational and vocational aspirations of students belonging to different socio-economic locales of Jammu Division. It was found that both educational and vocational aspirations are influenced by sex, SES, and locality when taken independently. Urban students differed significantly from their rural counterparts in their educational preferences and vocational aspirations. While rural students were found to aspire for high academic degree/degree in arts, the urban students aspired for high professional degrees/degree in science.

Sharma and Dhundup (1990)¹⁹⁴ studied the sex difference in educational and vocational aspirations of Tibetan students. The study found no significant sex differences in the educational aspirations of the students. However, sex differences became prominent in case of their vocational aspirations. Tibetan boys had a greater range of vocational choice and were more ambitious vocationally as compared to girls. The boys preferred challenging, prestigious, well-paid, creative and adventurous jobs whereas girls preferred clean jobs characterised by routine work, security, quiet and non-competitive type of vocations.

Mohan and Gupta (1990)¹⁹⁵ studied vocational students' career behaviour and their adjustment in courses at the +2 stage. Covering a total sample of 198 boys and 208 girls from the vocational stream and 166 boys and girls from the academic stream, the study's findings did not by and large differentiate between academic and vocational groups on personal characteristics. Girls in the vocational stream showed a greater sense of satisfaction with availability of vocational curricula in comparison to girls in the academic stream. While girls in the vocational stream showed a rise in career maturity, boys showed a decline. Girls also developed more positive attitude towards these courses. Low-SES boys identified more with their vocational courses than middle-SES vocational boys. Low-SES in the vocational stream girls found a sense of security while middle-SES girls looked for 'adventure' in these courses. A significant finding of the study related to the recommendation of the boys for introducing vocational courses at the secondary, stage rather than the senior secondary stage.

Mishra (1990)¹⁹⁶ investigated the relationship between vocational interests and SES. His study also aimed to find out the effect of sex and residence on vocational interests. The sample consisted of 200 students - 100 urban and 100 rural. SES was found to be positively related with administrative and scientific interests and negatively related with agriculture and social service areas of interest.

Saraswat and Gaur (1990)¹⁹⁷ conducted a study on the impact of the Diploma Course in Educational and Vocational Guidance conducted by the NCERT. The data were collected from the local schools as well as non-local government educational departments such as SCERTs/SIEs/SBEVGS and the school guidance units. Information was collected through the questionnaire and interview methods.

Akhilesh (1991)¹⁹⁸ conducted a study aimed at generating a comprehensive database of vocational patterns of young urban adolescents, a database that could be useful for school counsellors and vocational guidance experts. The influence of the adolescent's age, socio-economic status (SES) and gender on his or her vocational patterns was examined through a survey conducted on a sample of two hundred and forty adolescents, who were asked to rate one hundred and seventy six occupations. Differences were seen in the vocational choice patterns of the sample as a function of SES and gender but not for the age factor.

Sen Gupta and Raizada (1991)¹⁹⁹ made an on-the-spot study of vocational education in the state of Karnataka. The study succinctly brought out the strengths and weaknesses of implementation in the state. Based on these the study, they made specific recommendations for applying timely correctives by the State.

Dhote (1991)²⁰⁰ conducted an on the spot study on implementation of *Vocationalisation* in the state of Maharashtra. The sample included 25 institutions, 19 heads on institutions, 13 teachers and 759 students. The study found the major lacunae in the implementation of the scheme. Major problems were identified. There was lack of suitable instructional materials, inadequacy of on-the-job training and non-recognition of vocational courses for employment.

Bhatnager (1991)²⁰¹ investigated the role of industries in the promotion of vocational education among the rural women in Haryana. It was found that, more and more girls were keen to learn modern trades. Some of the major hurdles in the way of developing vocational education and employment opportunity of women in rural areas were identified. The study suggested that

the provision of an adequate and systematic training facility, text books and scholarships should be made. Faulty human resource development policy is a major hurdle in the promotion of vocational education among girls in the state.

Sungoh (1991)²⁰² during a study of the vocational education programme in the east Khasi hills found no significant difference between the attitude of male and female, commerce and science students, rural and urban pre-university students towards *Vocationalisation* of education. The study concluded that, the students in general, appeared to be in favour of *Vocationalisation* of education.

Sharma et al. (1991)²⁰³ conducted a study to explore differences in the vocational interests of students of socio-economically advantaged and non-advantaged students of secondary schools of Rajasthan. For collection of data, standardised tools were selected and administered on a sample of 142 students. The findings revealed differences between the vocational interests of the two groups.

Bhargava (1991)²⁰⁴ studied the interests of the students studying in the vocational education stream in Rajasthan and identified the difficulties faced by them. The study found that the majority of the students were interested in vocational education mainly because of its employment-preparatory nature. Some major short comings found during the study were, lack of physical facilities, non-availability of trained teachers and non-release of funds in time.

Mishra (1991)²⁰⁵ reviewed the studies done to identify problems in the implementation of *Vocationalisation* of higher secondary education. He found that only 8 states have developed instructional materials and whatever is developed is much smaller in number than needed. A general paucity of print

materials and the difficulties were experienced by the students. There is a need of systematic research efforts at the national, state and institutional levels.

Saraswathi (1992)²⁰⁶ undertook a study to investigate the problem: “Are the various dimensions of the personality of school students related to their vocational interests?” Taking a sample of 400 students, the study concluded that personality dimensions and vocational interests of Tenth Standard students were not related.

Saini (1992)²⁰⁷ studied the impact of entrepreneurship training on business performance of entrepreneurs. The findings of the study revealed that trained entrepreneurs in comparison to untrained ones had a significantly higher rate of growth in employment generation and sales turnover.

Dhote and Ray (1992)²⁰⁸ conducted an on the spot study of the implementation of *Vocationalisation* of education programme in Andhra Pradesh. The study revealed that the CSS suffered from many deficiencies at the state level, VIZ, delay in creation of management structure at different levels, lack of monitoring and inadequate linkages, lack of modification in the recruitment rules, non-recognition of vocational courses for employment etc. The study identified the presence of some committed teachers, innovative practices and dynamic heads of institutions as the silver linings in the process of implementation.

Joshi (1992)²⁰⁹ conducted a study on the vocational students after passing the +2 vocational examinations in Rajasthan. The study revealed that, out of the 72 vocational pass outs only 12.8% were self employed, 12.8% obtained wage employment, 7.2% were in vocations other than those they had studied, 15.4% were unemployed and 51.6% had opted for higher education. No student could get a loan from any agency. A large number of students found

the theory portion of vocational curriculum very difficult. Their practical training was inadequate due to lack of tools, equipments and material. Even those students getting jobs remained dissatisfied because of inadequate salaries, lack of desired competencies and in security of jobs.

Bhattacharya (1992)²¹⁰ investigated the problems of students to meet the challenges of rapidly changing technological milieu. On the basis of an analysis of the requirement and benefit zones of the four interactive teaching learning models using cybernetic modelling, it was concluded that an electric approach to the design and development of an interactive teaching-training model using compensations of items under the four models, lead to the development of all such abilities as are required by the world of work.

Biswal (1992)²¹¹ conducted an evaluative study of vocational education in Himachal Pradesh. The research revealed that, there is an increasing trend of enrolment in the vocational stream from 1988-1989 to 1990-1991. The scheme was found to be deficient in terms of infrastructure, teaching and non-teaching staff, finances, proper management system supervision, development of need-based curriculum, publicity, linkage between SUPW activities and vocational courses, co-ordination and co-operation among various departments, adequate collaboration between schools and employment markets, on the job training, placement and proper text books. The investigator found that, there was lack of adequate knowledge and understanding of the scheme at various levels. There were no training facilities for vocational teachers.

PSSCIVE, after its establishment, organised five national seminars/meetings to find out area-wise status of vocational education programme, to highlight prospects and to identify emerging vocations. Establishment of need-based service centres for vocational courses relating to

maintenance, repair, fabrication and services was one of the important recommendations of the seminar (Verma 1993)²¹².

Mattoo (1994)²¹³ tried to investigate the vocational interest adjustments, problems and scholastic achievements of high and low creative student groups. He conducted a diagnostic study. The sample included 100 students of Xth grade from high and higher secondary schools of Anantnag district of Kashmir in the age group of 16-17 years. The study revealed that, sex had no role to play in determining the achievement status of creative subjects. Dominant vocational interest and adjustment areas for high creative groups were found to be different in comparison to low creative groups.

In an independent study in agriculture and allied area, Sacheti (1994)²¹⁴ recommended the introduction of agri-business, agro-forestry, integrated water management, marine fish technology, plant propagation and nursery management and dairy technology courses at +2 stage of education. He also recommended that pre-service training should be arranged and made compulsory for all those who become vocational teachers for the first time and that curriculum for apprenticeship training for each course be developed at the national level.

Guru (1994)²¹⁵ suggested a number of additional vocational courses in the area of diagnostic services, therapeutic services, biomedical services and community related services. With regard to teachers who would teach paramedical courses, it was recommended that exposure in teaching technology may be given to all the professional staff. It was also suggested that school and hospital/medical-college should work in close collaboration for effective implementation and if necessary, memorandum of understanding may be signed between the two establishments for use of various facilities. Another significant

recommendation was regarding the nature of certificates to be issued by the board of secondary education. Experts suggested that certificates should indicate the name of the course as well as the name of collaborating institution where practical training was held

Government of Tamil Nadu (1994)²¹⁶ constituted a high level committee on vocational education to suggest ways and means to make the vocational education programme effective. The committee found that the total number of vocational students is generally increasing year after year but the number of vocational students as a percentage of total higher secondary students has been decreasing. The percentage of diversion of students to vocational courses during the 1993-94 was 17. The Committee also found that there was no separate administrative structure at any level to concentrate on this important aspect of education. It was of the view that there is a need of a separate management structure in view of the lack of supervision and guidance, lack of updated curriculum and modern vocational courses, lack of instructional materials, lack of attention to problems of students and teachers and lack of effort at creating positive attitudes towards work and employment. The committee also gave recommendations to improve every aspect of vocational education.

Saxena (1995)²¹⁷ recommended the economic empowerment of women through and the introduction of non-traditional courses in Girls Higher Secondary Schools in the area of Home Science. Some of the other recommendations were the need to promote equal access to disabled girls and those of SC/ST groups and sensitisation of teachers and employers towards equity groups

According to the annual report of the Ministry of HRD (1996-97)²¹⁸, the main weaknesses witnessed in the implementation of the VHSE programme,

had been a general preference in society for formal education and a corresponding disparagement of vocational education, low priority accorded by States/UTs, lack of micro level attention, non-availability of trained teachers and text book, inadequate linkage with industries and limited avenues for vertical mobility. During the eight years of implementation of the vocational education programme, several review meetings with State Governments/UTs had been conducted. In April, 1997 a review meeting was conducted with the education secretaries of all States/UTs to bring to their notice the above weaknesses and discuss strategies for the implementation of the vocational education programme during the 9th plan.

Vaid (1997)²¹⁹ observed that the National Meeting on Status and Prospects of VEP in the area of Business and Commerce had suggested that for improving linkages with industry, the Government should provide some incentive in the form of tax benefits to the industry. Introduction of degree level business and commerce-based courses was another significant recommendation of the meeting. Local needs and the interest of students determined through the use of relevant tools should be considered important for admission into vocational courses. Introduction of pre-service vocational teacher preparation programme and development of entrepreneurial skills in vocational students were other recommendations

Sacheti et al. (1997)²²⁰ observed that there is no system through which either the training acquired through informal system or experience gained by working at the place of work could be recognised. A mechanism for assessment of prior learning, accreditation of work experience and certification standards is lacking in our country. The formal linkage and the interdependence between the informal training system and education is a major concern as millions working with their hands are looking for respect in the society.

Government of Himachal Pradesh (1998)²²¹ conducted a study to evaluate the implementation of the CSS. The study covered 22 institutions out of 24 and interviewed 1158 students of Classes XI and XII. The study also covered students of the six courses in different proportions. The study revealed that enrolment is steadily increasing. Computer and electronics courses attract largest number of students as compared to other courses. The study also revealed that the staffs for teaching vocational courses are adequate in number, but, the numbers of equipment were not sufficient and their repair and maintenance was a problem. On the question of suitability of locations of vocational courses, 90.93% students were in favour of continuing the vocational courses in schools instead of industrial training institutes. One of the significant findings of the study was that wards/relatives of 54.5% representatives of the local bodies contacted, had studied vocational courses. They revealed that 25% students have either got the jobs or have gone for self-employment. Another 25% are pursuing further studies. The evaluator recommended that the vocational unit in every school should be strengthened by starting more courses in each school. The courses however should be introduced only after ensuring that the required equipments are available in the school. The intake capacity of each course should be increased to make better utilisation of the available teachers. Another significant recommendation was related to arranging pre-service programme for fresh teachers, training programmes and periodic refresher courses for in-service teachers and package programmes for part-time teachers. The study also recommended that new courses should be offered only after prior assessment of locally available job opportunities.

CERPA (1999)²²² conducted a study of the VEP, covering five districts: Agra (UP), Jind (Haryana), Sehore (MP), Mysore (Karnataka) and Delhi to suggest modifications in the CSS. The respondents of the study included

officials from MHRD, PSSCIVE, Directorate of Education of the five States and the principals, teachers and students from 15 schools offering vocational courses. It was reported that there is a need for short modular courses and the responsibility of providing relevant vocational education to weaker sections of the society cannot be transferred to the market. For the purpose of funding, it was observed that MHRD could approach the World Bank or Asian Development Bank for taking international fund. In that case, it would require a complete new approach to be followed as has been done in technical institutions in the country. The study concluded that emphasis should be given on the consolidation and restructuring of courses.

Government of Punjab (1999)²²³ conducted a study on the implementation of Vocational Education Programme. The study reported that the state introduced courses in six major areas. An analysis of the data indicated that 40% of the total schools where vocational courses were introduced were in towns and cities. One third of schools, where agriculture-related courses were introduced were also in towns/cities. *Vocationalisation* in schools meant for girls is both patchy and ad-hoc. Besides, distribution of courses appeared to be random as well as uneven. While engineering-related courses received some attention, most others were left out. Amongst the vital omissions were courses in the field of commerce, home science and health-related activities. Agriculture too was poorly represented. In the case of engineering-related courses, shortage of equipment was widespread. In some schools where equipment was available there were no teachers.

According to a study conducted by Hazarika (2005)²²⁴ on the status and implementation of Vocational Education and training in Assam, the problems are lack of awareness, lack of opportunities for vertical mobility, financial

constraints to start self-employment, lack of career guidance, lack of entrepreneurship training and inadequate apprenticeship training.

3.4 Studies on Vocational Higher Secondary Education in Kerala

Studies on Vocational Higher Secondary Education in Kerala are very few. The researcher could identify only four studies on the scheme of VHSE in Kerala; the first one in 1992, the second in 1996 and the third in 1999 and the fourth in 2002.

Sacheti, Raisada and Verma (1992)²²⁵ conducted an on the spot study of the implementation of *Vocationalisation* in Kerala. The study revealed that the management structure was created as per CSS. The course design was *bifocal* which give a choice to the students to study either the vocational subjects only and go for employment or to study the optional subjects also and pursue higher academic or professional education. Majority of the vocational teachers were fresh graduates or post graduates having no practical experiences. Out of the vocational entrants 16.4% had obtained first division, 28.9% second, and the remaining third division or pass class in the qualifying public exams. A vast majority of the vocational students failed in English, Mathematics, Physics and Chemistry. The course design was found to be the most important bottleneck in the overall implementation of the scheme. The researcher suggested more practical training and better qualified and trained teachers for vocational subjects.

The second study titled ‘Analysis of Implementation of Vocational Education Programme in Maharashtra, Kerala, Uttar Pradesh and Chandigarh’ (ORG, 1996)²²⁶ revealed that the *Vocationalisation* of secondary education had not been able to achieve the objectives set for it. The study observed that poor management, lack of vocational surveys, non-availability of competent faculty

and instructional material, poor infrastructure facilities, lack of school-industry linkage and limited teacher preparation facilities as the major problems faced by the scheme. Inadequate OJT (On the Job Training), apprenticeship training, lack of vertical mobility, lack of employment opportunities, guidance and counselling and lack of proper monitoring mechanism were also serious problems. The study also found that the general impression is that the vocational courses are opted by socioeconomically and academically inferior student population.

The third one came from Kremer (2000)²²⁷ of the institute of Agricultural Policy Market Research, Economic Sociology of the University of Bonn, Department of Economic Sociology in 1999. In the study titled “Vocational Higher Secondary Education (VHSE) in Kerala, India: An Attempt to Prepare the Educated Youth for the World of Labour”, he concluded that the main programme objective of preparing young educated people for employment could not be achieved. He observed that the VHSE in Kerala was mainly regarded as a transitional stage to the higher education which was quite contrary to the programme objective. In his suggestions he stressed the need for preparing students for self-employment by modifying the programme. He advocated the transformation of VHSE into Production Cum Training Centres (PTC) and non-formalisation of VHSE by liberalising the admission criteria. He insisted that students who fail in the SSLC examination, especially SC and ST students and those with right motivation should be given admission to VHSE. He also insisted that those who consider the programme mainly as a transformation stage should be directed to the academic stream at the +2 stage because for them the increased job and practical orientation at the expense of lower academic achievements would have serious consequences of terminating the students’ formal academic career with their decision to join VHSE.

The other study was conducted by the Planning Board of the Govt. of Kerala in 2002²²⁸. The study found that most of the courses did not lead to jobs. The study also revealed that though the scheme envisaged revision of curriculum and syllabus at least once in five years no revision had been done so far and modernisation of labour/workshop facilities had been pushed to low priority. The study pointed out that the concept of in-plant training in work places did not materialise and teachers were appointed on provisional basis in government schools. Non-availability of textbook for students, guide books and training manuals for the vocational instructors and lack of training to teachers were the major problems according to the study findings. The study also identified that the certification of equivalence of vocational courses with qualifications prescribed for various jobs in government and non-government sectors had not been made. The study concluded that the courses were offered in places without consideration of demand, local needs and suitability and the demand for vocational education as such was low in the state.

It is evident from the above review that the Vocational Education Programmes in general and Vocational Higher Secondary Education in particular have not been able to achieve its objectives in India. The scheme is faced with a lot of problems. In Kerala also the situation is not different, but improvements can be made. One of the requirements for that is to continuously monitor and evaluate the programme and take corrective measures. Studies like this are small steps towards that goal.

3.5 Conclusion

Each of the study reviewed above probed into several other aspects of implementation, namely, institutional case studies, curriculum design, instructional material, teaching methodology, infrastructural facilities,

evaluation, guidance and counselling, publicity and popularisation, placement, self employment support and finances. Each study presented a set of functional recommendations directed towards qualitative improvement in the programme implementation. The general impression that one gets from the above review is that vocational education is faced with different challenges in different parts of the world. At the same time there are some countries like Germany where vocational education is very effective. There is no doubt that vocational education is the future of education and need to be popularised with effective management and implementation.



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4.1 Introduction

This chapter presents the methodology, design, sampling procedure for the study, description of tools and statistical techniques employed for conducting the present study.

“Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them” (Kothari, 2007).²²⁹

This study is a status study of the students, pass outs and training components of the Vocational Higher Secondary Education in Kerala.

4.2 Type of Research

Research is a search for knowledge employing scientific procedures. D. Slesinger and M. Stephenson in the Encyclopaedia of Social Sciences (1930)²³⁰ defined research as “the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in the construction of theory or in the practice of an art.” The main aim of research is to find out truth which is hidden and which has not been recovered as yet.

The type of research employed in this study is *Diagnostic cum Descriptive*. Descriptive research includes surveys and fact finding enquiries of different kinds. The major purpose of descriptive research is the description of the state of affairs as it exists at present. Diagnostic research tries to study the frequency with which something occurs or its association with something else.

4.3 Methods

Research methods may be understood as all those methods that are used for conduction of research. This refers to the behaviours and instruments used in selecting and constructing research techniques. This particular research incorporates both library research and field research. Therefore the methods used are

- analysis of records and documents
- structured questionnaire

4.4 Research Design

Research design is a means of adopting that type of technique of social research which is most suitable for the research and study of the problem. “A research design is the arrangement of conditions for collection and analysis of

data in a manner that aims to combine relevance to the research purpose with economy in procedure” (Selltiz 1962).²³¹ Russel Ackoff (1961)²³² has defined it as “The process of making decisions before a situation arises in which the decisions have to be carried out. It is a process of deliberate anticipations directed towards bringing an unexpected situation under control.”

This research uses diagnostic/descriptive research design. Studies concerning whether variables are associated are examples of diagnostic research studies. Studies concerned with specific prediction with the narration of fact and characteristics concerning individual, group or situation are examples of descriptive research. Most of the social research comes under this category.

4.5 Population

The population includes all the Vocational Higher Secondary Schools in Kerala and the students, pass outs, vocational teachers and principals of these schools.

4.6 Sample

The researcher used *Multi Stage Sampling Technique* to select the samples. “Multistage sampling is used in large surveys for a more comprehensive investigation. The researcher may have to use two, three or four stage sampling” (Koul, 1984)²³³. When the total geographical area of interest of the study happens to be a big one, the total area is divided into a number of smaller non-overlapping areas called geographical clusters and a few numbers of these clusters are selected and these clusters are again divided into smaller clusters and this process continues until the desired cluster sizes are obtained. Finally units are selected from the clusters selected in the last stage to form the sample. At each stage any one of the suitable methods can be used for selecting the clusters or samples, although, random sampling is the most commonly used.

In the present study it was kept in mind that the sample should be representative. The sampling design was formulated to take care of this. The principle of randomness was used wherever possible. The choice of the researcher had no role in the selection of the sample.

The permission of the Director of Vocational Higher Secondary Education (VHSE) was sought. This was necessary to get the sanction and co-operation of the school authorities for the collection of primary data and also for getting documents and records related to Vocational Higher Secondary Education from the VHSE directorate. The Director and other top personnel at the VHSE directorate and Assistant Directors at different regional offices were personally contacted and their valuable suggestions and opinions were collected.

VHSE in Kerala offers 42 different trades divided into four groups under nine different faculties. Vast differences are seen in the number and distribution of schools offering these 42 trades across the different geographical areas of Kerala. So practically it was not feasible to include all these 42 courses in the sample for this study. So it was decided to select the three most popular trades (courses), namely, Maintenance and Repairs of Radio and Television (MRT), Medical Laboratory Technology (MLT) and Accounting and Auditing (AAG) belonging to the Engineering (I Group), Paramedical (II Group) and Business and Commerce (IV Group) faculties respectively.

At the first stage three districts of Kerala were selected for the study. To give a geographical balance to the sample, the fourteen districts of Kerala were grouped into Southern, Central and Northern regions. The Southern region included Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha and Kottayam districts. The Central region included Idukki, Ernakulam, Thrissur,

and Palakkad districts. The northern region included Malappuram, Kozhikkode, Wayanad, Kannur and Kazaragode districts. The grouping was done based on the geographical positions of the districts from south to north. One district was randomly selected from each region. Thus, Kollam was selected from the southern region to represent the southern part of Kerala, Thrissur was selected from the Central region to represent the middle part of Kerala and Kozhikkode was selected from the Northern to represent the northern part of Kerala. It was decided to select 39 schools (10% of the total number of VHS schools in Kerala) for the study. The number of schools selected from each district was proportional to the total number of schools in that district. Thus 18 schools were selected from Kollam district, 12 from Thrissur district and 9 from Kozhikkode district. For selecting the schools random sampling was used.

4.7 Sample Design

The number of schools selected is 39. Out of the 39 schools selected, 30 schools offered only one of the three courses mentioned above and samples of students, pass outs, and teachers were drawn from this course. The remaining nine schools offered two courses and one course was randomly selected from these schools for drawing samples of students, pass outs and teachers. For selecting students, one batch of the selected course was randomly selected from each of the 39 schools and all the students of that batch were included in the sample. A total of 955 responses were obtained and after scrutiny and editing, 936 complete responses were selected and the sample size of the students is 936. For selecting pass outs, a total of 500 pass outs of the selected courses for the period from 2003-2004 to 2007-2008 were randomly selected from the 39 schools and questionnaires were mailed to them. 426 responses were received and from these, after scrutiny and editing, 396 complete responses were selected and the sample size of the pass outs is 396. Sample size for teachers is

39. One vocational teacher of the concerned course was randomly selected from each school. Finally, all the principals of the 39 schools were selected and the sample size of the principals is 39.

4.8 Tools

The researcher surveyed the existing tools to find out suitable ones for the present study. Standard questionnaires and schedules used by various investigators were examined but none of them were fully suitable for the present study. So the researcher himself developed his own tools for the collection of data for the present study in the form of questionnaires.

4.8.1 Questionnaires

Webster's Encyclopaedia Unabridged Dictionary (1994)²³⁴ puts questionnaire as "a list of questions, usually printed, submitted for replies that can be analysed for usable information".

Initial Version

The researcher used structured questionnaires containing different scales to collect information about the selected variables. According to Young (1960),²³⁵ "a structured questionnaire is which contains definite concrete and pre-coordinate questions, with additional questions limited to those necessary to classify inadequate answers or to elicit a more detailed response." The questions were prepared in advance and were not constructed on the spot during the questioning period. The researcher contacted authorities at the department of VHSE and experts in the field of vocational education to get some valuable tips for the preparation of the questionnaire. On the basis of information collected through the above method the researcher constructed the following tools (Questionnaires) for the study.

1. Questionnaire to Survey Students (QSS)
2. Questionnaire to Survey Pass Outs (QSPO)
3. Questionnaire to Survey Teachers (QST)
4. Questionnaire to Survey Principals (QSP)

Final Version

The above questionnaires were shown to experts for their guidance to ensure that they are the most suited for the present study. The researcher tried to make sure that the questions were short, specific, clear and self-explanatory and the scales are reliable. Care was taken to make sure that the questions were easily understood by the respondents. All the questionnaires for administration were prepared in the regional language (Malayalam). The questionnaires were tested by administering to 50 students, 50 pass outs, 30 teachers and 30 principals. Responses to each question were examined carefully and based on this some questions were deleted, some were restructured and a few new ones were added. The various scales used in the questionnaires were tested for validity and reliability and necessary modifications were made to them before incorporating them in the final versions of the questionnaires. The details of the development and testing of the scales are given below. The final versions of the questionnaires were drafted based on the results of the pre-tests and with the guidance from experts. The questionnaires are given in the appendix.

4.8.2 Measurement and Scaling Techniques Used in the Questionnaires

“In general, measurement involves (1) assigning a set of numerals (2) to a set of entities (3) in accordance with some logically acceptable rule” (Van Dalen, 1962).²³⁶ While measuring attitudes and opinions there arises the problem of their valid measurement. The term ‘scaling’ is applied to the

procedures for attempting to determine quantitative measures of subjective abstract concepts. Scaling has been defined as a “procedure for the assignment of numbers (or other symbols) to a property of objects in order to impart some of the characteristics of numbers to the properties in question” (Philips, 1938).²³⁷

In the present study the following scales were used for measuring various variables.

- *Socio-Economic Status Scale. (SES Scale)*
- *Awareness Scale (A Scale)*
- *Training and Support Facility Scale. (TSF Scale)*
- *Entrepreneurship Scale. (E Scale)*

“Reliability is the property of consistency of a measurement that gives the same result on different occasions” (Mc Burney, 1938)²³⁸. All the scales used in this study were tested for reliability using Cronbach’s Alpha Reliability Test.

Socio-Economic Status Scale

This particular scale was used to measure the socioeconomic backgrounds of the students and pass outs of the VHSE in Kerala. Various SES scales already available were examined carefully like the Socio-Economic Status Scale of Kuppuswamy (Urban, 1976).²³⁹ Most of the scales available were either for urban population or for rural population where as the sample for this particular study included students and pass outs from both urban and rural population. Therefore these scales were not suitable for this study. The scale developed by Agarwal et al. (2005)²⁴⁰ was proved to be reliable for both urban and rural population and this scale was used to measure the Socio-Economic Statuses of the students and pass outs in this study.

This scale consists of 22 questions on various aspects relating to socio-Economic status like income, occupation, educational qualification, family possessions, number of family members, caste, type of house, locality and tax paid. Detailed questionnaire is given in the appendix. The minimum score obtainable is 6 and the maximum score obtainable is 100 with a median value of 53. The respondents are classified into different socio-Economic status groups based on the scores obtained according to the table given below (*Table: 4.1*). The scale was tested using the *Cronbach's Alpha Reliability Test* and the *alpha value* was found to be 0.8877 for students and 0.9135 for pass outs. Since the value was above 0.7 the scale was considered as a reliable one and was accepted.

Table: 4.1 Categorisation of Respondents Based on the Score Obtained by Them on the SES Scale

Socio-Economic Status Group	Score
Upper High	> = 76
High	61-75
Upper Middle	46-60
Lower Middle	31-45
Poor	16-30
Very Poor or below Poverty Line	= < 15

Awareness Scale

The objective was to measure the awareness of students, pass outs, teachers and principals of the Vocational Higher Secondary Education in Kerala with respect to the goals and objectives, mode of implementation, apprenticeship training and higher study and employment opportunities of the programme of VHSE. No existing scale was found to be suitable for the same. Therefore an effort was made to develop a scale. After going through the

available literature and in consultation with experts a scale was developed, the details of which are given below.

The scale consists of eight items the responses to which are ‘Yes’ or ‘No’ type. ‘Yes’ response will get a score of one and ‘No’ response will get a score of zero. The item scores are added up to get the total score. The maximum score attainable is 8 and the minimum score attainable is 0. The respondents were classified into three categories as follows.

Awareness Score	0-2	Poor
Awareness Score	3-5	Average
Awareness Score	6-8	Good

The reliability was tested using Cronbach’s Alpha Reliability Test and the Alpha value was found to be 0.7215 for students, 0.7502 for pass outs, 0.8260 for teachers and 0.9088 for principals.

Training and Support Facility Scale

This scale was developed to arrive at a measure of the Training and Support Facility statuses of the VHS schools. The “*Training and Support Facility*” in the present study is a measure of the quality and availability of the various training and support facilities which are necessary for the effective delivery of the course contents to the students and the development of the required skills to make them competent enough to take up occupations or engage in self employment. Even after going through all the available literature, the researcher could not find a suitable measuring device for the purpose. Therefore an effort was made to develop a new instrument in the form of a scale. After going through the available literature and in consultation with experts a scale was developed, the details of which are given below.

Four different dimensions were identified as critical to the effective delivery of the course content and optimum development of skills. They are:

- Infrastructure facilities
- Training personnel
- Real life training
- Career guidance and counselling

Each of the above mentioned dimensions has different sub-dimensions which are shown in the *table 4.2*. Each sub-dimension was measured using a five point scale ranging from one to five which was positively coded. Each score value (1, 2, 3, 4, & 5) of each sub-dimension was provided with a description to help the respondents to give an objective response. The score-value-descriptions are given in the appendix. The reliability was tested using *Cronbach's Alpha Reliability Test* and the *alpha value* was found to be 0.7066. Since the value was above 0.7 the scale was considered as a reliable one and was accepted.

The next step was to get the total score of the Training and Support Facility. Since the relative importance of each dimension and sub-dimension vary with respect to the delivery of the course content and the development of the necessary skills, a two stage weighted score calculation was used to arrive at the final score. For this the dimensions and sub-dimensions were assigned appropriate weights. The weight given to each dimension and sub-dimension is shown in the *table 4.3*.

Table: 4.2 Dimensions and Sub-dimensions of the Training and Support Facility

Dimension	Sub-dimension
Infrastructure Facility	<ul style="list-style-type: none"> ➤ Class room facility ➤ Laboratory facility ➤ Library facility ➤ Smart room facility ➤ Physical training facility ➤ Transportation facility ➤ Drinking water facility ➤ Toilet facility
Training Personnel	<ul style="list-style-type: none"> ➤ Availability ➤ Nature of appointment ➤ Qualification and industry experience ➤ Teaching Experience
Real Life Training	<ul style="list-style-type: none"> ➤ Production cum Training Centre (PTC) ➤ On the Job Training (OJT) ➤ Field Visit (FV) ➤ School Industry Linkage (SIL) ➤ Apprenticeship Training (AT)
Career guidance and Counselling	<ul style="list-style-type: none"> ➤ Career Guidance and Counselling Cell (CGCC) ➤ Data base of pass outs and follow up activities ➤ Old Students' Association (OSA)

Table: 4.3 Weights Given to the Various Dimensions and Sub-dimensions of Training and Support Facility

Dimension	Weight	Sub-dimension	Weight
Infrastructure facility	0.3	Class room facility	3
		Laboratory facility	3
		Library facility	1.5
		Smart room facility	0.5
		Physical training facility	0.5
		Transportation facility	0.5
		Drinking water facility	0.5
		Toilet facility	0.5
		Total for the Sub-dimension	10
Training Personnel	0.3	Availability	4
		Nature of appointment	1
		Qualification and industry experience	3
		Teaching experience	2
		Total for the Sub-dimension	10
Real Life Training	0.2	Production cum Training Centre (PTC)	4
		On the Job Training (OJT)	3
		Field Visit (FV)	1
		School Industry Linkage (SIL)	1
		Apprenticeship Training (AT)	1
		Total for the Sub-dimension	10
Career Guidance and Counselling	0.2	Career Guidance and Counselling Cell (CGCC)	5
		Follow up activities	3
		Old Students Association	2
Total for all the Dimensions	1.0	Total for the Sub-dimension	10

First the score value obtained for each sub-dimension of a particular dimension was multiplied with the corresponding sub-dimension weight and the values thus obtained were summed up to get the total score of the corresponding dimension. The maximum score thus obtainable was 50 and the minimum score 10 with a median scale value of 30. After getting the dimension scores, they were multiplied with the corresponding dimension weights, and the values thus obtained were added together to get the total *Training and Support Facility Score*. Again the maximum score thus obtainable was 50 and the minimum score 10 with a median scale value of 30. The schools were classified into five categories based on the *Training and Support Facility Score* as shown in the table below (*Table: 4.4*).

Table: 4.4 Criteria for Training and Support Facility Categorisation of Schools

Category	Total Score
Very Poor	10-18
Poor	18-26
Average	26-34
High	34-42
Very High	42-50

Entrepreneurship Scale

This scale was used to assess the possession of entrepreneurship skills by the pass outs. The scale prepared by the DETE (1998)²⁴¹ and later modified by Shipra Vaidya (2002)²⁴² has been used in this study. The original scale contained 32 items classified into eight dimensions of entrepreneurship, each dimension comprising four items and the modified scale contained 52 items classified into 13 dimensions. Two out of the four items for each dimension were positively coded and the other two were negatively coded on a five point scale.

The score for a dimension is obtained by adding up the scores of all the four items of that dimension. The score for each item can vary from 1 to 5 and the score for a dimension can vary from 5 to 20. The 13 dimensions are given below.

- Risk taking
- Persistence and Hard Work
- Use of Feedback
- Personal Responsibility
- Knowledge Ability
- Persuasive Ability
- Managerial Ability
- Innovativeness
- Integrity and Communication
- Emotional Stability
- Motivation
- Decision Making
- Divergent Thinking

Each individual dimension is interpreted on the following basis:

- ✓ A given dimension is *dominant* if its score is equal to or more than 16.
- ✓ A given dimension is *supportive* if its score is equal to or more than 12 but less than 16.
- ✓ A given dimension is *least emerging* if its score is equal to or more than 8 but less than 12.
- ✓ A given dimension is *rejected* if its score is less than 8.

The total score of a respondent is obtained by adding up the scores of all the 13 dimensions and it can vary from 52 to 260 with a median scale value of 156. The detailed scoring sheet is given in the appendix.

The reliability was tested using Cronbach's Alpha Reliability Test and the Alpha value was found to be 0.8004 for students and 0.8759 for pass outs.

4.8.3 Analysis of Documents and Records

This technique was used for collecting information regarding the history, development, mode of implementation, management structure, organisation, course structure and present status of the scheme of Vocational Higher Secondary Education in Kerala and to develop a profile of the scheme in Kerala. It also helped in the analysis of the distribution of the schools, courses and sections (batches) with respect to different districts, localities, regions.

The growth of the VHS schools in Kerala and the distributions of the schools based on the annual intake of students, number of batches, trades, faculties and groups were also analysed.

4.9 Administration of the Tools

Before administrating the tools the researcher contacted the principals and vocational teachers of the selected schools in advance and the date and time of the visit were fixed as per their convenience. They were convinced about the utility of the study and were requested to extend support for the successful completion of the study. After getting the permission from the Director of VHSE the researcher approached the principals of the selected schools to get clearance for the administration of the tools.

4.10 Collection of Data

4.10.1 Sources of Data

Both primary and secondary data were collected. The sources of primary data were students, pass outs, teachers and principals of the selected schools. Primary data were collected using the above described tools. Sources of secondary data were books on education in general and vocational education in particular, journals on vocational education, research papers on vocational education, records and documents from the VHSE department and other governmental and non-governmental educational, research and statistical agencies and various governmental and non-governmental websites on vocational education, research and other related areas. Secondary data were collected by analysing the various printed materials and by visiting the websites.

4.10.2 Administration of Tools for Data Collection

QSS (Questionnaire to Survey Students)

The researcher visited the selected schools and directly administered the questionnaires to the selected batch of students in the class rooms. All the students who were present on that particular day were administered the questionnaire. First they were briefed about the purpose and importance of the study and the method of filling up the questionnaire and the importance of giving accurate answers. The participation of the students was excellent. They were eager to know whether this study would help them in solving some of their problems. The students were assured that information collected would be kept confidential. The procedure took about 40 to 60 minutes in each school. Additional questionnaires were given to the class teacher to be get filled up by students who were absent on that day. These questionnaires were collected on

the second visit to the schools. A total of 955 filled-up questionnaires were received. After scrutiny and editing, 936 complete questionnaires were selected.

QSPO (Questionnaire to Survey Pass Outs)

The most difficult part of the data collection was the collection of data from VHSE pass outs. The researcher collected the addresses and phone numbers (whenever available) of all VHSE pass outs from the selected schools of the concerned courses from the year 2003-04 to 2007-08 by visiting the schools. 500 pass outs from the courses selected for the study from the 39 schools were randomly selected by arranging them first in the order of their year of passing out and then in the alphabetic order of their names and the questionnaires were mailed to them with a covering letter showing the purpose and importance of the research and ensuring them that the information provided by them will be kept confidential. Those who had phone connections were contacted before sending the questionnaires. Questionnaires were sent to 500 pass outs. 426 responses were obtained. After scrutiny and editing, 396 responses which were found to be complete were selected. It took a few months for getting the responses from all the selected pass outs. The researcher had to make repeated phone calls and send many reminders for getting the responses from certain pass outs.

QST (Questionnaire to Survey Teachers)

This questionnaire was administrated to the 39 randomly selected vocational teachers of the concerned course of the selected schools by meeting them personally. They were contacted in advance to make sure that they were available on the day of visit by the researcher. All the teachers cooperated well and furnished the information in the questionnaire. They were assured of the confidentiality of the data collected from them. All of them filled up the

questionnaires and returned the same to the researcher on the same day and after scrutiny and editing all the filled-up questionnaires were selected for the study.

QSP (Questionnaire to Survey Principals)

All the principals of the 39 selected schools were administrated the questionnaire. They were contacted in advance to make sure that they were available on the day of visit by the researcher. Though, all the principals granted permission to collect data from the teachers and students, their attitude to the research varied. Only a few of them took an active role in the process. They were assured of the secrecy of the data collected from them. All of them filled up the questionnaires and returned the same to the researcher on the same day and after scrutiny and editing all of them were selected for the study.

4.11 Statistical Treatment of the Data

The data were processed both manually and using computer. First the data were edited coded and tabulated using coding and tabulation sheets specially prepared for this study. For the statistical analysis, the popular statistical package SPSS was used. Various independent and dependent variables were identified which were subjected to further statistical treatment. The data were presented using tables, pie charts, column charts, and line charts. Frequency distribution and percentage analysis were used wherever applicable. Cross tabulation was also done whenever required. Hypotheses were formulated and tested. Statistical tests like Cronbach's alpha, chi-square test, t-test, z-test, correlation, regression and ANOVA were done to test the hypotheses and draw conclusions.

4.12 Conclusion

Methodology adopted for a research should be fool-proof to yield accurate and reliable results. This has been kept in mind while developing the methodology for the present research. But there are limitations arising out of certain considerations and efforts have been made to keep these limitations to minimum in the present study.



A PROFILE OF THE VOCATIONAL HIGHER SECONDARY EDUCATION IN KERALA

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5.1 Introduction

Secondary and Higher Secondary education are the major terminal stages of education in India, because, it is at this point that a large number of the youth decide on whether to pursue higher education, or to join the work force. Educationalists and experts have consistently recommended that education at this stage should be given a vocational bias to link it with the world of employment. The Vocational Education Scheme at the Higher Secondary stage that came into existence in India in the late 1970's has been a historic step in this direction. However, initially, only a handful of States and Union Territories took the lead in imparting Vocational Education. Kerala was

not among the first list of States to start the scheme. The scheme was started in Kerala only in 1983-84. A profile of the Vocational Higher Secondary Education in Kerala is given in the following paragraphs.

5.2 Progress of Vocational Higher Secondary Education in Kerala

Vocational Higher Secondary Education had a humble beginning in Kerala in 1983-84. The *table 5.1* gives the growths of the schools and batches of VHSE in Kerala. To start with, the scheme was implemented in 19 schools with a few selected courses and was extended to 73 schools in 1985-86 offering 27 different vocational courses. In 1988-89 there were 100 schools with a total of 200 batches (sections). The programme continued to expand every year until 1995-96 and the number of schools went up to 310 with a total of 814 sections offering 45 different courses. The next expansion came in 2000-01 and the number of schools went up to 375 with a total of 1000 batches. With the last expansion in 2006-07, at present, there are 389 schools with 1100 batches in the state imparting Vocational Higher Secondary Education in 42 courses. It is clear that the growth of the programme has slowed down after 1995-96. After 1995-96, the number of schools increased by only 79 (25.5%) and the number of batches increased by only 286 (35.1%) where as the growth was much higher before 1995-96, especially during the seven year period prior to that (210% for schools and 307% for batches respectively). The number of students admitted to these 389 VHS schools every year is only 27500 which is less than 10% of the number of students admitted to Higher Secondary schools (Plus-Two). So there is a need to start more VHS schools if the goal of directing at least 50% of the students after the Secondary level (Tenth Standard) to vocational education as envisaged by the Education Commission (Kothari Commission-1964-66, 1968)²⁴³ is to be fulfilled.

Table: 5.1 Growths of Vocational Higher Secondary Schools and Batches in Kerala

Year	School Sanctioned	Cumulative Number of Schools	No of Batches	Cumulative Number of Batches
Up to 1988-89	100	100	200	200
1989-90	50	150	150	350
1990-91	25	175	50	400
1991-92	35	210	100	500
1992-93	15	225	30	530
1993-94	10	235	34	564
1994-95	50	285	200	764
1995-96	25	310	50	814
1996-97	0	310	0	814
1997-98	0	310	0	814
1998-99	0	310	0	814
1999-00	0	310	0	814
2000-01	65	375	186	1000
2001-02	0	375	0	1000
2002-03	0	375	0	1000
2003-04	0	375	0	1000
2004-05	0	375	0	1000
2005-06	0	375	0	1000
2006-07	14	389	100	1100
2007-08	0	389	0	1100
2008-09	0	389	0	1100
2009-10	0	389	0	1100
Total	389		1100	

Source: Planning Board of Kerala (2002), “*Study on the Vocational Higher Secondary Education in Kerala*”, Government of Kerala, Thiruvananthapuram, 2002.

5.3 Government and Aided Schools

Of the 389 schools, 128 schools are in the private aided sector and 261 are in the government sector. Thus private aided sector has 32.9% of the total schools with 394 sections (35.8%) and the government sector has 67.1% of the total schools with 706 sections (64.2%) (*Table: 5.2*). It is evident that majority

of the schools are in the government sector. Certain corporate managements having a large number of schools at the secondary and higher secondary levels (Plus-Two) haven't yet shown any interest in Vocational Higher Secondary Education in the State. Further there are no VHS schools in the unaided sector. This is in contrast to the Higher Secondary Education (Plus-Two) where a number of schools belong to the unaided sector. The accessibility, awareness, and popularity of VHSE can be improved by ensuring the involvement of these sectors in Vocational Higher Secondary Education. At the same time it has been learnt that some government schools are reluctant to start VHSE and some of the existing government VHS schools are not interested in taking up additional batches. This trend has to be changed if the scheme has to grow in Kerala. Lack of adequate infrastructure, unpopularity of VHSE, administrative problems at the school level, unavailability of permanent staff etc. have been identified as some of the problems behind such a trend. These problems need to be addressed immediately.

Table: 5.2 Distributions of Schools and Batches Based on Sector

Sector	Frequency (Schools)	Percent (Schools)	Frequency (Batches)	Percent (Batches)
Private	128	32.9	394	35.8%
Government	261	67.1	706	64.2%
Total	389	100.0	1100	100.0

Source: www.vhse.kerala.gov.in/

5.4 District Wise Distribution of Schools

Table: 5.3 shows the district wise distribution of schools. Kollam district has the highest number of schools (52) followed by Thiruvananthapuram (41) and Thrissur (36) districts. Wayanad district has the least number of schools (10). A lesser concentration of schools can be seen in the northern districts when compared with southern districts of Kerala. The first seven districts account for 57.1% of the

schools. The last expansion in 2006 took this problem into consideration and all the 14 schools allotted were to the northern districts of Kerala. More efforts of this kind are needed to nullify the imbalance in the geographic distribution of VHS schools and to improve its accessibility and popularity.

Table: 5.3 District Wise Distribution of Schools

District	Number	Frequency	Percent
Thiruvananthapuram	41	10.5	10.5
Kollam	52	13.4	23.9
Alappuzha	21	5.4	29.3
Pathanamthitta	27	6.9	36.2
Kottayam	31	8.0	44.2
Ernakulam	34	8.7	53.0
Idukki	16	4.1	57.1
Thrissur	36	9.3	66.3
Palakkad	25	6.4	72.8
Malappuram	27	6.9	79.7
Kozhikkode	28	7.2	86.9
Wayanad	10	2.6	89.5
Kannur	19	4.9	94.3
Kazargode	22	5.7	100.0
Total	389	100.0	

Source: www.vhse.kerala.gov.in/

5.5 Batch Wise Distribution of Schools

Table: 5.4 shows the distribution of schools based on the number of batches. More than half of the schools (51.4%) have only two batches. 25.7% of the schools have three batches and 13.4% have four batches. 6.7% of the schools have five batches and 2.3% have six batches. One school has only one

batch and one school has as many as seven batches. So there are considerable differences among schools as far as the number of batches is concerned. Majority of the schools having two batches are government schools. As mentioned earlier one of the reasons for this is the reluctance of government schools to take up additional batches. Most of the private schools have more than two batches. Usually two batches are sanctioned when a new VHS school is started and the number of batches is increased in the subsequent expansions. 25 students are admitted to one batch and therefore majority of the schools can admit only 50 students. This may be a limitation for VHS schools situated in areas of high demand for its courses.

Table: 5.4 Distribution of Schools Based on the Number of Batches

Number of Batches	Frequency	Percent	Cumulative Percent
1	1	0.3	0.3
2	200	51.4	51.7
3	100	25.7	77.4
4	52	13.4	90.7
5	26	6.7	97.4
6	9	2.3	99.7
7	1	0.3	100.0
Total	389	100.0	

Source: www.vhse.kerala.gov.in/

5.6 Trade Wise Distribution of Schools

Table: 5.5 shows the distribution of schools based on the number of different trades. Almost half of the schools (49.1%) offer only two trades, 24.2% of the schools offer three trades and 11.8% offer four trades. 6.2% of the schools offer five trades and 0.8% offer six trades. 7.7% of the schools offer only one trade and one school offer as many as 7 trades. Here also considerable differences are seen among the schools. Sector wise distribution of trades shows that a higher proportion of the private schools offer more than two trades when compared with

the government schools. This is due to the fact that majority of the government schools have only two batches. As a result of this, only limited options are available to students when it comes to the selection of trades. Therefore more batches and more different trades should be started in the existing schools, especially in government schools.

Table: 5.5 Distribution of Schools Based on the Number of Different Trades

Number of Different Trades	Frequency	Percent	Cumulative Percent
1	30	7.7	7.7
2	191	49.1	56.8
3	94	24.2	81.0
4	46	11.8	92.8
5	24	6.2	99.0
6	3	0.8	99.7
7	1	0.3	100.0
Total	389	100.0	

Source: www.vhse.kerala.gov.in/

5.7 Rural-Urban Distribution of Schools

Distribution of schools with respect to Panchayath/ Municipality/ Corporation is given in the *table: 5.6*. Out of the 389 schools, 300 schools (77.1%) are in Panchayath areas, 51 (13.1%) in Municipal areas and 38 (9.8%) in Corporation areas. It is evident that a vast majority of the schools are in the Panchayath areas. Usually job opportunities are more in the Municipal and Corporation areas when compared with Panchayath areas. Students from Panchayath areas, especially girls, are a little bit reluctant to move to these areas for jobs. This limits their job opportunities. More over accessibility of institutions for real life training strategies like On the Job Training (OJT), Schools Industry Linkage (SIL), and Apprenticeship Training (AT) are more in

Municipal and Corporation areas when compared with Panchayath areas. Further expansions should take into consideration these aspects also.

Table: 5.6 Distribution of Schools Based on Locality

Locality of School	Frequency	Percent	Cumulative Percent
Panchayath	300	77.1	77.1
Municipality	51	13.1	90.2
Corporation	38	9.8	100.0
Total	389	100.0	

Source: www.vhse.kerala.gov.in/

5.8 Courses Offered, Number of Batches and Intake of Students

In VHSE, there were 45 different courses in 1997-98 out of which 3 courses have been dropped since they were obsolete and now there are only 42 courses. These courses are divided into four groups named A, B, C and D and into nine faculties (*Table: 5.7*). The nine faculties are Engineering Technology, Agriculture, Animal Husbandry, Fisheries, Business and Commerce, Paramedical, Home Science, Humanities, and Physical Education. Students admitted per batch are 25 and a total of 27500 students are admitted every year to the 389 VHSE schools in Kerala. Course wise distribution of batches and course wise intake of students are shown in the *table: 5.7*. Medical Laboratory Technician (MLT) has the highest number of batches (154) and highest intake of students (3850) followed by Accounting and Auditing (AAG) with 89 batches and 2225 students and Maintenance and Repairs of Radio and Television (MRT) with 78 batches and 1950 students. These three courses account for 29.18% of the annual intake of students. However the actual intake can be a little bit higher for certain academic years owing to a 10% increase in the number of students admitted per batch as per government decision. There are 13 trades (courses) under Engineering Technology, 4 under Agriculture, 3 under Animal Husbandry, 4 under Fisheries, 7 under Business and Commerce,

6 under Paramedical, 3 under Home Science 1 each under Humanities and Physical education.

Table: 5.7 Course Wise Number of Batches and Intake of Students

Group	Faculty	Name of Course	Number of Batches	Students Admitted	Percentage
Group I	Engineering Technology	Agro-machinery (Mechanical Servicing)(AGR)	3	75	0.27
		Computer Application(CAP)	44	1100	4.0
		Civil Construction and Maintenance(CCM)	42	1050	3.82
		Computer Science(CSE)	59	1475	5.36
		Maintenance and Repairs of Automobiles(MRA)	17	425	1.55
		Maintenance and Repairs of Domestic Appliances(MRD)	59	1475	5.36
		Maintenance and Repairs of Radio and Television(MRT)	78	1950	7.09
		Maintenance and Repairs of 2 Wheelers and 3 Wheelers(MRW)	12	300	1.09
		Printing Technology(PHY)	23	575	2.09
		Refrigeration and Air-conditioning(RAC)	21	525	1.91
		Rubber Technology(RTY)	3	75	0.27
		Textile Dyeing and Printing(TDP)	1	25	0.09
		Textile Weaving(TWG)	1	25	0.09
Group II	Agriculture	Fruits and Vegetables(FVS)	28	700	2.55
		Nursery Management and Ornamental Gardening(NMG)	58	1450	5.27
		Plant Protection(PPN)	67	1675	6.09
		Sericulture(SER)	3	75	0.27
	Animal Husbandry	Dairying (Milk Products)(DMP)	6	150	0.55
		Livestock Management (Dairy Husbandry)(LDH)	36	900	3.27
		Livestock Management (Poultry Husbandry)(LPH)	14	350	1.27
	Fisheries	Aquaculture(AQU)	9	225	0.82
		Fishing Craft and Gear Technology(FCG)	4	100	0.36
		Fish Processing Technology(FPT)	15	375	1.36
		Maintenance and Operation of Marine Engines(MME)	6	150	0.55
	Paramedical	Domestic Nursing(DNG)	16	400	1.45
		Dental Technology(DTY)	5	125	0.45
ECG and Audiometric Technician(ECG)		9	225	0.82	
Medical Laboratory Technician(MLT)		154	3850	14.0	

		Maintenance and Operation of Biomedical Equipments(MOB)	29	725	2.64
		Physiotherapy(PHY)	1	25	0.09
	Physical Education	Physical Education(PEN)	4	100	0.36
	Home Science	Cosmetology and Beauty Parlour Management(CBP)	5	125	0.45
		Clothing and Embroidery(CEY)	20	500	1.82
		Crèche and Pre-school Management(CPS)	3	75	0.27
Group III	Humanities	Travel and Tourism(TTM)	27	675	2.45
Group IV	Business and Commerce	Accounting and Auditing(AAG)	89	2225	8.09
		Banking Assistance(BAS)	9	225	0.82
		Catering and Restaurant Management(CRM)	4	100	0.36
		General Insurance(GIS)	14	350	1.27
		Marketing and Salesmanship(MSP)	25	625	2.27
		Office Secretaryship(OSP)	72	1800	6.55
		Reception, Book-keeping and Communication(RBC)	5	125	0.45
		Total	1100	27500	100

Source: www.vhse.kerala.gov.in/

5.9 Faculty Wise Distribution of Batches and Intake of Students

Faculty wise analysis shows that more students are admitted in Engineering Technology followed by Business and Commerce and Paramedical in that order (*Table: 5.8*). Out of the 1100 sections (batches), 363 sections (33%) are in the faculty of Engineering Technology, 218 (19.8%) in Business and Commerce and 214 (19.5%) in Paramedical. These three account for 72.3% of the total number of batches. A comparative analysis with Tamil Nadu and Karnataka shows that in Karnataka 45% of the divisions (batches) are in Engineering Technology and in Tamil Nadu it is 48%. So the number of divisions in Engineering Technology is less in Kerala when compared with Karnataka and Tamil Nadu.

Table: 5.8 Faculty Wise Distribution of the Batches and Intake of Students

Faculty	Number of Batches	Number of Students	Percentage
Engineering Technology	363	9075	33.0
Agriculture	156	3900	14.2
Animal Husbandry	56	1400	5.09
Fisheries	34	850	3.09
Paramedical	214	5350	19.5
Physical Education	4	100	0.36
Home Science	28	700	2.55
Travel and Tourism	27	675	2.45
Business and Commerce	218	5450	19.8
Total	1100	27500	100

Source: www.vhse.kerala.gov.in/

5.10 Group Wise Distribution of Batches and Intake of Students

The division of courses into different groups is based on the nature of optional subjects. Group A is similar to the first group of the old Pre-degree course and has Mathematics, Physics, and Chemistry as optional subjects. Engineering courses come under this group. Group B is similar to the second group of the old Pre-degree course and has Biology, Physics, and Chemistry as optional subjects. Paramedical, Agriculture, Fisheries, Animal Husbandry, Physical Education, and Home Science come under this group. Group C is similar to the third group of the old Pre-degree course and has History, Geography, and Economics as optional subjects. Travel and Tourism comes under this group. Group D is similar to the fourth group of the old Pre-degree course and has Accountancy, Management, and Business Studies as optional subjects. Business and Commerce courses come under this group. *Table: 5.9* shows the number of batches and students in each group. Group B has the

highest percentage (44.7%) of batches and students followed by group A with 33%. Group D has 19.8% of batches and Group C has only 2.45% of batches.

Table: 5.9 Group Wise Distribution of Batches and Intake of Students

Group	Number of Batches	Number of Students	Percentage
Group A	363	9075	33.0
Group B	492	12300	44.7
Group C	27	675	2.45
Group D	218	5450	19.8
Total	1100	27500	100

Source: www.vhse.kerala.gov.in/

5.11 VHSE Courses Approved by the Kerala PSC

Only 12 out of the 42 courses were approved by the Kerala Public Service Commission (KPSC) until 2007 (The courses suffixed with ‘*’ in the table below). 23 new courses were approved in 2007 taking the tally of courses approved by the KPSC to 35. The courses approved are shown in the *table: 5.10*. The corresponding faculties are given in the brackets. Twelve courses from the faculty of Engineering Technology, four each from the faculties of Agriculture, Fisheries, Paramedical and Business and Commerce, three from the faculty of Animal Husbandry, two from the faculty of Home Science and one each from the faculties of Physical Education and Home Science have so far got KPSC approval. Seven courses are still to be approved by the KPSC. Approval by the KPSC can have a positive impact on the image, popularity and success of the scheme because it gives additional job opportunities to the pass outs, that too in the government sector. The delay in giving approval to the VHSE courses has been a major problem with the VHSE in Kerala. It has been solved to some extent now. But the remaining seven courses also should be approved by the KPSC. So steps should be taken to get the approval of the Kerala PSC for the remaining VHSE courses.

Table: 5.10 VHSE Courses Approved by the Kerala PSC

Sl. No	Name of Course
1	(Engineering Technology) Civil Construction and Maintenance*
2	(Engineering Technology) Maintenance and Repairs of Two Wheelers and Three Wheelers.
3	(Engineering Technology) Maintenance and Repairs of Automobiles.
4	(Engineering Technology) Maintenance and Repairs of Radio and Television.
5	(Engineering Technology) Maintenance and Repairs of Domestic Appliances
6	(Engineering Technology) Mechanical Servicing/Agro machinery.
7	(Engineering Technology) Refrigeration and Air conditioning.
8	(Engineering Technology) Printing Technology.
9	(Engineering Technology) Rubber Technology
10	(Engineering Technology) Textile Dyeing and Printing
11	(Engineering Technology) Textile Weaving
12	(Engineering Technology) Computer Science/Computer Application
13	(Agriculture) Plant Protection*
14	(Agriculture) Fruits & Vegetables*
15	(Agriculture) Nursery, Management and Ornamental Gardening*
16	(Agriculture) Sericulture*
17	(Animal Husbandry) Live stock Management - Dairy Husbandry*
18	(Animal Husbandry) Live stock Management - Poultry Husbandry*
19	(Animal Husbandry) Dairying - Milk Products*
20	(Fisheries) Fish Processing Technology
21	(Fisheries) Maintenance and Operation of Marine Engines
22	(Fisheries) Aquaculture
23	(Fisheries) Fishing Craft and Gear Technology
24	(Paramedical) ECG & Audiometric Technician*
25	(Paramedical) Medical laboratory Technician
26	(Paramedical) Physiotherapy
27	(Paramedical) Dental Technology
28	(Physical Education) Physical Education*
29	(Home Science) Clothing and Embroidery*
30	(Home Science) Crèche and Pre-school Management
31	(Humanities) Travel and Tourism
32	(Business and Commerce) Office Secretaryship*
33	(Business and Commerce) Catering and Restaurant Management
34	(Business and Commerce) Reception, Book-keeping and Communication
35	(Business and Commerce) Accountancy and Auditing

Source: www.vhse.kerala.gov.in/

5.12 Reservations Available to VHSE Pass Outs for Higher Studies

Availability of courses for higher studies is limited in Kerala for many of the VHSE courses. Lack of adequate reservation makes it more difficult for VHSE pass outs to get admission to these courses. It can be seen from *table: 5.11* that the availability of reservations to VHSE pass outs for higher studies is very limited considering the number students completing VHSE each year and the number of seats available in the state in the concerned higher study courses. A number of VHSE pass outs go to other states in search of their favourite courses for higher studies. But some are forced to opt for subjects different from their VHSE trade because of the lack of opportunities for higher studies in their favourite trade locally. More vocational courses at the degree and diploma levels with adequate reservation for VHSE pass outs would solve this problem to some extent. Since the scheme of VHSE is *bifocal* in Kerala, which gives opportunity for students to pursue higher studies, more reservation for higher studies would attract more students to VHSE. Another drawback is the unavailability of the lateral entry scheme for VHSE pass outs of Engineering Technology to Polytechnics in Kerala. Polytechnics outside Kerala provide this facility to pass outs of VHSE from Kerala.

Table: 5.11 Reservations Available to VHSE Pass Outs for Higher Studies

Sl. No.	Name of the Body	Percentage of Seats Reserved	Course	Eligibility
1	Polytechnics in Kerala	2%	All three Year Diploma Courses of Engineering Trades	Pass outs of Group 'A' VHSE Courses
2	Polytechnics in Kerala	2%	Diploma in Commercial Practice (DCP)	Pass outs of Group 'D' VHSE Courses
3	Mahathma Gandhi University, Kottayam	5%	B.Sc.(MLT)	Pass outs of VHSE MLT Courses

Source: www.vhse.kerala.gov.in/

5.13 Course Structure

The courses are divided into four groups, A, B, C, & D (Table: 5.12). Each course consists of three parts. The first part includes English and General Foundation Course (GFC). The second part includes vocational subjects. The third part includes optional subjects. The first two parts are compulsory and the third part is optional. The first part is common to all the four groups. The second part is different for each course and there are 42 different vocational trades available. In the third part there are 10 different subjects. Group A has Physics, Chemistry and Mathematics as optional subjects, Group B has Physics, Chemistry and Biology as optional subjects, Group C has History, Geography and Economics as optional subjects and Group D has Business Studies, Accountancy and Management as optional subjects.

Table: 5.12 Course Structure and Options

Part	Group	Subject	Nature
Part I	Common to All Groups	English	Compulsory
		General Foundation Course (GFC)	Compulsory
Part II	Different for each Group and each Course	Vocational Subject	Compulsory
Part III	Group A	Physics Chemistry Mathematics	Optional
	Group B	Physics Chemistry Biology	Optional
	Group C	History Geography Economics	Optional
	Group D	Business Studies Accountancy Management	Optional

Source: www.vhse.kerala.gov.in/

5.14 Central Assistance

The government of India approved VHSE as a Centrally Sponsored Scheme (CSS) only in 1988 and started granting financial assistance based on projects. Project proposals are examined by the ministry and grants are allocated to states. Out of the total approved grant for a year, 50% will be released as first instalment and the remaining 50% is released after submitting utilization certificate of at least 75% of the amount released. The pattern of financial assistance from the Government of India (GOI) is shown in *table: 5.13*. There are 17 components eligible for central assistance of which 11 have 100% assistance, 5 components have 50% central assistance, and one component, vocational school staff salary, has 75% central assistance.

Table: 5.13 Pattern of Central Assistance

Sl. No.	Item
A	100% Central Assistance
1	Apprentice training
2	Evaluation and monitoring
3	District vocational survey
4	Curriculum development workshops
5	Instructional material development workshops
6	Text book development workshop
7	Resource persons training courses
8	Instructional material subsidy
9	Teachers training courses
10	Equipment to schools
11	Workshop/laboratory building
B	75% Central Assistance
12	Vocational Schools staffs salary
C	50% Central Assistance
13	Vocational wing of directorate of education
14	District vocational wing
15	SCERT vocational wing
16	Raw material contingency
17	Field visits by the students

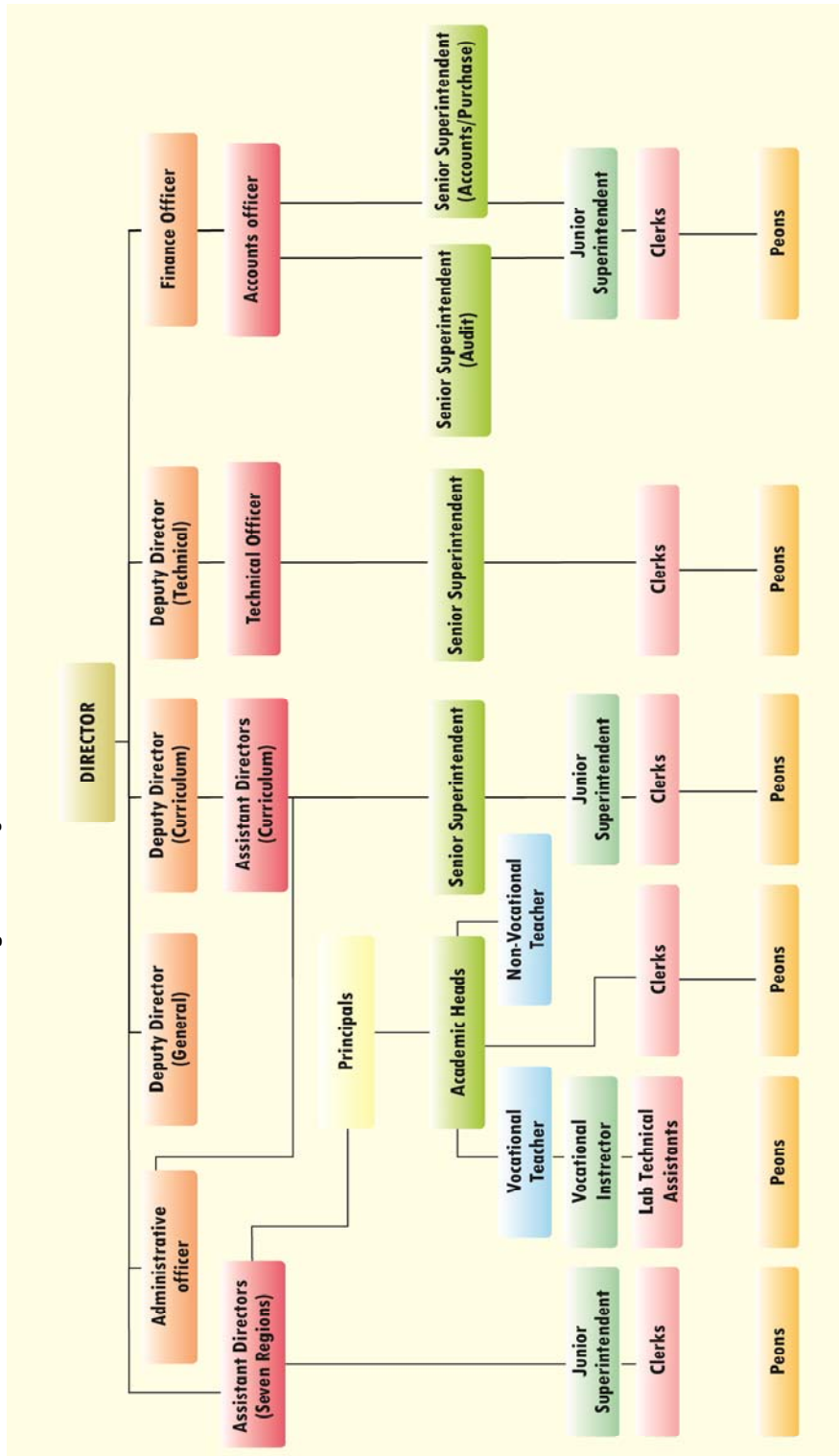
Source: (1) www.vhse.kerala.gov.in/ (2) Planning Board of Kerala (2002), “*Study on the Vocational Higher Secondary Education in Kerala*”, Government of Kerala, Thiruvananthapuram, 2002.

5.15 Organisational Structure

At the top of the organisational tree (*Figure: 5.1*) is the VHSE Director at the VHSE Directorate situated in Thiruvananthapuram. Under him are the Deputy Director (General), Deputy Director (Curriculum), and Deputy Director (Technical). The Deputy Director (Technical) is in charge of the VHSE examinations and under him is a Technical Officer and below him there are the superintendents and clerks at the Directorate. The Deputy Director (Curriculum) is in charge of the curriculum related activities and under him is an Assistant Director and below him there are superintendents and clerks. Then there is an Administrative Officer, a Finance Officer and, a Research Assistant, reporting directly to the director.

Reporting to the Director are the Assistant Directors of the seven Regional Offices situated at, Kollam, Chengannur, Ernakulam, Thrissur, Kuttippuram, Vadakara, and Payyannur. Under them there are the superintendents and clerks at the Regional Offices. Reporting to the Assistant Directors are the Principals of the Vocational Higher Secondary Schools. The Head Master of the High School Section is the Principal. To help him in academic matters there is an Academic Head, who is the senior most Vocational Teacher of the school. Then there are two categories of teachers VIZ, Vocational and Non-Vocational. Vocational Teachers handle the vocational subjects and Non-vocational Teachers handle the optional subjects, English and GFC. Under each vocational teacher there is a Vocational Instructor for conducting vocational practical classes and a Lab Technical Assistant to assist in the practical training in vocational subject. Then there is a clerk and a peon reporting to the principal. Peon post is sanctioned in schools having three or more batches only.

Figure 5.1 Organisational Chart of VHSE in Kerala



5.16 Conclusion

The Vocational Higher Secondary Education in Kerala is nearing its 30 years of existence in the State. The scheme covers almost the whole geographic area of the state and offers 42 different vocational courses. Quantity wise the scheme has made progress in the State, even though, the intake capacity is less than 10% of the total enrolment at the higher secondary level. Expansion of the scheme has slowed down in the last decade. However, it has a management structure as envisaged in the Centrally Sponsored Scheme of Vocational Education at the Higher Secondary Stage.



ANALYSIS AND PRESENTATION OF DATA

<i>Contents</i>	6.1 Introduction
	6.2 Socio - Economic Background (SEB) of Students and Pass Outs
	6.3 Awareness of Students, Pass Outs, Teachers, and Principals about VHSE
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	6.6 Entrepreneurship Profiles of Pass Outs and Students
	6.7 Nature and Rate of Higher Studies and Employment among the Pass Outs
	6.8 Conclusion

6.1 Introduction

A detailed analysis and presentation of the data collected for the study is given in this chapter. Data collected from students, pass outs, teachers and principals are analysed. The analysis has been carried out in accordance with the objectives of the study. As such, analysis of the socio-economic backgrounds of students and pass outs, awareness of students, pass outs, teachers and principals about VHSE, training and support facility statuses of VHS schools, academic achievements of students and pass outs in terms of their performance in the qualifying and VHSE examinations respectively, nature and rate of employment and higher studies of pass outs and the entrepreneurship profiles of students and pass outs have been done, taking one at a time. The chapter is divided into different sections. Each section is devoted to one of the above mentioned aspects. The socio-economic backgrounds of students and pass outs are analysed first.

SECTION I

6.2 Socio-Economic Backgrounds (SEB) of Students and Pass Outs

The general impression is that majority of those who pursue VHSE in India belong to poor Socio-Economic Backgrounds (ORG 1996)²⁴⁴. Socio-Economic Background (SEB) can influence the career development of an individual. The choices of institutions of education, nature of courses of higher education, decision regarding the stage at which to terminate education, when and where to take up employment, nature of employment, expected monetary benefit from the employment etc. can be influenced by the Socio-Economic Background of individuals. The main targets of the scheme of Vocational Higher Secondary Education in India are pupils who want to enter the world of work after the secondary stage of education to help their parents in income generation and those who don't want to pursue higher studies. These individuals are more likely to come from families with low Socio-Economic Backgrounds. So the Vocational Higher Secondary Education in India was actually designed as a terminal course without any vertical mobility as far as higher studies are concerned. But flexibility was given to States in its implementation. In Kerala a bifocal mode of implementation was adopted which provided opportunity for those who completing VHSE to go for higher studies. Thus the pass outs of VHSE in Kerala can either pursue higher studies or enter employment. The Socio-Economic Backgrounds of those who successfully complete VHSE is likely to have an impact on their future course of action with respect to higher studies and employment. So it is important to study the Socio-Economic Backgrounds of the students and pass outs of VHSE in Kerala and to know whether there is any significant relationship between the Socio-Economic Backgrounds and the intended future course of action of the

students and the rate of employment and higher studies of the pass outs. Agarwal's Socio-Economic Status Scale (SES 2005)²⁴⁵ as described in Chapter I has been used to study the Socio-Economic Backgrounds of the students and pass outs.

6.2.1 Socio-Economic Background of Students

The Socio-Economic Backgrounds of the 936 students selected for the study have been analysed. The mean SEB score is 31.45 with a standard deviation of 6.867 (Table: 6.1). The minimum score is 18 and the maximum score is 63 out of a maximum possible score of 100. The mean percentage score is also 31.45 which indicate a very low SEB of the population.

Table: 6.1 Mean Socio-Economic Background Score of Students

Mean	Mean Percentage Score	Standard Deviation	Minimum	Maximum
31.45	31.45	6.867	18	63

To test whether the sample information that is observed in the above table (Table: 6.1) holds for the population or really the Socio-Economic Background Score of Students is very poor or not as a whole, the hypothesis is formulated that the mean Socio-Economic Background Score of Students is 50 (50% of the maximum score) against it is less than 50. Accordingly the following hypothesis is tested.

Testing of Hypothesis

H_0 : The mean Socio-Economic Background (SEB) Score of the students of the VHS schools in Kerala is 50 on the Socio-Economic Status Scale used in this study.

H_1 : The mean Socio-Economic Background (SEB) Score of the students of the VHS schools in Kerala is less than 50 on the Socio-Economic Status Scale used in this study.

The above hypothesis is tested using the one sample z-test. *The results of the one sample z-test gives a z-value of -82.626 with a p-value of <0.001 at 5% significance level which is less than 0.05 and since the z-value is less than -1.645, the null hypothesis is rejected and the alternative hypothesis is accepted that the Mean Socio-economic Background Score of the students is significantly lower than the test value of 50 (Table: 6.2).*

Table: 6.2 One Sample z-test of the Mean Socio-economic Score of Students

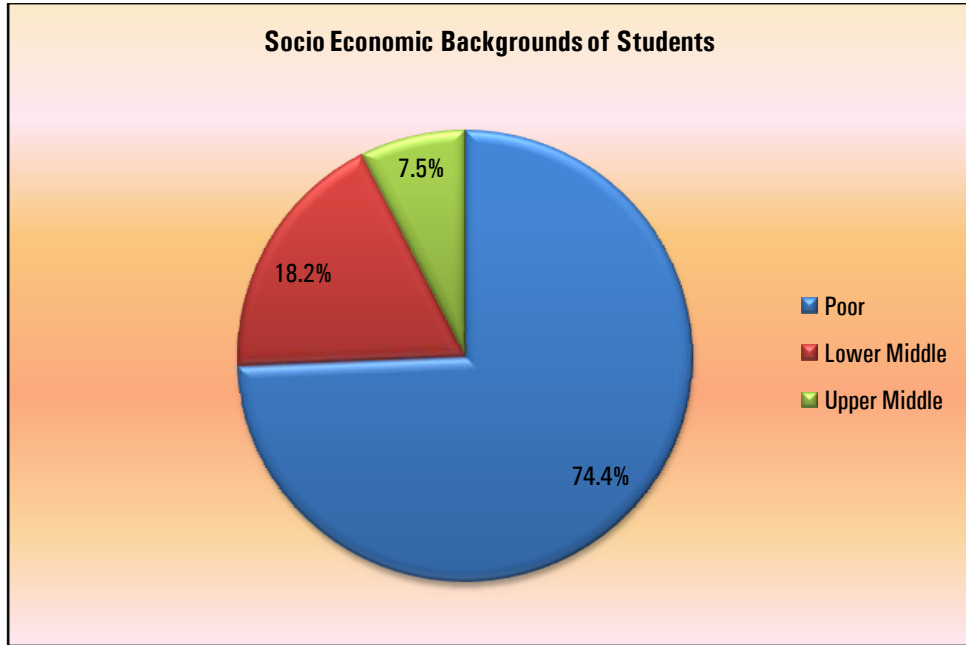
z	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
			Lower	Upper
-82.626	< 0.001	-18.55	-18.99	-18.11

The *table: 6.3* shows the Socio-Economic Background categorisation of the students. 74.4% come from families with 'poor' SEB, 18.2% come from families with 'lower middle' SEB and 7.5% come from families with 'upper middle' SEB. It is clear that a vast majority of the students belong to the 'poor' SEB category which is in accordance with the general impression. No one comes from 'high' and 'very high' SEB groups, indicating that students of higher SEB categories do not prefer VHSE (*Figure: 6.1*).

Table: 6.3 Socio-Economic Backgrounds of Students

Socio-Economic Background	Number of Students	Percent	Cumulative Percent
Poor	696	74.4	74.4
Lower Middle	170	18.2	92.5
Upper Middle	70	7.5	100.0
Total	936	100.0	

Figure: 6.1 Pie Chart Showing the Socio-Economic Backgrounds of Students



Further analysis has been made to find out the differences in the SEB of the students with respect to variables like gender, type of school, location of school, district and course.

The *table: 6.4* given below shows the mean scores, mean percentage scores, standard deviations and the results of the z-test of the SEB scores of male and female students. The mean score for the males is 32.51 and that for the females is 30.84 out of a maximum possible score of 100 with standard deviations of 7.41 and 6.46 respectively. The mean percentage score is 32.51 for males and 30.84 for females and it is clear that the Socio-Economic Background scores are low for both the categories. The mean score is higher for males when compared with females, which is further established by the *independent sample z-test with a z-value of 3.608 and a p-value of <0.001 at 5% significance level*. Since the p-value is less than 0.05, it is established that there is significant difference between the SEB scores of male and female

students and since the calculated z-value is higher than 1.645 it can also be concluded that the Socio-Economic Backgrounds of the male students pursuing VHSE is significantly higher than that of the female students.

Table: 6.4 Independent Sample z-test Based on the Socio-Economic Background Scores of Male and Female Students

Gender	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Male	32.51	32.51	7.41	3.608	< 0.001
Female	30.84	30.84	6.46		

The *table: 6.5* given below shows that the mean SEB score of the students from private schools is 31.74 and that from government schools is 31.32 with respective standard deviations of 7.40 and 6.61. The respective mean percentage scores are 31.74 and 31.32. The Socio-Economic Backgrounds of the students from both private and government schools are low as indicated by the low mean percentage scores. There is not much difference between the mean scores of students from private and government schools which is further established by the results of the *independent sample z-test that shows a z-value of 0.859 and a p-value of 0.390 at 5% significance level*. Since the p-value is higher than 0.05, it is concluded that there is no significant difference between the SEB scores of students from private and government schools.

Table: 6.5 Independent Sample z-test Based on the Socio-Economic Background Scores of Students from Private and Government Schools

Type of School	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Private	31.74	31.74	7.40	0.859	0.390
Government	31.32	31.32	6.61		

The *table: 6.6* shows the mean scores, mean percentage scores and standard deviations of the SEB scores of students from different districts. The mean is 31.55 for Kollam, 31.21 for Thrissur and 31.60 for Kozhikkode out of a maximum possible score of 100 with standard deviations of 7.11, 6.30 and 7.19 respectively. The mean percentage score is 31.55 for Kollam, 31.21 for Thrissur and 31.60 for Kozhikkode. The mean percentage scores are low for students from all the three districts indicating poor Socio-Economic Backgrounds. It is clear that there is not much difference among the mean SEB scores of students from different districts. Further analysis was done using One-Way ANOVA to establish the findings. The results of the One-Way ANOVA given below show (*Table: 6.7*) an F-value of 0.280 with a p-value of 0.756 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the SEB scores of students from different districts.

Table: 6.6 Mean Socio-Economic Background Scores of Students from Different Districts

District		Socio-Economic Background Score
Kollam	Mean	31.55
	Mean % Score	31.55
	Std. Deviation	7.11
Thrissur	Mean	31.21
	Mean % Score	31.21
	Std. Deviation	6.30
Kozhikkode	Mean	31.60
	Mean % Score	31.60
	Std. Deviation	7.19
Total	Mean	31.45
	Mean % Score	31.45
	Std. Deviation	6.87

Table: 6.7 ANOVA Based on the Socio-Economic Background Scores of Students from Different Districts

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Socio-Economic Background Score	Between Groups	26.448	2	13.224	0.280	0.756
	Within Groups	44069.484	933	47.234		
	Total	44095.932	935			

The *table: 6.8* shows that the mean SEB scores of students from schools located in Panchayath is 31.44, that in Municipality is 32.36 and that in Corporation is 31.12 with respective standard deviations of 6.87, 6.80 and 6.90. The respective mean percentage scores are 31.44, 32.36 and 31.12. The Socio-Economic Backgrounds of students from schools located in all the three localities are low as evident from the low mean percentage scores.

Table: 6.8 Mean Socio-Economic Background Scores of Students from Different Localities

Location of School		Socio-Economic Background Score
Panchayath	Mean	31.44
	Mean % Score	31.44
	Std. Deviation	6.87
Municipality	Mean	32.36
	Mean % Score	32.36
	Std. Deviation	6.80
Corporation	Mean	31.12
	Mean % Score	31.12
	Std. Deviation	6.90
Total	Mean	31.45
	Mean % Score	31.45
	Std. Deviation	6.87

It is clear that there is not much difference among the mean SEB scores of students from schools located in different localities. Further analysis was done using One-Way ANOVA. The results of the One-Way ANOVA given in *Table: 6.9*. It shows an F-value of 0.822 with a p-value of 0.440 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the SEB scores of students from schools located in different localities

Table: 6.9 ANOVA Based on the Socio-Economic Background Scores of Students from Schools Located in Different Localities

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Socio-Economic Background Score	Between Groups	77.602	2	38.801	0.822	0.440
	Within Groups	44018.330	933	47.179		
	Total	44095.932	935			

It is important to find out whether there is any difference in the future plans of students with different Socio-economic Backgrounds. A glimpse of the future plans of the students is given below. The *table: 6.10* shows that 653 students (69.8% of the total respondents) want to go for higher studies. 99 students (10.6%) want to engage in wage employment and 57 (6.1%) want to do self employment. These two (wage employed and self employed) together constitute 16.7% i.e. the percentage of students who want to engage in some sort of employment. 127 (13.6% of the total respondents) respondents are yet take a decision on that. The situation is better when compared with the pass outs, 89.1% of whom wanted to go for higher studies (Refer table: 186). Still it is very clear that majority of the students want to pursue higher studies which is not the ideal sort of response expected considering the objectives of the programme.

Table: 6.10 Future Plans of Students

Future Plan	Frequency	Percent	Cumulative Percent
Higher Study	653	69.8	69.8
Self Employment	57	6.1	75.9
Wage Employment	99	10.6	86.4
Not Decided	127	13.6	100.0
Total	936	100.0	

The *table: 6.11* shows the future plans of students from different socio-economic backgrounds. Majority of the students from all the three SEB categories want to go for higher studies. A higher percentage of students (78.6%) from 'upper middle' SEB want to go for higher studies (HS) when compared with those from 'poor' (69.8%) and 'lower middle' (65.9%) SEB. No one from the 'upper middle' SEB want to do self employment (SE). Only 5.7% of students from the 'poor' SEB and 10.0% students from the 'lower middle' SEB want to do self employment. Not much difference is seen among the SEB categories with respect to wage employment. The percentages of students who are yet to take a decision decrease as one move from the lower SEB categories to higher SEB categories. But the result of *the chi-square test shows a chi-square value of 5.603 with p- value of 0.231* that is above 0.05 which indicates that there are no significant differences in the future plans of students from different Socio-economic Backgrounds.

Table: 6.11 Future Plans of Students from Different Socio-economic Backgrounds

SEB		Future Plan				Total
		Higher Studies	Self Empt.	Wage Empt.	Not Decided	
Poor	Count	486	40	71	99	696
	% within SEB Category	69.8%	5.7%	10.2%	14.2%	100.0%
Lower	Count	112	17	19	22	170
Middle	% within SEB Category	65.9%	10.0%	11.2%	12.9%	100.0%
Upper Middle	% within SEB Category	55	-	9	6	70
		78.6%	-	12.9%	8.6%	100.0%
Total	Count	653	57	99	127	936
	% within Total	69.8%	6.1%	10.6%	13.6%	100.0%

6.2.2 Socio-Economic Background of Pass Outs

The Socio-Economic Background (SEB) of the 396 pass outs selected for the study has been analysed. The mean SEB score is 34.14 with a standard deviation of 7.312 (Table: 6.12). The minimum score is 21 and the maximum score is 63 out of a maximum possible score of 100. The mean percentage score is also 34.14 indicating that the SEB of the pass outs is low.

Table: 6.12 Mean Socio-Economic Background Score of Pass Outs

Mean	Mean Percentage Score	Standard Deviation	Minimum	Maximum
34.14	34.14	7.312	21	63

To test whether the sample information observed in the above table (Table:6.12) holds for the population or really the Socio-Economic Background Score of pass outs is very poor or not as a whole, the hypothesis is formulated that the mean Socio-Economic Background Score of pass outs is 50 against it is less than 50. Accordingly the following hypothesis is tested.

Testing of Hypothesis

H_0 : *The mean Socio-Economic Background (SEB) Score of the pass outs of the VHS schools in Kerala is 50 on the Socio-Economic Status Scale used in this study.*

H_1 : *The mean Socio-Economic Background (SEB) Score of the pass outs of the VHS schools in Kerala is less than 50 on the Socio-Economic Status Scale used in this study.*

The above hypothesis is tested using the one sample z-test. *The results of the one sample z-test gives a z-value of -43.164 with a p-value of <0.001 at 5% significance level which is less than 0.05 and since the z-value is less than -1.645, the null hypothesis is rejected and the alternative hypothesis that the Mean Socio-economic Background Score of the pass outs is significantly less than the test value of 50 is accepted (Table: 6.13).*

Table: 6.13 One Sample z-test of the Mean Socio-economic Background Score of Pass Outs

z	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
			Lower	Upper
-43.164	< 0.001	-15.86	-16.58	-15.14

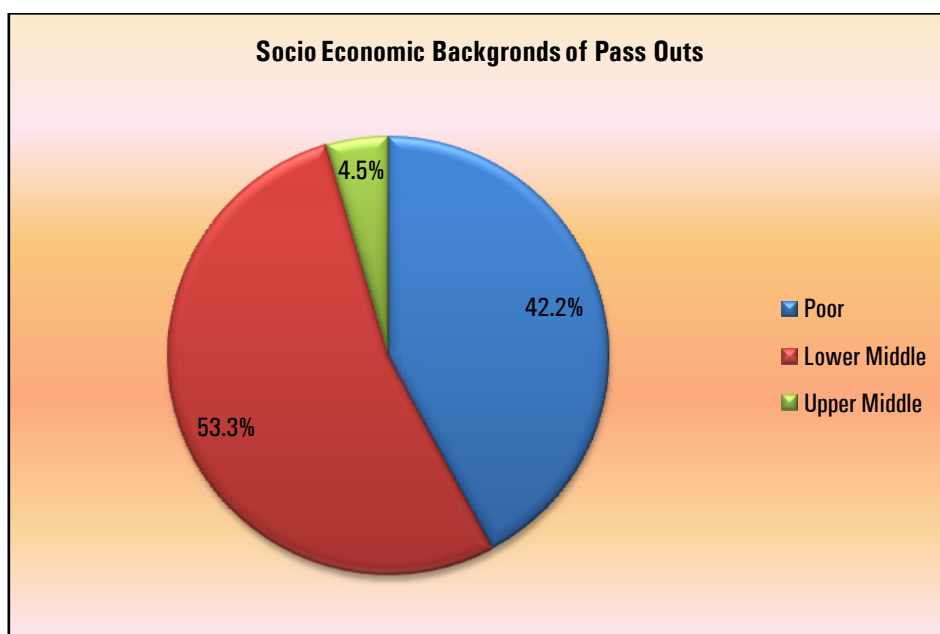
The *table: 6.14* shows the Socio-Economic Background categorisation of the pass outs. 42.2% come from families with 'poor' SEB, 53.3% come from families with 'lower middle' SEB and 4.5% come from families with 'upper middle' SEB. Similar to the students, no one comes from 'high' and 'very high' SEB groups. It is clear that majority of the pass outs belong to the 'lower middle' SEB category. In the case of students majority (74.4%) belonged to the 'poor' category (*Refer table: 6.3*). This may be due to the fact that some of the pass outs are employed and there are more earning members in the family of

pass outs when compared with that of students. But it is clear that a vast majority of the pass outs still belong to the lower SEB categories. The pie chart makes it clearer (*Figure: 6.2*).

Table: 6.14 Socio-Economic Backgrounds of Pass Outs

Socio-Economic Background	Number of Pass Outs	Percent	Cumulative Percent
Poor	167	42.2	42.2
Lower Middle	211	53.3	95.5
Upper Middle	18	4.5	100.0
Total	396	100.0	

Figure: 6.2 Pie Chart Showing the Socio-Economic Backgrounds of Pass Outs



Further analysis has been made to find out the differences in the SEB of pass outs with respect to gender, age group, type of school, location of school, district, different present engagements and course.

The *table: 6.15* given below shows the mean scores, mean percentage scores, standard deviations and the results of the z-test of the SEB scores of male and female pass outs. The mean score for males is 32.03 and that for the females is 35.95 out of a maximum possible score of 100 with standard deviations of 7.09 and 7.02 respectively. The mean percentage score is 32.03 for males and 35.95 for females indicating that the Socio-Economic Backgrounds are low for both the categories. The mean is lower for males when compared with females which is further established by the *independent sample z-test with a z-value of -5.506 and a p-value of <0.001 at 5% significance level*. Since the p-value is less than 0.05, it is established that there is significant difference between the SEB scores of male and female pass outs and since the calculated z-value is lower than -1.645 it can be concluded that the Socio-Economic Background of the female pass outs is significantly higher than that of the male pass outs. This is just opposite to that of students where males have higher SEB scores.

Table: 6.15 z-test Based on the Socio-Economic Background Scores of Male and Female Pass Outs

Gender	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Male	32.03	32.03	7.09	-5.506	< 0.001
Female	35.95	35.95	7.02		

The *table: 6.16* below shows that the mean SEB score of pass outs from private schools is 33.94 and that from government schools is 34.21 with respective standard deviations of 7.67 and 7.18. The respective mean percentage scores are 33.94 and 34.21. The Socio-Economic Backgrounds of pass outs from both private and government schools are low as indicated by the low mean percentage scores. There is not much difference between the mean

scores of pass outs from private and government schools which is further established by the *independent sample z-test* that shows a *z-value* of -0.325 and a *p-value* of 0.745 at 5% significance level. Since the *p-value* is more than 0.05, it is concluded that there is no significant difference between the SEB scores of pass outs from private and government schools.

Table: 6.16 z-test Based on the Socio-Economic Background Scores of Pass Outs from Private and Government Schools

Type of School	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Private	33.94	33.94	7.67	-0.325	0.745
Government	34.21	34.21	7.18		

The *table: 6.17* given below shows the mean scores, mean percentage scores and standard deviations of the SEB scores of pass outs from different districts. The mean is 34.01 for Kollam, 33.46 for Thrissur and 35.24 for Kozhikkode out of a maximum possible score of 100 with standard deviations of 7.21, 7.15 and 7.63 respectively. The mean percentage score is 34.01 for Kollam, 33.46 for Thrissur and 35.24 for Kozhikkode. The mean percentage scores are low for pass outs from all the three districts indicating poor Socio-Economic Backgrounds. It is clear that there is not much difference among the mean scores of pass outs from different districts. Further analysis was done using One-Way ANOVA to establish the initial findings.

The results of the One-Way ANOVA given below show an F-value of 1.719 with a *p-value* of 0.181 at 5% significance level (*Table: 6.18*). Since the *p-value* is higher than 0.05 it is concluded that there are no significant differences among the SEB scores of pass outs from different districts.

Table: 6.17 Mean Socio-Economic Background Scores of Pass Outs from Different Districts

District		Socio-Economic Background Score
Kollam	Mean	34.01
	Mean % Score	34.01
	Std. Deviation	7.21
Thrissur	Mean	33.46
	Mean % Score	33.46
	Std. Deviation	7.15
Kozhikkode	Mean	35.24
	Mean % Score	35.24
	Std. Deviation	7.63
Total	Mean	34.14
	Mean % Score	34.14
	Std. Deviation	7.31

Table: 6.18 ANOVA Based on the Socio-Economic Background Scores of Pass Outs from Different Districts

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Socio-Economic Background Score	Between Groups	183.188	2	91.594	1.719	0.181
	Within Groups	20938.174	393	53.278		
	Total	21121.361	395			

The *table: 6.19* below shows that the mean SEB score of pass outs from schools located in Panchayath is 34.02, that in Municipality is 31.52 and that in Corporation is 35.76 with respective standard deviations of 7.12, 5.33 and 8.42. The respective mean percentage scores are 34.02, 31.52 and 35.76. The Socio-Economic Backgrounds of pass outs from schools located in all the three localities are low as indicated by the low mean percentage scores. It is clear that the mean score of pass outs from Municipality is the lowest and that of the Corporation the highest. Some differences are seen in the mean SEB scores of

pass outs from schools located in different localities. Further analysis was done using One-Way ANOVA.

Table: 6.19 Mean Socio-Economic Background Scores of Pass Outs from Different Localities

Location of School		Socio-Economic Background Score
Panchayath	Mean	34.02
	Mean % Score	34.02
	Std. Deviation	7.12
Municipality	Mean	31.52
	Mean % Score	31.52
	Std. Deviation	5.33
Corporation	Mean	35.76
	Mean % Score	35.76
	Std. Deviation	8.42
Total	Mean	34.14
	Mean % Score	34.14
	Std. Deviation	7.31

Given below are the results of the One-Way ANOVA (*Table: 6.20*). It shows an F-value of 4.032 with a p-value of 0.018 at 5% significance level. Since the p-value is less than 0.05 it is concluded that there are significant differences among the SEB scores of pass outs from schools located in different localities. *Tukey HSD Multiple Comparison Test* was done to study paired differences.

Table: 6.20 ANOVA Based on the Socio-Economic Background Scores of Pass Outs from Different Localities

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Socio-Economic Background Score	Between Groups	424.667	2	212.333	4.032	0.018
	Within Groups	20696.694	393	52.663		
	Total	21121.361	395			

The results of the *Tukey HSD Multiple Comparison Test* show that the difference is significant only between Municipality and Corporation (*Table: 6.21*). There is no significant difference between Panchayath and Municipality and between Panchayath and Corporation. Significant difference is seen between Municipality and Corporation.

Table: 6.21 Tukey HSD Multiple Comparisons Based on the Socio-Economic Background Scores of Pass Outs from Different Localities

(I) Location of School	(J) Location of School	Mean Dif. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Panchayath	Municipality	2.51	1.333	0.145	-0.63	5.65
	Corporation	-1.73	0.945	0.160	-3.96	0.49
Municipality	Panchayath	-2.51	1.333	0.145	-5.65	0.63
	Corporation	-4.24(*)	1.519	0.015	-7.82	-0.67
Corporation	Panchayath	1.73	0.945	0.160	-0.49	3.96
	Municipality	4.24(*)	1.519	0.015	0.67	7.82

(*The mean difference is significant at the 0.05 level)

The *table: 6.22* below shows that the mean SEB scores of pass outs who are self employed is 36.00, who are wage employed is 33.00, those who are studying is 34.44 and those who are unemployed is 30.29, with respective standard deviations of 4.43, 8.50, 7.23 and 3.99. The respective mean percentage scores are 36.00, 33.00, 34.44 and 30.29. It can be seen that the Socio-Economic Backgrounds of pass outs from all the categories are low. The mean is highest for self employed category and lowest for unemployed category. Further analysis was done using One-Way ANOVA.

Table: 6.22 Mean Socio-Economic Background Scores of Pass Outs with Different Present Engagements

Present Engagements		Socio-Economic Background Score
Self Employed	Mean	36.00
	Mean % Score	36.00
	Std. Deviation	4.43
Wage Employed	Mean	33.00
	Mean % Score	33.00
	Std. Deviation	8.50
Studying	Mean	34.44
	Mean % Score	34.44
	Std. Deviation	7.23
Unemployed	Mean	30.29
	Mean % Score	30.29
	Std. Deviation	3.99
Total	Mean	34.14
	Mean % Score	34.14
	Std. Deviation	7.31

Given below are the results of the One-Way ANOVA (Table: 6.23). It shows an F-value of 2.208 with a p-value of 0.087 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the SEB scores of pass outs with different present engagements.

Table: 6.23 ANOVA Based on the Socio-Economic Background Scores of Pass Outs with Different Present Engagements

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Socio-Economic Background Score	Between Groups	351.036	3	117.012	2.208	0.087
	Within Groups	20770.325	392	52.986		
	Total	21121.361	395			

The above results of the analysis of the Socio-Economic Backgrounds of the students and pass outs show that majority of the students and pass outs come from 'poor' Socio-Economic Backgrounds. This is in accordance with the general impression that VHSE is pursued mainly by students from poor Socio-Economic Backgrounds. Since the scheme of VHSE mainly targets students from lower Socio-Economic Backgrounds, this is not so discouraging.

The policy makers believe that students from lower Socio-Economic Backgrounds are more likely to enter the world of work immediately after their schooling to help their parents in income generation. The scheme of VHSE is intended to help them by equipping these students with job related skills. But the study later reveals (*Section VI*) that in the state of Kerala there is no difference in the rate of employment and higher studies of pass outs from different Socio-Economic Backgrounds and majority of the pass outs pursue higher studies irrespective of their Socio-Economic Backgrounds (*Refer Table: 6.216*).

SECTION II

6.3 Awareness of Students, Pass Outs, Teachers, and Principals about VHSE

Proper awareness regarding the various aspects of the VHSE programme like its goals and objectives, mode of implementation, training strategies and higher study and employment options among the different stake holders of the programme is crucial to its success. Lack of proper awareness can result in the loss of benefits of the programme to the beneficiaries and can tarnish the image of the programme. Lack of awareness among stake holders has been identified as a major problem faced by the VHSE in India ORG, (1996)²⁴⁶. Analysis of the awareness of the students, pass outs, teachers, and principals regarding the various aspects of VHSE such as the goals and objectives of VHSE, terminal

course option, apprenticeship training, higher study options and employment opportunities have been done in the following paragraphs. The awareness scale described in Chapter I has been used for this purpose.

6.3.1 Awareness of Students and Pass Outs

Awareness regarding the goals and objectives of VHSE is a basic requirement for all the stake holders of VHSE, especially students and pass outs. Lack of proper awareness can result in students without real interest in the trade and those with the only objective of pursuing higher studies joining the programme and thus in effect diluting the objectives of the programme. This can also hamper their academic progress. Eventually the programme will be viewed as a transition stage to higher studies. Therefore it is important to know the awareness of the students and pass outs about the goals and objectives of VHSE. The *table: 6.24* below shows that 83.5% of the students and 89.6% of the pass outs are not aware about the goals and objectives of VHSE. The awareness of the students is little bit better than that of the pass outs, but overall the awareness is very low. Some efforts need to be put in for creating proper awareness regarding the goals and objectives of VHSE among those wishing to join VHSE and those who are pursuing VHSE. The VHSE department, the career guidance and counselling cells in VHS schools and VHSE teachers can do a lot in creating this awareness.

Table: 6.24 Awareness of Students and Pass Outs Regarding the Goals and Objectives of VHSE

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	154	16.5	41	10.4
Not Aware	782	83.5	355	89.6
Total	936	100.0	396	100.0

The VHSE programme in Kerala is *bifocal* in nature allowing the students to study optional subjects along with the vocational subjects, thus making them eligible for higher studies. Although the course can be pursued as a terminal course without studying the optional subjects, no one is known to do that recently. This has virtually transferred VHSE into a transition stage to higher studies. Therefore it is of interest to know the awareness of the students and pass outs regarding this option. The *table: 6.25* shows that only 24.1% of the students and 8.15% of the pass outs are aware about this aspect. The awareness of the students is better than that of the pass outs, but overall the awareness is low. This being the fact it is important to know the willingness of the students and pass outs to pursue VHSE as a terminal course if they were given proper awareness and guidance. The *table: 6.26* shows that 39.9% of the students and 25.3% of the pass outs would have done so. Although majority are unwilling, it is evident that by creating more awareness and providing proper guidance, it would be possible to attract more students to join a terminal VHSE course which would also reduce their burden of studying three optional subjects and help them in concentrating more on the vocational subject and developing more job related skills. Moreover having lost the eligibility for higher studies, they would have taken up some sort of employment immediately after VHSE.

Table: 6.25 Awareness of Students and Pass Outs about the Terminal Option of VHSE in Kerala

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	226	24.1	32	8.1
Not Aware	710	75.9	364	91.9
Total	936	100.0	396	100.0

Table: 6.26 Willingness of Students and Pass Outs to Pursue a Terminal VHSE Course

Willingness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Willing	373	39.9	100	25.3
Not Willing	563	60.1	296	74.7
Total	936	100.0	396	100.0

Apprenticeship training is one of the major post-course training strategies of the VHSE programme. Records show that the incidence of apprenticeship training has been very low among the VHSE pass outs. So it is worthwhile to know the awareness of the students and pass outs regarding this training strategy. The *table: 6.27* shows that 80.8% of the students and 90% of the pass outs are unaware about apprenticeship training. The awareness of the students is better than that of the pass outs, but overall the awareness is low. So the students and pass outs should be made more aware regarding apprenticeship training. The career guidance and counselling cells in the VHS schools and VHSE teachers can play a big role in this.

Table: 6.27 Awareness of Students and Pass Outs about Apprenticeship Training

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	180	19.2	40	10.0
Not Aware	756	80.8	356	90.0
Total	936	100.0	396	100.0

Awareness regarding the existence of a training strategy like apprenticeship training alone is not enough. The students and pass outs should know the procedures for getting apprenticeship training. They should know whom to approach, how to approach, and when to approach etc. This aspect was also probed and the *table: 6.28* below shows that 99.6% of the students and 96.7% of the pass outs are not aware about this aspect. The awareness of the

pass outs is little bit better than that of the students, but overall the awareness is low. This is an important issue that needs to be addressed immediately. Again the career guidance and counselling cells and teachers of the VHS schools can play a big role in creating awareness regarding apprenticeship training.

Table: 6.28 Awareness of Students and Pass Outs about the Procedures for Getting Apprenticeship Training

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	4	0.4	13	3.3
Not Aware	932	99.6	383	96.7
Total	936	100.0	396	100.0

Although the opportunities for apprenticeship training are limited, it will be interesting to know the willingness from the part of eligible candidates to undergo apprenticeship training. This aspect was enquired and the *table: 6.29* shows that 56.6% of the students and 23% of the pass outs are willing to undergo apprenticeship training. The lower percentage for pass outs is understandable because majority of them are pursuing their higher studies. Majority of the students are willing to undergo apprenticeship which is a good sign.

Table: 6.29 Willingness of Students and Pass Outs to Undergo Apprenticeship Training

Willingness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Willing	530	56.6	91	23.0
Not Willing	406	43.4	305	77.0
Total	936	100.0	396	100.0

School-Industry Linkage is an essential requirement for the effective conduct of the VHSE programme. Most of the stake holders seem to be unaware about this. Awareness about this aspect will help the admission seekers

in selecting the schools which have established such linkages with reputed firms which will eventually force other school authorities also to follow the suit and establish such linkages. The table below (*Table: 6.30*) shows that none of the students or pass outs is aware about this. So this awareness needs to be created among the admission seekers, students, and pass outs. The department should take in initiative in creating this awareness.

Table: 6.30 Awareness of Students and Pass Outs about School-Industry Linkage

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	0	0.0	0	0.0
Not Aware	936	100.0	396	100.0
Total	936	100.0	396	100.0

Since the VHSE programme in Kerala provides opportunity for pass outs to go for higher studies, it is important to know whether the students and pass outs have proper awareness regarding the higher study options in the area of their VHSE trade. *Table: 6.31* shows that 62.7% of the students and 52.3% of the pass outs are not aware of the various higher study options. The awareness of the pass outs is better than that of the students, but overall the awareness is low. So there is need to create more awareness among the students and pass outs regarding the higher study options. Career guidance and counselling cells of the VHS schools should be vested with the responsibility of carrying out this task

Table: 6.31 Awareness of Students and Pass Outs Regarding Higher Study Options

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	349	37.3	189	47.7
Not Aware	587	62.7	207	52.3
Total	936	100.0	396	100.0

Knowledge regarding the nature and availability of appropriate job openings for a person pursuing VHSE need not be overemphasised. Adequate awareness during the course of the study helps him to plan his career and proceed accordingly. The *table: 6.32* shows that 73.7% of the students and 73.5% of the pass outs are unaware about the employment options. There is not much difference between the awareness of the students and pass outs, but overall the awareness is low. This finding stresses the need for creating awareness among the students and pass outs regarding the employment opportunities available to them. So there is an urgent need to create awareness among the students and pass outs regarding the nature and availability of appropriate job opportunities. Once again it is the career guidance and counselling cell and the teachers of the VHS schools who can do a lot in this regard.

Table: 6.32 Awareness of Students Regarding Employment Options

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	246	26.3	105	26.5
Not Aware	690	73.7	291	73.5
Total	936	100.0	396	100.0

Awareness regarding the nature and availability of assistance and guidance for starting self employment is very important for any one pursuing VHSE. The *table: 6.33* shows that 97.4% of the students and 94.2% of the pass outs are unaware of the nature and availability of the different self employment assistances and guidance. The awareness of the pass outs is little bit higher than that of the students but overall the awareness is very low. This situation can have a negative impact on their self employment prospects. So there is a need to include self employment guidelines in their curriculum. The career guidance and counselling cells in the VHS schools should play a very important role in helping the students in this regard.

Table: 6.33 Awareness of Students and Pass Outs Regarding Self Employment Assistances and Guidance

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Aware	24	2.6	23	5.8
Not Aware	912	97.4	373	94.2
Total	936	100.0	396	100.0

The awareness scores obtained on the awareness scale of the 936 students and 396 pass outs selected for the study has been analysed. The mean awareness score for students is 1.29 with a standard deviation of 1.375 and that for pass outs is 1.07 with a standard deviation of 1.480 (*Table: 6.34*). The mean percentage score is 16.13 for students and 13.38 for pass outs indicating that the awareness of both the students and pass outs is very low.

Table: 6.34 Mean Awareness Scores of Students and Pass Outs

Stake Holder	Mean	Mean Percentage Score	Standard Deviation
Students	1.29	16.13	1.375
Pass Outs	1.07	13.38	1.480

To test whether the Awareness Scores of the students are really very poor or not as a whole, the hypothesis is formulated that the mean Awareness Score of the students and pass outs is 4 (50% of the maximum score) against it is less than 4. Accordingly the following hypothesis is tested.

Testing of Hypothesis

H_0 : *The mean Awareness Score of the students of the VHS schools in Kerala is 4 on the Awareness Scale used in this study.*

H_1 : *The mean Awareness Score of the students of the VHS schools in Kerala is less than 4 on the Awareness Scale used in this study.*

The above hypothesis is tested using the one sample z-test. *The results of the one sample z-test gives a z-value of -60.175 with a p-value of <0.001 at 5%*

significance level which is less than 0.05 and since the z-value is less than -1.645, the null hypothesis is rejected and the stated hypothesis that the Mean Awareness Score of the students is significantly lower than the test value of 4 is accepted (Table: 6.35).

Testing of Hypothesis

H_0 : The mean Awareness Score of the pass outs of the VHS schools in Kerala is less than 4 on the Awareness Scale used in this study.

H_1 : The mean Awareness Score of the pass outs of the VHS schools in Kerala is 4 on the Awareness Scale used in this study.

The above hypothesis is tested using the one sample z-test. The results of the one sample z-test gives a z-value of -39.960 with a p-value of <0.001 at 5% significance level which is less than 0.05 and since the z-value is less than -1.645, the null hypothesis is rejected and the stated hypothesis that the Mean Awareness Score of the pass outs is significantly lower than the test value of 4 is accepted (Table: 6.35).

Table: 6.35 One Sample z-test of the Mean Awareness Scores of Students and Pass Outs

Stake Holder	z	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
Students	-60.175	< 0.001	-2.71	-2.79	-2.62
Pass Outs	-39.960	< 0.001	-2.93	-3.07	-2.78

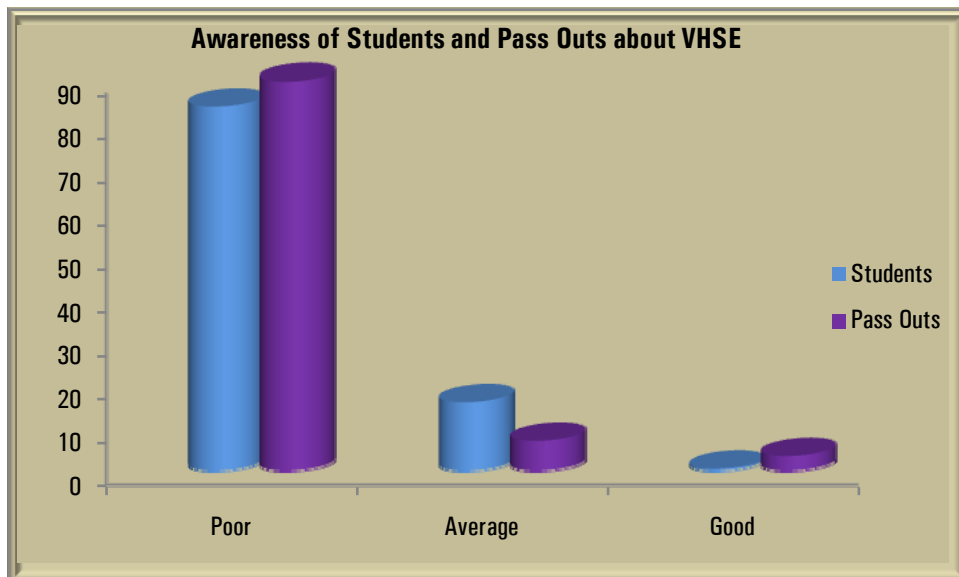
The table: 6.36 shows the overall awareness of the students and pass outs arrived at based on the categorisation of the awareness score. It can be seen that 83.9% of the students and 89.9% of pass outs have only poor awareness while 15.7% of students and 6.8% of pass outs have average awareness. Only 0.4% of students and 3.3% of pass outs have good awareness. It is clear that

the awareness of students and pass outs is very low and some immediate measures should be taken to improve this. The VHSE department should take initiatives in this regard. This can be implemented through the career guidance and counselling cells and teachers, especially Vocational and General Foundation Course (GFC) teachers. The cylinder chart (Figure: 6.3) gives a better picture.

Table: 6.36 Overall Awareness of Students and Pass Outs about VHSE

Awareness	Students		Pass Outs	
	Frequency	Percent	Frequency	Percent
Poor	785	83.9	354	89.9
Average	147	15.7	29	6.8
Good	4	0.4	13	3.3
Total	936	100.0	396	100.0

Figure: 6.3 Cylinder Chart Showing the Awareness of Students and Pass Outs about VHSE



Further analysis has been made to find out the differences in the awareness of students and pass outs with respect to variables like gender, age

group, training and support facility status of the school, type of school, district, location of school, course and Socio-Economic Backgrounds.

The *table: 6.37* given below shows the mean scores, mean percentage scores, standard deviations and the results of the z-test of the awareness scores of male and female students and pass outs.

In the case of students, the mean score for males is 1.47 and that for the females is 1.19 out of a maximum possible score of 8 with standard deviations of 1.468 and 1.309 respectively. The mean percentage score is 18.38 for males and 14.88 for females indicating that awareness is very low for both the categories. The mean score is higher for males when compared with females, which is further established by the *independent sample z-test with a z-value of 2.948 and a p-value of 0.003 at 5% significance level*. Since the p-value is less than 0.05, it is established that there is significant difference between the awareness scores of male and female students and since the calculated z-value is higher than 1.645 it can also be concluded that the awareness of the male students is significantly higher than that of the female students.

In the case of pass outs the mean score for males is 1.09 and that for the females is 1.06 out of a maximum possible score of 8 with standard deviations of 1.547 and 1.423 respectively. Compared with students the mean scores are little bit low for pass outs and as different from the students, there is not much difference between the scores of male and female pass outs. The mean percentage score is 13.63 for males and 13.25 for females indicating that the awareness is are very low for both the categories. The observation that there is not much difference between the mean scores of males and females which is further established by the *independent sample z-test with a z-value of 0.245 and a p-value of 0.807 at 5% significance level*. Since the p-value is higher than

0.05, it is concluded that there is no significant difference between the awareness scores of male and female pass outs.

Table: 6.37 z-test Based on the Awareness Scores of Male and Female Students and Pass Outs

Stake Holder	Gender	Mean	Mean % score	Std. Deviation	z	Sig. (2-tailed)
Students	Male	1.47	18.38	1.468	2.948	0.003
	Female	1.19	14.88	1.309		
Pass Outs	Male	1.09	13.63	1.547	0.245	0.807
	Female	1.06	13.25	1.423		

The *table: 6.38* given below shows the mean scores, mean percentage scores, standard deviations and the results of the z-test of the awareness scores of students and pass outs from schools with different Training and Support Facility statuses.

In the case of students from schools with ‘poor’ Training and Support Facility status, the mean awareness score is 1.42 and that from schools with ‘average’ Training and Support Facility status is 1.25 with respective standard deviations of 1.397 and 1.364. The respective mean percentage scores are 17.75 and 15.63. The awareness of students from both categories of schools with different Training and Support Facility statuses are low as indicated by the low mean percentage scores. The mean score is slightly higher for students from schools with ‘poor’ Training and Support Facility status when compared with those from schools with ‘average’ Training and Support Facility status. But the results of the *independent sample z-test* show a *z-value of 1.735* and a *p-value of 0.083* at 5% significance level. Since the p-value is more than 0.05, it is concluded that there is no significant difference between the awareness scores of students from schools with ‘poor’ and ‘average’ Training and Support Facility statuses.

In the case of pass outs from schools with ‘poor’ Training and Support Facility status, the mean awareness score is 1.01 and that from schools with ‘average’ Training and Support Facility status is 1.09 with respective standard deviations of 1.246 and 1.541. The respective mean percentage scores are 12.63 and 13.63. The awareness of pass outs from both categories of schools with different Training and Support Facility statuses are low as indicated by the low mean percentage scores. There is not much difference between the mean scores of pass outs from schools with different Training and Support Facility statuses which is further established by the *independent sample z-test with a z-value of -0.500 and a p-value of 0.618 at 5% significance level*. Since the p-value is more than 0.05, it is concluded that there is no significant difference between the awareness scores of pass outs from schools with different Training and Support Facility statuses.

The above findings are not surprising as it can be found later in this analysis that the Career Guidance and Counselling activities, which have a major role in the creation of awareness, are ‘poor’ or ‘very poor’ in all the VHS schools selected for this study.

Table: 6.38 z-test Based on the Awareness Scores of Students and Pass Outs from Schools with different Training and Support Facility Statuses

Stake Holder	TSF Status	Mean	Mean % score	Std. Deviation	z	Sig. (2-tailed)
Students	Poor	1.42	17.75	1.397	1.735	0.083
	Average	1.25	15.63	1.364		
Pass Outs	Poor	1.01	12.63	1.246	-0.500	0.618
	Average	1.09	13.63	1.541		

The *table: 6.39* given below shows the mean scores, mean percentage scores, standard deviations and the results of the z-test of the awareness scores of students and pass outs from private and government schools.

In the case of students from private schools the mean awareness score is 1.42 and that from government schools is 1.24 with respective standard deviations of 1.445 and 1.339. The respective mean percentage scores are 17.75 and 15.50. The awareness of students from both private and government schools are low as indicated by the low mean percentage scores. The mean score is slightly higher for students from private schools when compared with those from government schools. But the results of the *independent sample z-test* show a *z-value* of 1.913 and a *p-value* of 0.056 at 5% significance level. Since the *p-value* is more than 0.05, it is concluded that there is no significant difference between the awareness scores of students from private schools and government schools.

In the case of pass outs from private schools the mean awareness score is 1.06 and that from government schools is 1.08 with respective standard deviations of 1.420 and 1.504. The respective mean percentage scores are 13.25 and 13.50. The awareness of pass outs from both private and government schools are low as indicated by the low mean percentage scores. There is not much difference between the mean scores of pass outs from private and government schools which is further established by the *independent sample z-test* with a *z-value* of -0.151 and a *p-value* of 0.880 at 5% significance level. Since the *p-value* is more than 0.05, it is concluded that there is no significant difference between the awareness scores of pass outs from private and government schools.

Table: 6.39 z-test Based on the Awareness Scores of Pass Outs from Private and Government Schools

Stake Holder	Type of School	Mean	Mean % score	Std. Deviation	z	Sig. (2-tailed)
Students	Private	1.42	17.75	1.445	1.913	0.056
	Government	1.24	15.50	1.339		
Pass Outs	Private	1.06	13.25	1.420	-0.151	0.880
	Government	1.08	13.50	1.504		

The *table: 6.40* given below shows the mean scores, mean percentage scores and standard deviations of the awareness scores of students and pass outs from different districts.

For students, the mean score is 1.26 for Kollam, 1.53 for Thrissur and 1.01 for Kozhikkode out of a maximum possible score of 8 with standard deviations of 1.394, 1.359 and 1.304 respectively. The mean percentage score is 15.75 for Kollam, 19.13 for Thrissur and 12.63 for Kozhikkode. The mean percentage scores are low for students from all the three districts indicating the poor awareness. It is clear that the mean score is higher for Thrissur when compared with the other two districts. Further analysis was done using One-Way ANOVA.

For pass outs, the mean score is 1.08 for Kollam, 0.99 for Thrissur and 1.16 for Kozhikkode out of a maximum possible score of 8 with standard deviations of 1.454, 1.508 and 1.146 respectively. The mean percentage score is 13.50 for Kollam, 12.36 for Thrissur and 14.50 for Kozhikkode. The mean percentage scores are low for pass outs from all the three districts indicating the poor awareness. It is clear that the mean score is higher for Kozhikkode when compared with the other two districts. Further analysis was done using One-Way ANOVA.

Table: 6.40 Mean Awareness Scores of Students and Pass Outs from Different Districts

	District	Students	Pass Outs
Kollam	Mean	1.26	1.08
	Mean % Score	15.75	13.50
	Std. Deviation	1.394	1.454
Thrissur	Mean	1.53	0.99
	Mean % Score	19.13	12.36
	Std. Deviation	1.359	1.508
Kozhikkode	Mean	1.01	1.16
	Mean % Score	12.63	14.50
	Std. Deviation	1.304	1.146
Total	Mean	1.29	1.07
	Mean % Score	16.13	13.38
	Std. Deviation	1.375	1.480

The results of the One-Way ANOVA for students given below show an F-value of 9.142 with a p-value of <0.001 at 5% significance level (Table: 6.41). Since the p-value is less than 0.05 it is concluded that there are significant differences in the awareness scores of students from different districts. *Tukey HSD Multiple Comparison Test* was done to study paired differences.

For pass outs the F-value is 0.373 with a p-value of 0.689 at 5% significance level. Since the p-value is higher than 0.05, it is concluded that there are no significant differences in the awareness scores of pass outs from different districts.

Table: 6.41 One-Way ANOVA of the Awareness Scores of Students and Pass Outs from Different Districts

Stake Holder	Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Students	Awareness Score	Between Groups	33.994	2	16.997	9.142	< 0.001
		Within Groups	1734.622	933	1.859	.	.
		Total	1768.615	935	.	.	
Pass Outs	Awareness Score	Between Groups	1.637	2	0.818	0.373	0.689
		Within Groups	863.240	393	2.197		
		Total	864.876	395			

The results of the *Tukey HSD Multiple Comparison Test* show that the difference is significant only between Thrissur and the other two districts (Table: 6.42). There is no significant difference between Kollam and Kozhikkode districts. So it is clear that the students of Thrissur district have a significantly different awareness score when compared with the other two districts.

Table: 6.42 Tukey HSD Multiple Comparison Test of the Awareness Scores of Students from Different Districts

(I) District	(J) District	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kollam	Thrissur	-0.276 ^(*)	0.102	0.020	-0.52	-0.04
	Kozhikkode	0.244	0.116	0.089	-0.03	0.52
Thrissur	Kollam	0.276 ^(*)	0.102	0.020	0.04	0.52
	Kozhikkode	0.520 ^(*)	0.123	0.000	0.23	0.81
Kozhikkode	Kollam	-0.244	0.116	0.089	-0.52	0.03
	Thrissur	-0.520 ^(*)	0.123	0.000	-0.81	-0.23

(*The mean difference is significant at the 0.05 level.)

The *table: 6.43* given below shows the mean scores, mean percentage scores and standard deviations of the awareness scores of students and pass outs from different localities.

The mean awareness score of students from schools located in Panchayath is 1.30, that in Municipality is 1.03 and that in Corporation is 1.37 with respective standard deviations of 1.406, 1.342 and 1.250. The respective mean percentage scores are 16.25, 12.88 and 17.13. The awareness of students from schools located in all the three localities is low as indicated by the low mean percentage scores. The mean score is slightly low for students from Municipality when compared with those from Panchayath and Corporation. Further analysis was done using One-Way ANOVA.

The mean awareness score of pass outs from schools located in Panchayath and Municipality is 1.09 and that in Corporation is 0.99 with respective standard deviations of 1.503, 1.487 and 1.400. The respective mean percentage scores are 13.63, 13.63 and 12.38. The awareness of pass outs from schools located in all the three localities is low as indicated by the low mean percentage scores. There are not many differences among the mean scores of pass outs from schools located in Municipality, Panchayath and Corporation. Further analysis was done using One-Way ANOVA the results of which are given in *table: 6.44*.

For students, the F-value is 1.622 with a p-value of 0.198 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of students from schools located in different localities.

For pass outs, the F-value of 0.156 with a p-value of 0.856 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of pass outs from schools located in different localities.

Table: 6.43 Mean Awareness Scores of Students and Pass Outs from Different Localities

Locality		Students	Pass Outs
Panchayath	Mean	1.30	1.09
	Mean % Score	16.25	13.63
	Std. Deviation	1.406	1.503
Municipality	Mean	1.03	1.09
	Mean % Score	12.88	13.63
	Std. Deviation	1.342	1.487
Corporation	Mean	1.37	0.99
	Mean % Score	17.13	12.38
	Std. Deviation	1.250	1.400
Total	Mean	1.29	1.07
	Mean % Score	16.13	13.38
	Std. Deviation	1.375	1.480

Table: 6.44 One-Way ANOVA of the Awareness Scores of Students and Pass Outs from Different Localities

Stake Holder	Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Students	Awareness Score	Between Groups	6.127	2	3.063	1.622	0.198
		Within Groups	1762.489	933	1.889		
		Total	1768.615	935			
Pass Outs	Awareness Score	Between Groups	0.685	2	.342	0.156	0.856
		Within Groups	864.191	393	2.199		
		Total	864.876	395			

The *table: 6.45* given below shows the mean scores, mean percentage scores and standard deviations of the awareness scores of students and pass outs from different courses.

The mean scores of students are 1.43 for MRT, 1.29 for MLT and 1.18 for AAG out of a maximum possible score of 8 with standard deviations of 1.482, 1.328 and 1.346 respectively. The mean percentage score is 17.88 for

MRT, 16.13 for MLT and 14.75 for AAG. The mean percentage scores are low for students from all the three courses indicating poor awareness. It is clear that the mean score is highest for MRT and lowest for AAG. Further analysis was done using One-Way ANOVA.

The mean scores of pass outs are 1.03 for MRT and 1.09 for MLT and AAG out of a maximum possible score of 8 with standard deviations of 1.628, 1.277 and 1.628 respectively. The mean percentage score is 12.88 for MRT and 13.63 for MLT and AAG. The mean percentage scores are low for pass outs from all the three courses indicating poor awareness. It is clear that there is not much difference among the mean scores of pass outs from different courses. Further analysis was done using One-Way ANOVA.

Table: 6.45 Mean Awareness Scores of Students and Pass Outs from Different Courses

Courses		Students	Pass Outs
MRT*	Mean	1.43	1.03
	Mean % Score	17.88	12.88
	Std. Deviation	1.482	1.628
MLT**	Mean	1.29	1.09
	Mean % Score	16.13	13.63
	Std. Deviation	1.328	1.277
AAG***	Mean	1.18	1.09
	Mean % Score	14.75	13.63
	Std. Deviation	1.346	1.628
Total	Mean	1.29	1.07
	Mean % Score	16.13	13.38
	Std. Deviation	1.375	1.48

*MRT: Maintenance and Repairs of Radio and Television, ** MLT: Medical Laboratory Technician
 *** AAG: Accounting and Auditing.

The results of the One-Way ANOVA given below in *table: 6.46*. The table shows an F-value of 2.031 with a p-value of 0.132 at 5% significance

level for students. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of students from different courses.

It also shows an F-value of 0.062 with a p-value of 0.939 at 5% significance level for pass outs. Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the different courses with respect to the awareness score of pass outs.

Table: 6.46 One-Way ANOVA of the Awareness Scores of Students and Pass Outs from Different Courses

Stake Holder	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	
Students	Awareness Score	Between Groups	7.668	2	3.834	2.031	0.132
		Within Groups	1760.947	933	1.887		
		Total	1768.615	935			
Pass Outs	Awareness Score	Between Groups	0.275	2	0.137	0.062	0.939
		Within Groups	864.601	393	2.200		
		Total	864.876	395			

The *table: 6.47* given below shows the mean scores, mean percentage scores and standard deviations of the awareness scores of students and pass outs from different SEB categories.

In the case of students, the mean score is 1.30 for 'poor', 1.34 for 'lower middle' and 1.19 for 'upper middle' SEB categories out of a maximum possible score of 8 with standard deviations of 1.378, 1.389 and 1.333 respectively. The mean percentage score is 16.25 for 'poor', 16.75 for 'lower middle' and 14.88 for 'upper middle'. The mean percentage scores are low for students from all the three SEB categories indicating poor awareness. It is clear that the mean

score is highest for ‘lower middle’ and lowest for ‘upper middle’. Further analysis was done using One-Way ANOVA.

In the case of students, the mean score is 0.83 for ‘poor’, 1.26 for ‘lower middle’ and 1.17 for ‘upper middle’ out of a maximum possible score of 8 with standard deviations of 1.555, 1.639 and 1.917 respectively. The mean percentage score is 10.36 for ‘poor’, 15.75 for ‘lower middle’ and 14.63 for ‘upper middle’. The mean percentage scores are low for pass outs from all the three SEB categories indicating poor awareness. It is clear that the mean score is highest for the ‘lower middle’ category and lowest for the ‘poor’ category. Further analysis was done using One-Way ANOVA.

Table: 6.47 Mean Awareness Scores of Students and Pass Outs from Different Socio-Economic Backgrounds

SEB		Students	Pass Outs
Poor	Mean	1.30	0.83
	Mean % Score	16.25	10.36
	Std. Deviation	1.378	1.555
Lower Middle	Mean	1.34	1.26
	Mean % Score	16.75	15.75
	Std. Deviation	1.389	1.639
Upper Middle	Mean	1.19	1.17
	Mean % Score	14.88	14.63
	Std. Deviation	1.333	1.917
Total	Mean	1.29	1.07
	Mean % Score	16.13	13.38
	Std. Deviation	1.375	1.480

The results of the One-Way ANOVA for students given below (Table: 6.48) show an F-value of 0.294 with a p-value of 0.746 at 5% significance level for students. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of students from different SEB categories.

The results of the One-Way ANOVA of pass outs (Table: 6.48) show an F-value of 3.914 with a p-value of 0.021 at 5% significance level. Since the p-value is lower than 0.05 it is concluded that there are significant differences among the different SEB categories with respect to the awareness score of pass outs. *Tukey HSD Multiple Comparison Test* was done to study paired differences.

Table: 6.48 One-Way ANOVA of the Awareness Scores of Students and Pass Outs from Different Socio-Economic Backgrounds

Stake Holder	Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Students	Awareness Score	Between Groups	1.113	2	0.556	0.294	0.746
		Within Groups	1767.503	933	1.894		
		Total	1768.615	935			
Pass Outs	Awareness Score	Between Groups	16.891	2	8.445	3.914	0.021
		Within Groups	847.985	393	2.158		
		Total	864.876	395			

The results of the *Tukey HSD Multiple Comparison Test* show that there is significant difference only between 'poor' and 'lower middle' categories (Table: 6.49). No significant difference is seen between 'poor' and 'upper middle' and between 'lower middle' and 'upper middle'.

Table: 6.49 Tukey HSD Multiple Comparison Test for the Awareness Scores of Pass Outs from Different SEB Categories

(I) Socio-Economic Status Category	(J) Socio-Economic Status Category	Mean Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Poor	Lower Middle	-0.42(*)	0.152	0.015	-0.78	-0.07
	Upper Middle	-0.33	0.364	0.630	-1.19	0.52
Lower Middle	Poor	0.42(*)	0.152	0.015	0.07	0.78
	Upper Middle	0.09	0.361	0.967	-0.76	0.94
Upper Middle	Poor	0.33	0.364	0.630	-0.52	1.19
	Lower Middle	-0.09	0.361	0.967	-0.94	0.76

(* The mean difference is significant at the .05 level.)

6.3.2 Awareness of Teachers and Principals

Teachers and principals should be aware about the goals and objectives of VHSE. This is important for the effective transaction of the curriculum, proper guidance of the students and their career development and for the fulfilment of the objectives of the VHSE programme.

The table below (*Table: 6.50*) shows that 33.3% of the teachers and 48.7% of the principals are not aware about the goals and objectives of the VHSE. The awareness of the teachers is better than that of the principals, but overall the awareness is not very good. Serious efforts need to be put in for creating hundred percent awareness regarding the goals and objectives of VHSE among the teachers and principals. The VHSE department should take initiative in this regard by organising training programmes for teachers and principals, especially for those who are newly appointed.

Table: 6.50 Awareness of Teachers and Principals Regarding the Goals and Objectives of VHSE

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	26	66.7	20	51.3
Not Aware	13	33.3	19	48.7
Total	39	100.0	39	100.0

It has already been seen that the awareness of students and pass outs regarding the terminal option is very low. Now it is time to see the awareness of the teachers and principals regarding this. The *table: 6.51* shows that 17.9% of the teachers and 33.3% of the principals are unaware about this aspect. It is really surprising that there is no 100% awareness regarding this. The awareness of the teachers is better than that of the principals, but overall the awareness needs to be improved. All the teachers and principals should be made aware about this and the students who want to exercise this option should be given the opportunity to do so. The VHSE department should issue necessary guidelines regarding this and measures should be taken to improve the awareness.

Table: 6.51 Awareness of Teachers and Principals about the Terminal Option of VHSE in Kerala

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	32	82.1	26	66.7
Not Aware	7	17.9	13	33.3
Total	39	100.0	39	100.0

Apprenticeship training is one of the major post-course training strategies of the VHSE programme. The incidence of apprenticeship training has been very low among the VHSE pass outs. So it is worthwhile to know the awareness of the teachers and principals regarding this. The *table: 6.52* shows that 12.8% of the teachers and 69.2% of the principals are unaware about

apprenticeship training. The awareness of the teachers is better than that of the principals, but overall the awareness needs to be improved.

Table: 6.52 Awareness of Teachers and Principals about Apprenticeship Training

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	34	87.2	12	30.8
Not Aware	5	12.8	27	69.2
Total	39	100.0	39	100.0

Awareness regarding the existence of a training strategy like apprenticeship training alone is not enough. The teachers and principals should know about the institutions providing apprenticeship training, procedure for getting apprenticeship training, duration of the training, stipend etc. This is necessary for carrying out the formalities of the apprenticeship training. This aspect was also probed and the table below (*Table: 6.53*) shows that 53.8% of the teachers and 82.1% of the principals are not aware about this aspect. The awareness of teachers is better than that of the principals, but overall the awareness is low. This is an important issue that needs to be addressed immediately. The VHSE department should issue necessary guidelines to the teachers and principals to improve the awareness.

Table: 6.53 Awareness of Teachers and Principals about the Procedures for Getting Apprenticeship Training

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	18	46.2	7	17.9
Not Aware	21	53.8	32	82.1
Total	39	100.0	39	100.0

School-Industry Linkage is an essential requirement for the effective conduct of the VHSE programme. Unfortunately very few schools in the state have established such a linkage. Most of the stake holders seem to be unaware about this. The table below (*Table: 6.54*) shows that 38.5% of the teachers and 53.8% of the principals are unaware about this. So this awareness needs to be created among the teachers, and principals and it should be made sure that all the schools have established school-industry linkages. The VHSE department should take initiative in creating this awareness.

Table: 6.54 Awareness of Teachers and Principals about School-Industry Linkage

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	24	61.5	18	46.2
Not Aware	15	38.5	21	53.8
Total	39	100.0	39	100.0

Since the VHSE programme in Kerala provides opportunities for the pass outs for higher studies, giving proper guidance to the students and pass outs regarding the higher study options is an important responsibility of the training personnel. Therefore it is important to know whether the teachers and principals have proper awareness regarding the higher study options. *Table: 6.55* shows that 10.3% of the teachers and 30.8% of the principals are not aware of the various higher study options. The awareness of the teachers is better than that of the principals, but there is no complete awareness. So there is need to create cent percent awareness among the teachers and principals regarding the higher study options and their availability. The VHSE department with the help of the career guidance and counselling cells in the schools can create this awareness.

Table: 6.55 Awareness of Teachers and Principals Regarding Higher Study Options

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	35	89.7	27	69.2
Not Aware	4	10.3	12	30.8
Total	39	100.0	39	100.0

Giving proper guidance to the students and pass outs regarding the employment options is an important responsibility of the training personnel. The *table: 6.56* shows that 7.7% of the teachers and 35.9% of the principals are unaware of the employment options. The awareness of the teachers is better than that of the principals. But there is no complete awareness. This finding stresses the need for creating awareness among the teachers and principals regarding the employment opportunities available to the VHSE pass outs. Once again the VHSE department with the help of the career guidance and counselling cells in the schools should create this awareness among the teachers and principals of VHS schools in Kerala.

Table: 6.56 Awareness of Teachers and Principals Regarding Employment Options

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	36	92.3	25	64.4
Not Aware	3	7.7	14	35.9
Total	39	100.0	39	100.0

Awareness regarding the nature and availability of guidance for starting self employment is very important for any one pursuing VHSE. Training personnel can play an important role in creating this awareness among the students and pass outs. For this they should have proper awareness regarding these aspects. The *table: 6.57* shows that 64.1% of the teachers and 82.1% of the principals are unaware of the nature and availability of the different self

employment guidance and assistances. The awareness of the teachers is higher than that of the principals but overall the awareness is very low. So there is an urgent need to improve the awareness of the teachers and principals regarding the availability of self employment guidance and assistances. The VHSE department should conduct training camps for teachers and principals with the collaboration of institutions providing self employment guidance and assistance to create awareness among the teachers and principals.

Table: 6.57 Awareness of Teachers and Principals Regarding Self Employment Guidance

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Aware	14	35.9	7	17.9
Not Aware	25	64.1	32	82.1
Total	39	100.0	39	100.0

The awareness scores of the 39 teachers and principals selected for the study has been analysed. The mean awareness score for teachers is 5.62 with a standard deviation of 2.243 and that for principals is 3.64 with a standard deviation of 2.670 (Table: 6.58). The mean percentage score is 70.25 for teachers and 45.50 for principals 65 that the mean awareness score of teachers is well above 50% of the maximum score value and that of the principals is just below that level. Both teachers and principals have better awareness when compared with students and pass outs.

Table: 6.58 Mean Awareness Scores of Teachers and Principals

Stake Holder	Mean	Mean Percentage Score	Standard Deviation
Teachers	5.62	70.25	2.243
Principals	3.64	45.50	2.670

The information given in the above table (*Table: 6.58*), is tested to know whether the Awareness Scores of the teachers and principals are 50% of the maximum score value. For that the hypothesis is formulated that the mean Awareness Score of the teachers and principals is 4 (50% of maximum score value) against it is less than 4. Accordingly the following hypotheses are to be tested.

Testing of Hypothesis

H₀: *The mean Awareness Score of the teachers of the VHS schools in Kerala is 4 on the Awareness Scale used in this study.*

H₁: *The mean Awareness Score of the teachers of the VHS schools in Kerala is less than 4 on the Awareness Scale used in this study.*

The above hypothesis is tested using the one sample t-test. *The result of the one sample t-test gives a t-value of 4.497 with a p-value of 0.999 at 5% significance level which is higher than 0.05 and since the t-value is higher than -1.686, the alternative hypothesis is rejected and the null hypothesis that the Mean Awareness Score of the teachers is 4 is accepted (Table: 6.59).*

Testing of Hypothesis

H₀: *The mean Awareness Score of the principals of the VHS schools in Kerala is 4 on the Awareness Scale used in this study.*

H₁: *The mean Awareness Score of the principals of the VHS schools in Kerala is less than 4 on the Awareness Scale used in this study.*

The above hypothesis is tested using the one sample t-test. *The results of the one sample t-test gives a t-value of -0.840 with a p-value of 0.203 at 5% significance level which is less than 0.05 and since the t-value is higher than-*

1.686, the alternative hypothesis is rejected and the null hypothesis that the Mean Awareness Score of the principals is 4 accepted (*Table: 6.59*).

Table: 6.59 One Sample t-test of the Mean Awareness Scores of Teachers and Principals

Stake Holder	t	df	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Teachers	4.497	38	0.999	1.62	.89	2.34
Principals	-0.840	38	0.203	-.36	-1.22	.51

The *table: 6.60* shows the overall awareness categorisation of the teachers and principals arrived at based on the awareness score. It can be seen that 15.4% of the teachers and 59 % of the principals have only ‘poor’ awareness while 25.6% of teachers and 10.3% of principals have ‘average’ awareness. Only 59% of teachers and 30.8% of principals have good awareness.

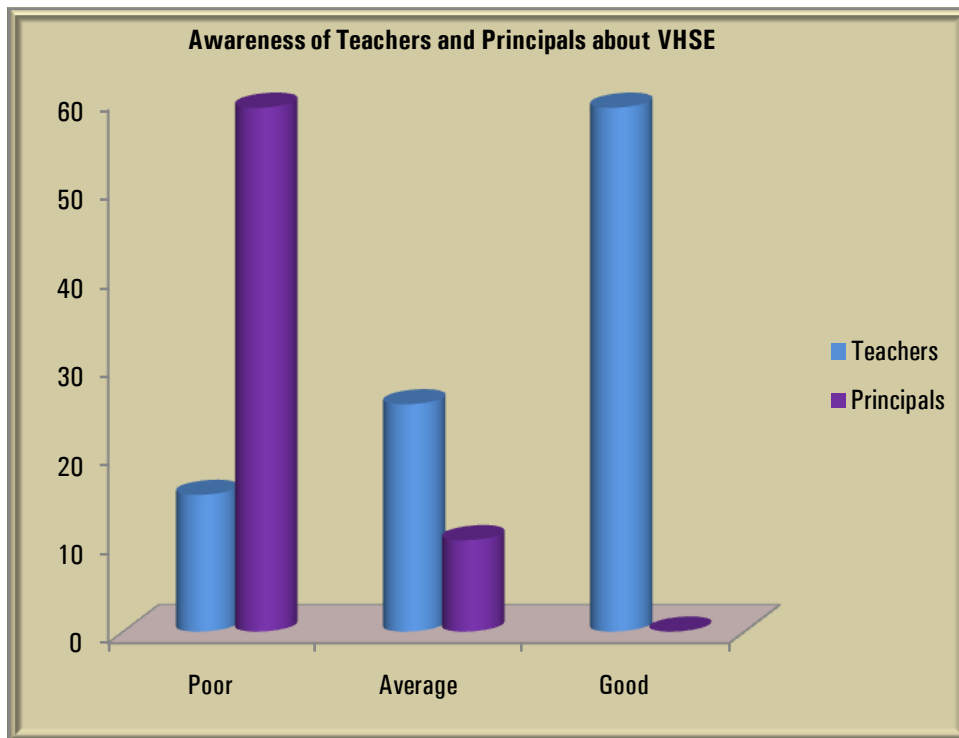
Table: 6.60 Overall Awareness of Teachers and Principals about VHSE

Awareness	Teachers		Principals	
	Frequency	Percent	Frequency	Percent
Poor	6	15.4	23	59.0
Average	10	25.6	4	10.3
Good	23	59.0	12	30.8
Total	39	100.0	39	100.0

Overall teachers have better awareness when compared with principals. This may be because of the fact that usually the high school Head Masters are promoted as principals and they don’t have any previous experience with VHSE. Most of them also do not have any technical background (None of the 39 principals selected for this study has technical background). Many of them don’t get more than one or two years in the post of principals. This, along with the work load of the high school section, reduces their involvement in VHSE matters. So the principal post should be given to the teachers from the VHSE section just like Plus-Two. But there is need to improve the overall awareness

of teachers and principals about the Vocational Higher Secondary Education in the State. The cylinder chart (Figure: 6.4) gives a better picture.

Figure: 6.4 Cylinder Chart Showing the Awareness of Teachers and Principals about VHSE



Further analysis has been made to find out the differences in the awareness of teachers and principals with respect to variables like gender, type of school, district, location of school, and experience.

The table given below (Table: 6.61) shows the mean scores, mean percentage scores, standard deviations and the results of the t-test of the awareness scores of male and female teachers and principals.

In the case of teachers, the mean score for males is 5.58 and that for the females is 5.63 out of a maximum possible score of 8 with standard deviations of 2.644 and 2.097 respectively. The mean percentage score is 69.75 for males and 70.38 for females indicating that awareness is much better for both the

categories when compared with students and pass outs (discussed earlier). There is not much difference between the males and females which is further established by the *independent sample t-test with a t-value of -0.059 and a p-value of 0.954 at 5% significance level*. Since the p-value is higher than 0.05, it is concluded that there is no significant difference between the awareness scores of male and female teachers.

In the case of principals the mean score for males is 3.73 and that for the females is 3.61 out of a maximum possible score of 8 with standard deviations of 2.573 and 2.753 respectively. The mean percentage score is 46.63 for males and 45.13 for females indicating that awareness is lower for both the categories when compared with teachers but better than students and pass outs (discussed earlier). There is not much difference between the males and females which is further established by the *independent sample t-test with a t-value of 0.125 and a p-value of 0.901 at 5% significance level*. Since the p-value is higher than 0.05, it is concluded that there is no significant difference between the awareness scores of male and female principals.

Table: 6.61 t-test Based on the Awareness Scores of Male and Female Teachers and Principals

Stake Holder	Gender	Mean	Mean % score	Std. Deviation	t	df	Sig. (2-tailed)
Teachers	Male	5.58	69.75	2.644	-0.059	37	0.954
	Female	5.63	70.38	2.097			
Principals	Male	3.73	46.63	2.573	0.125	37	0.901
	Female	3.61	45.13	2.753			

The table given below (*Table: 6.62*) shows the mean scores, mean percentage scores, standard deviations and the results of the t-test of the awareness scores of teachers and principals from private and government schools.

In the case of teachers from private schools the mean awareness score is 6.33 and that from government schools is 5.30 with respective standard deviations of 2.348 and 2.163. The respective mean percentage scores are 79.13 and 66.25. The awareness of teachers from both private and government schools are good as indicated by the high mean percentage scores. The mean score is slightly higher for teachers from private schools when compared with those from government schools. But the results of the *independent sample t-test* show a *t-value* of 1.347 and a *p-value* of 0.186 at 5% significance level. Since the *p-value* is more than 0.05, it is concluded that there is no significant difference between the awareness scores of teachers from private and government schools.

In the case of principals from private schools the mean awareness score is 4.00 and that from government schools is 3.48 with respective standard deviations of 2.594 and 2.737. The respective mean percentage scores are 50.00 and 43.50. The awareness of principals from both private and government schools are not very good as indicated by the mean percentage scores. The mean score is slightly higher for principals from private schools when compared with those from government schools. But the results of the *independent sample t-test* show a *t-value* of 0.555 and a *p-value* of 0.583 at 5% significance level. Since the *p-value* is more than 0.05, it is concluded that there is no significant difference between the awareness scores of principals from private and government schools.

Table: 6.62 t-test Based on the Awareness Scores of Teachers and Principals from Private and Government Schools

Stake Holder	Type of School	Mean	Mean % score	Std. Deviation	t	df	Sig. (2-tailed)
Teachers	Private	6.33	79.13	2.348	1.347	37	0.186
	Government	5.30	66.25	2.163			
Principals	Private	4.00	50.00	2.594	0.555	37	0.583
	Government	3.48	43.50	2.737			

The table given below (*Table: 6.63*) shows the mean scores, mean percentage scores and standard deviations of the awareness scores of teachers and principals from different districts.

For teachers, the mean score is 5.75 for Kollam, 5.60 for Thrissur and 5.33 for Kozhikkode out of a maximum possible score of 8 with standard deviations of 2.268, 2.221 and 2.449 respectively. The mean percentage score is 71.88 for Kollam, 70.00 for Thrissur and 66.63 for Kozhikkode. The mean percentage scores are high for teachers from all the three districts indicating the good awareness. It is clear that the mean score is slightly lower for Kozhikkode district when compared with the other two districts. Further analysis is done using One-Way ANOVA to study the differences.

For principals, the mean score is 4.44 for Kollam, 2.83 for Thrissur and 3.11 for Kozhikkode out of a maximum possible score of 8 with standard deviations of 2.256, 2.887 and 2.472 respectively. The mean percentage score is 55.50 for Kollam, 35.38 for Thrissur and 38.88 for Kozhikkode. The mean percentage score is above 50 only for Kollam. Overall the awareness is not very good. Further analysis was done using One-Way ANOVA.

Table: 6.63 Mean Awareness Scores of Teachers and Principals from Different Districts

District		Teachers	Principals
Kollam	Mean	5.75	4.44
	Mean % Score	71.88	55.50
	Std. Deviation	2.268	2.526
Thrissur	Mean	5.60	2.83
	Mean % Score	70.00	35.38
	Std. Deviation	2.221	2.887
Kozhikkode	Mean	5.33	3.11
	Mean % Score	66.63	38.88
	Std. Deviation	2.449	2.472
Total	Mean	5.62	3.64
	Mean % Score	70.25	45.50
	Std. Deviation	2.243	2.670

The results of the One-Way ANOVA given below show an F-value of 0.102 with a p-value of 0.903 at 5% significance level for teachers(*Table: 6.64*). Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of teachers from different districts.

For principals the F-value is 1.589 with a p-value of 0.218 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of principals from different districts.

Table: 6.64 One-Way ANOVA of the Awareness Scores of Teachers and Principals from Different Districts

Stake Holder	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	
Teachers	Awareness Score	Between Groups	1.081	2	0.540	0.102	0.903
		Within Groups	190.150	36	5.282		
		Total	191.231	38			
Principals	Awareness Score	Between Groups	21.974	2	10.987	1.589	0.218
		Within Groups	249.000	36	6.917		
		Total	270.974	38			

The *table: 6.65* given below shows the mean scores, mean percentage scores and standard deviations of the awareness scores of teachers and principals from different localities.

The mean awareness score of teachers from schools located in Panchayath is 5.69, that in Municipality is 6.67 and that in Corporation is 4.86 with respective standard deviations of 2.254, 2.309 and 2.268. The respective mean percentage scores are 71.13, 83.38 and 60.75. The awareness of teachers from schools located in all the three localities is good as indicated by the high mean percentage scores. The mean score is highest for teachers from

Municipality and lowest for teachers from Corporation. Further analysis was done using One-Way ANOVA.

The mean awareness score of principals from schools located in Panchayath is 3.97, that in Municipality is 2.33 and that in Corporation is 2.86 with respective standard deviations of 2.882, 1.155 and 2.340. The respective mean percentage scores are 49.63, 29.13 and 35.75. The awareness of principals from schools located in all the three localities is not very good as indicated by the low mean percentage scores. The mean score is highest for principals from Panchayath and lowest for principals from Municipality. Further analysis was done using One-Way ANOVA.

Table: 6.65 Mean Awareness Scores of Teachers and Principals from Different Localities

Locality		Teachers	Principals
Panchayath	Mean	5.69	3.97
	Mean % Score	71.13	49.63
	Std. Deviation	2.254	2.822
Municipality	Mean	6.67	2.33
	Mean % Score	83.38	29.13
	Std. Deviation	2.309	1.155
Corporation	Mean	4.86	2.86
	Mean % Score	60.75	35.75
	Std. Deviation	2.268	2.340
Total	Mean	5.62	3.64
	Mean % Score	70.25	45.50
	Std. Deviation	2.243	2.670

Given below are the results of the One-Way ANOVA (*Table: 6.66*). For teachers the F-value is 0.735 with a p-value of 0.487 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of teachers from schools located in different localities.

For principals, the F-value is 0.869 with a p-value of 0.428 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the awareness scores of principals from schools located in different localities.

Table: 6.66 One-Way ANOVA of the Awareness Scores of Teachers and Principals from Different Localities

Stake Holder	Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
Teachers	Awareness Score	Between Groups	7.500	2	3.750	0.735	0.487
		Within Groups	183.731	36	5.104		
		Total	191.231	38			
Principals	Awareness Score	Between Groups	12.485	2	6.243	0.869	0.428
		Within Groups	258.489	36	7.180		
		Total	270.974	38			

The table below (*Table: 6.67*) shows that the mean awareness score of teachers with less than 5 years of teaching experience is 5.25, those with 5-10 years of teaching experience is 5.22 and those with 10 or more years of teaching experience is 6.70 with respective standard deviations of 2.381, 2.224 and 1.767. The respective mean percentage scores are 65.63, 65.25 and 83.75. The awareness of teachers is good as indicated by the high mean percentage scores. The mean score is higher for teachers with 10 or more years of experience when compared with those with lesser experience. Further analysis was done using One-Way ANOVA.

Table: 6.67 Mean Awareness Score of Teachers with Different Levels of Teaching Experience

Teaching Experience		Awareness Score
0-5 Years	Mean	5.25
	Mean % Score	65.63
	Std. Deviation	2.381
5-10 Years	Mean	5.22
	Mean % Score	65.25
	Std. Deviation	2.224
10 or More Years	Mean	6.70
	Mean % Score	83.75
	Std. Deviation	1.767
Total	Mean	5.62
	Mean % Score	70.25
	Std. Deviation	2.243

Given below are the results of the One-Way ANOVA (Table: 6.68). It shows an F-value of 1.624 with a p-value of 0.211 at 5% significance level. Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the awareness scores of teachers with different years of teaching experience in VHSE.

Table: 6.68 One-Way ANOVA of the Awareness Scores of Teachers with Different Levels of Teaching Experience

Independent Variable		Sum of Squares	df	Mean Square	F	Sig.
Awareness Score	Between Groups	15.825	2	7.913	1.624	0.211
	Within Groups	175.406	36	4.872		
	Total	191.231	38			

The table: 6.69 below shows that the mean awareness score of principals with one year of experience is 2.14, those with two years of experience is 5.00

and those three years of experience is 6.67 with respective standard deviations of 1.807, 2.569 and 1.506.

Table: 6.69 Mean Awareness Scores of Principals with Different Levels of Experience

Experience		Awareness Score
1 Year	Mean	2.14
	Mean % Score	26.75
	Std. Deviation	1.807
2 Years	Mean	5.00
	Mean % Score	62.50
	Std. Deviation	2.569
3 Years	Mean	6.67
	Mean % Score	83.38
	Std. Deviation	1.506
Total	Mean	3.64
	Mean % Score	45.50
	Std. Deviation	2.670

The respective mean percentage scores are 26.75, 62.50 and 83.38. The awareness of principals with more years of experience is higher as indicated by the mean percentage scores. The mean score is lowest for principals with one year of experience and highest for principals with three years of experience. Further analysis was done using One-Way ANOVA.

Table: 6.70 shows the results of the One-Way ANOVA. It shows an F-value of 15.425 with a p-value of <0.001 at 5% significance level. Since the p-value is less than 0.05 it is concluded that there are significant differences among the awareness scores of principals with different years of experience in VHSE. It is concluded that experience and awareness of principals are related.

Table: 6.70 One-Way ANOVA of the Awareness Scores of Principals with Different Levels of Experience

Independent Variable		Sum of Squares	df	Mean Square	F	Sig.
Awareness Score	Between Groups	125.050	2	62.525	15.425	< 0.001
	Within Groups	145.924	36	4.053		
	Total	270.974	38			

The results of the *Tukey HSD Multiple Comparison Test* show that the difference is significant only between those with one year experience and those with two and three years of experiences (*Table: 6.71*). There is no significant difference between those with two and three years of experiences.

Table: 6.71 Tukey HSD Multiple Comparison Test for Awareness Scores of Principals with Different Levels of Experience

(I) Experience	(J) Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1 Year	2 Years	-2.86(*)	0.743	0.001	-4.68	-1.05
	3 Years	-4.53(*)	0.927	0.000	-6.80	-2.26
2 Years	1 Year	2.86(*)	0.743	0.001	1.05	4.68
	3 Years	-1.67	1.022	0.246	-4.16	0.83
3 Years	1 Year	4.53(*)	0.927	0.000	2.26	6.80
	2 Years	1.67	1.022	0.246	-0.83	4.16

(* The mean difference is significant at the .05 level)

The above analysis of the awareness shows that majority of the students, pass outs and principals lack proper awareness about VHSE. The low awareness of the students and pass outs is in agreement with the findings of the previous studies. Low awareness of the principals may be little bit surprising and it is due to the fact that High School Head Masters are given the charge of the principals and they do not get much opportunity to get familiar with the

different aspects of VHSE. Another reason for this could be the lack proper orientation programmes for principals.

Awareness score is the least for the pass outs. Students have significantly higher awareness when compared with that of the pass outs. Awareness scores of the students and pass outs are significantly lower than that of the teachers and principals. Teachers have the highest awareness and the awareness score of the teachers is significantly higher than that of the principals. This presents a strong case for giving the charge of the principal to a teacher from the VHSE section. Principals with more experience have better awareness when compared those with less experience. There is urgent need to improve the awareness of the various stake holders of VHSE about the scheme of VHSE.

SECTION III

6.4 Analysis of the Training and Support Facilities

Availability and accessibility of quality training and support facilities is one of the most critical factors determining the success of a training programme and, Vocational Higher Secondary Education (VHSE) is no exception. Vocational Higher Secondary Education with its primary focus on the development of work related skills needs a wide range of distinct facilities when compared with purely Academic Schemes of Education (ASE). Previous studies revealed that the training facilities are inadequate in the VHS schools of Kerala. Therefore it would be quite suitable to analyse the various training and support facilities in the Vocational Higher Secondary (VHS) schools in Kerala. Analysis of the various dimensions of training and support facilities such as Infrastructure Facilities, Training Personnel, Real Life Training Facilities and, Career Guidance and Counselling Facilities have been made part of this analysis.

As part of the above analysis an effort has been made to measure the availability and adequacy of the training and support facilities of the selected schools using a scale, the details of which are, given in Chapter I. The measure thus developed is called 'Training and Support Facility Score'. As a first step measures are developed for the individual dimensions which are called 'Infrastructure Facility Score', 'Training Personnel Score', 'Real Life Training Facility Score' and 'Career Guidance and Counselling Facility Score'. These four Scores are then combined to arrive at the 'Training and Support Facility Score'. The analysis starts with the infrastructure facilities.

6.4.1 Analysis of the Infrastructure Facilities

Infrastructure facility without any doubt is one of the most basic facilities for the successful conduct of any educational programme. The infrastructural requirements of the VHSE programme include all the common facilities required for a Higher Secondary Education programme along with some additional facilities required to meet the special demands of the Vocational Education.

Vocational Higher Secondary Schools (VHSS) in Kerala were formed by upgrading the already existing High Schools (HS). This demanded a sudden expansion of all the infrastructure facilities to accommodate the new programme. Such sudden expansion programmes usually suffer from shortage of funds and lack of time for the completion of the projects. This has been a problem with many of the VHS schools in Kerala. It was quite natural that under these circumstances, the new scheme was forced to share the existing facilities with the High Schools (HS) which in turn added more pressure to the already deficient facilities of many High Schools. In the following paragraphs the analysis of the infrastructure facilities is conducted.

Here, in the analysis of infrastructure facilities, availability and adequacy of the various requirements such as class rooms, laboratories, libraries, smart room, drinking water, toilet, physical training and transportation are included as sub-dimensions. The following paragraphs analyse these facilities. Schools have been placed into five categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ based on the scores obtained on a five-point scale ranging from 1-5 for each of the eight infrastructure facility sub-dimensions.

Class Room Facility

Adequate number of class rooms having prescribed dimensions and necessary furniture is an important infrastructural requirement for conducting class room activities which form an indispensable part of the learning process of VHSE. So this has been analysed as a sub-dimension of the infrastructural facility analysis.

The *table: 6.72* shows the class room facilities of the schools. 17.9% of the schools have only ‘very poor’ class room facilities and 12.8% have ‘poor’ class room facilities. 43.6% have ‘average’ class room facilities and only 25.6% have ‘good’ class room facilities. No school has ‘very good’ class room facility. Altogether ‘poor’ and ‘very poor’ constitute 30.7% of the schools and ‘poor’, ‘very poor’ and ‘average’ constitute 74.4% of the schools. Overall the class room facility which is a very important basic facility is not at all satisfactory in the schools and needs to be improved. But the betterment of this facility demands lot of funds for construction activities and space for expansion which needs to be addressed. So there is need to provide additional funds to carry out these developmental activities and the government should take up this matter seriously.

Table: 6.72 Class Room Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	7	17.9	17.9
Poor	5	12.8	30.7
Average	17	43.6	74.4
Good	10	25.6	100.0
Total	39	100.0	

Laboratory Facility

Laboratories are where practical works are carried out. For a scheme like VHSE where imparting work related skills is of utmost importance, the significance of laboratories need not be overemphasised. It is the primary venue where the basics of the necessary technical and other job related skills related to various trades are delivered to the students. Therefore a well equipped laboratory is a must for the development of these skills. So the second sub-dimension of the infrastructural facility analysis is the laboratory facility.

The *table: 6.73* shows the laboratory facilities of the schools. 35.9% of schools have only 'very poor' laboratory facilities and 48.7% have only 'poor' laboratory facilities with these two together forming 84.6% of the total number of schools selected. 12.8% have 'average' laboratory facilities and only 2.6% have 'good' laboratory facilities. No school has 'very good' laboratory facilities. It is evident that the laboratory facility which is a vital basic facility is even worse when compared with the class room facility. The results prove that the facilities haven't shown much improvement after 2002, the year in which the report of the last study on VHSE in Kerala by the Planning Board of Kerala (2002)²⁴⁷ came out, which also revealed that the laboratory facilities in the VHS

schools in Kerala were poor. Therefore serious efforts have to be put in to improve this facility.

Table: 6.73 Laboratory Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	14	35.9	35.9
Poor	19	48.7	84.6
Average	5	12.8	97.4
Good	1	2.6	100.0
Total	39	100.0	

Library Facility

Libraries are an essential part of any educational programme. This provides opportunity for learners to expand their knowledge and to clear their doubts. This aspect has attained more importance than ever before with the introduction of the Continuous Evaluation and Grading Scheme (CEGS) in the VHS schools under which the teacher is only a facilitator and students have to collect a lot of information from reference books, internet etc. Libraries also help students by providing them with the latest technological and other developments in the various vocational areas. This is the third sub-dimension of the infrastructural facility analysis.

The *table: 6.74* shows the library facilities of the schools. 15.4% of schools have only 'very poor' library facilities and 35.9% have only 'poor' library facilities. These two together add up to 51.3%. 35.9% have 'average' library facilities and only 12.8% have 'good' library facilities. No school has 'very good' library facilities. As in the case of the two other facilities discussed earlier, this facility is also not at all adequate in majority of the schools. So this facility also needs a lot of improvement.

Table: 6.74 Library Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	6	15.4	15.4
Poor	14	35.9	51.3
Average	14	35.9	87.2
Good	5	12.8	100.0
Total	39	100.0	

Smart Room Facility

Smart room facility is a new addition to the infrastructure facility requirements and is a part of the 'it@school' programme introduced in the schools at all levels in the state including VHSE. This facility includes an audio-visual theatre fitted with LCD projector, computer systems and, internet connection. This facility is very useful for conducting audio-visual presentations and seminars and provides access to students to the latest information on various subjects through internet. The real value of this facility is in its ability to substitute printed study material and traditional class rooms, with digitalised study material and multimedia presentations where real life situations are analysed. This is especially useful for the study of the vocational subjects. This is the fourth sub-dimension of the infrastructural facility analysis.

The *table: 6.75* shows the smart room facilities of the schools. 28.2% have only 'poor' facilities. 30.8% have 'average' facilities and 41% have 'good' facilities. No school has 'very good' facilities. Overall the smart room facility is better when compared with the class room, library and laboratory facilities. One of the reasons for a better position of this facility could be the supply of the necessary equipments to schools from MP and MLA funds and also by the State

Governments under the 'it@school' programme. But still only 41% of the schools have good facilities. So there is need for improvement.

Table: 6.75 Smart Room Facilities

Facility	Frequency	Percent	Cumulative Percent
Poor	11	28.2	28.2
Average	12	30.8	59.0
Good	16	41.0	100.0
Total	39	100.0	

Drinking Water Facility

Drinking water facility though not directly related to the training, is an important facility for any educational institution. Drinking of contaminated water is one of the major reasons for the outbreaks of many infectious diseases especially among children. Such diseases can badly damage the educational career of students and can adversely affect the financial balance of the family. This is the fifth sub-dimension of the infrastructural facility analysis.

The *table: 6.76* shows the drinking water facilities of the schools. 43.6% of schools have only 'very poor' drinking water facilities and 30.8% have only 'poor' drinking water facilities. These two together constitute 74.4% of the total. This is really not good news. 12.8% schools each have 'average' and 'good' drinking water facilities. No school has 'very good' drinking water facilities. Overall the drinking water facility which is a very important basic facility though not directly related to the development of skills is not at all satisfactory.

Table: 6.76 Drinking Water Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	17	43.6	43.6
Poor	12	30.8	74.4
Average	5	12.8	87.2
Good	5	12.8	100.0
Total	39	100.0	

Toilet Facility

This is another infrastructure facility which is not directly related to the training. It is very important to provide students with hygienic environment at the school and make them comfortable during the school hours which will allow them to concentrate fully on their studies. This is the sixth sub-dimension of the infrastructural facility analysis.

Table: 6.77 Toilet Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	5	12.8	12.8
Poor	3	7.7	20.5
Average	14	35.9	56.4
Good	15	38.5	94.9
Very Good	2	5.1	100.0
Total	39	100.0	

The above *table: 6.77* shows the toilet facilities of the schools. 12.8% of schools have only 'very poor' toilet facilities and 7.7% have only 'poor' toilet facilities. 35.9% have 'average' toilet facilities and 38.5% have 'good' toilet facilities. Only 5.1% of schools have 'very good' toilet facilities. Overall the

toilet facility which is yet another important basic facility though not directly related to the development of skills is better when compared with the drinking water facility. But still a lot of improvements are required.

Physical Training Facilities

The overall development of a student is the ultimate aim of education. A healthy mind can exist only in a healthy body. Adequate physical and mental exercise is necessary for keeping the student focused on his goals. He should have ample opportunities for developing and showcasing his multifaceted talents. This facility is therefore an important one for the overall development of the student. This is the seventh sub-dimension of the infrastructural facility analysis.

Table: 6.78 Physical Training Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	7	17.9	17.9
Poor	3	7.7	25.6
Average	14	35.9	61.5
Good	15	38.5	100.0
Total	39	100.0	

The *table: 6.78* above shows the Physical Training Facilities of the schools. 17.9% of schools have only ‘very poor’ facilities and 7.7% have only ‘poor’ facilities. 35.9% have ‘average’ facilities and 38.5% have ‘good’ physical training facilities. No school has ‘very good’ Physical Training Facilities. Overall the physical training facility which is a very important basic facility though not directly related to the development of skills is not so bad when compared with some other facilities. Still there is room for improvement.

Transportation Facilities

Easy access to educational institutions is always a plus point in attracting students. This can save a lot of time for students and can reduce physical strain of travel. So this also is an important requirement. Alternative transportation facilities should be provided to the students, especially of those schools having no direct access to public transport system. This is the eighth sub-dimension of the infrastructural facility analysis.

The *table: 6.79* shows the transportation facilities of the schools. 12.8% of schools have only ‘very poor’ transportation facilities and 17.9% have only ‘poor’ transportation facilities. 38.5% ‘average’ transportation facilities and 30.8% have ‘good’ transportation facilities. No school has ‘very good’ transportation facilities. Overall the transportation facility which is a basic facility though not directly related to the development of skills is one of the facilities having a better status in VHS schools when compared with some other facilities even though not adequate.

Table: 6.79 Transportation Facilities

Facility	Frequency	Percent	Cumulative Percent
Very Poor	5	12.8	12.8
Poor	7	17.9	30.8
Average	15	38.5	69.2
Good	12	30.8	100.0
Total	39	100.0	

Infrastructure Facility Score

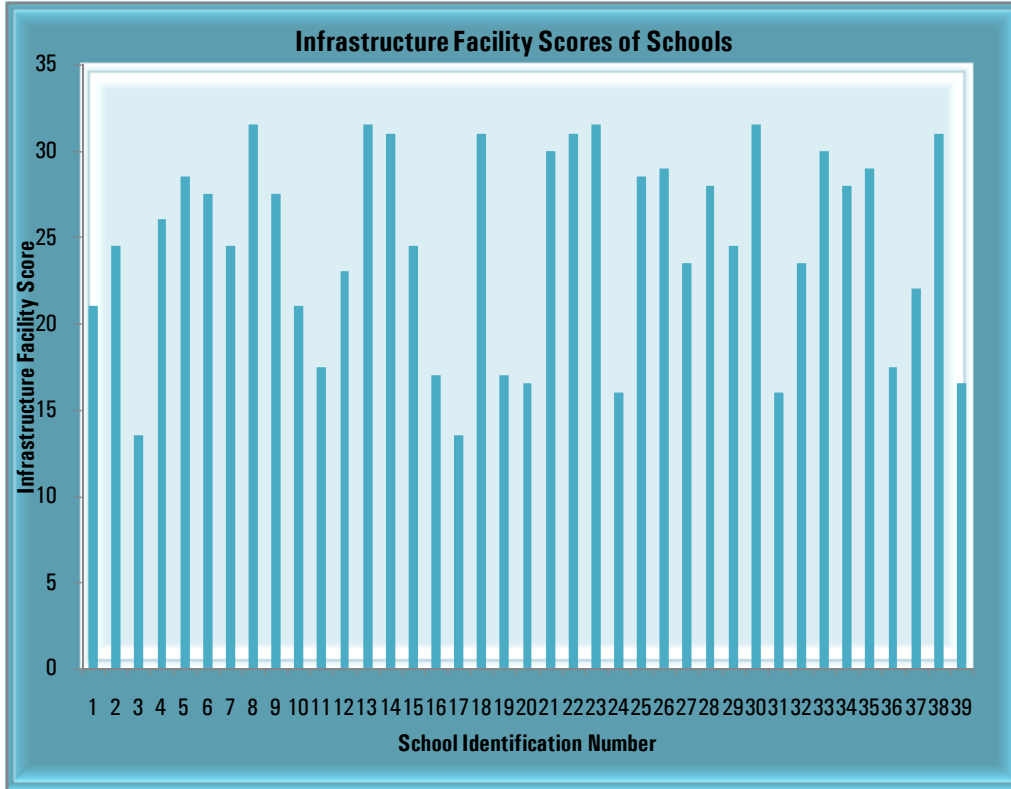
Having analysed the sub-dimensions of the infrastructure facility, it is time to analyse the overall infrastructure facility.

Table: 6.80 Infrastructure Facility Scores of Schools

School ID Number	Score	School ID Number	Score
1	21.0	21	30.0
2	24.5	22	31.0
3	13.5	23	31.5
4	26.0	24	16.0
5	28.5	25	28.5
6	27.5	26	29.0
7	24.5	27	23.5
8	31.5	28	28.0
9	27.5	29	24.5
10	21.0	30	31.5
11	17.5	31	16.0
12	23.0	32	23.5
13	31.5	33	30.0
14	31.0	34	28.0
15	24.5	35	29.0
16	17.0	36	17.5
17	13.5	37	22.0
18	31.0	38	31.0
19	17.0	39	16.5
20	16.5	Total	955.0

The *table: 6.80* above gives the ‘Infrastructure Facility Scores’ of the 39 schools. The maximum attainable score is 50. *The mean value obtained is 24.49 and the standard deviation is 5.86 with a mean percentage score of 48.98. The minimum value obtained is 13.5 and the maximum value obtained is 31.5.* The column chart provides a better picture (*Figure: 6.5*). It can be seen that the mean percentage score is less than 50% indicating that the infrastructure facilities are not very good in the schools. Differences can be seen in the scores among schools.

Figure: 6.5 Column Chart Showing the Infrastructure Facility Scores of Schools

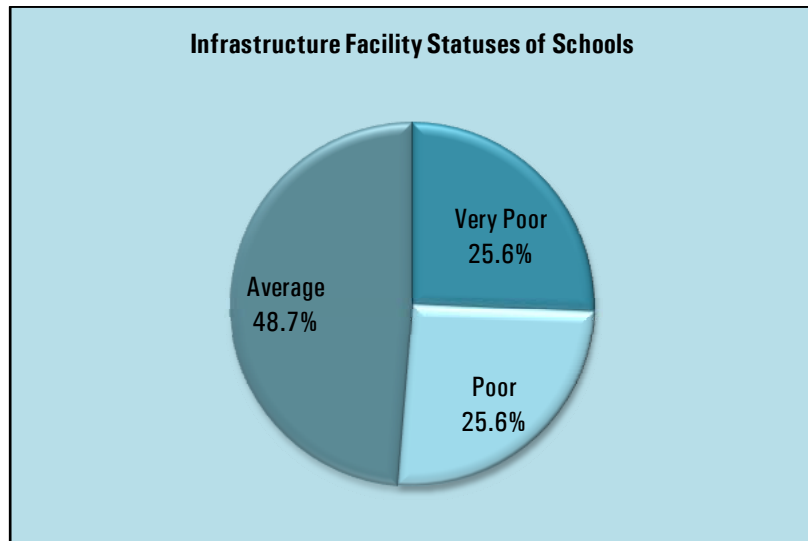


The schools with Infrastructural Facility Scores ranging from 10-18, 18-26, 26-34, 34-42 and 42-50 have been placed into five different categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ respectively to facilitate their comparison. This is shown in the *table: 6.81*. It is evident that infrastructure facilities are ‘very poor’ and ‘poor’ in 25.6% of schools each and the remaining 48.7% of schools have ‘average’ facilities. The pie chart provides a better view (*Figure: 6.6*). So it is clear that the infrastructure facilities in the VHS schools are generally poor and need a lot of improvement.

Table: 6.81 Infrastructure Facility Statuses of Schools

Status	Frequency	Percent	Cumulative Percent
Very Poor	10	25.6	25.6
Poor	10	25.6	51.3
Average	19	48.7	100.0
Total	39	100.0	

Figure: 6.6 Pie Chart Showing the Infrastructure Facility Statuses of Schools



Poor infrastructure facility was identified as a major problem faced by the VHSE in Kerala by the ORG (1996)²⁴⁸. Nothing seems to have changed after that. It is a matter of concern that even after 25 years of its introduction in the state, the infrastructure facilities in the VHS schools in Kerala are so poor. It also indicates that the recommendations of the previous studies have not been implemented. Financial constraints, along with the lack of proper monitoring from the part of the authorities, are the major reasons behind the poor infrastructure facility statuses of the VHS schools in the state. Therefore

immediate efforts should be taken to improve the infrastructure facilities in the VHS schools in Kerala.

6.4.2 Analysis of the Training Personnel

One of the most important requirements of any educational programme is the availability of well qualified and well trained training personnel having enough teaching experience. For a scheme like VHSE where work related skills are imparted to students, industry experience of training personnel is also very important.

One of the common difficulties encountered while introducing a new scheme of education is the recruitment of suitable training personnel. This can be due to the lack of availability of qualified candidates, unattractive remuneration, lack of clarity regarding the recruitment procedure etc. Therefore the next dimension in our analysis of training facilities is the training personnel. In the analysis of the training personnel, availability, nature of appointment, qualification and industry experience and teaching experience of the training personnel have been included as sub-dimensions.

Different sub-dimensions of this dimension are analysed separately. The following paragraphs analyse the different sub-dimensions like the availability of the training personnel, their qualifications and industry experience, nature of appointment and teaching experience, taking one at a time. Schools have been placed into five categories, VIZ. 'very poor', 'poor', 'average', 'good' and 'very good' based on the scores obtained on a five-point scale ranging from 1-5 respectively for each of the four training personnel sub-dimensions.

Availability of Training Personnel

There is no need to overemphasise the significance of this sub-dimension. No educational programme can be conducted without training personnel. This is the most important basic requirement for such a programme. Non-availability of competent faculty was identified as a major problem of VHSE in Kerala by the ORG (1996)²⁴⁹.

The *table: 6.82* shows the availability of training personnel in the school. Majority of the schools (51.3%) have only ‘average’ availability of training personnel. 17.9% of the schools have ‘good’ availability of training personnel and 30.8% of the schools have ‘very good’ availability of training personnel. All the schools with very good availability are private schools because they have training personnel appointed on a regular basis. So there is urgent need to appoint regular teachers in the government schools also to improve the availability training personnel in the VHS schools in Kerala.

Table: 6.82 Availability of Training Personnel

Availability	Frequency	Frequency	Frequency
Average	20	51.3	51.3
Good	7	17.9	69.2
Very Good	12	30.8	100.0
Total	39	100.0	

Nature of Appointment of Training Personnel

Nature of appointment of training personnel is also very important because there are different types of training personnel appointed in VHS schools in Kerala VIZ. permanent, employment, guest, daily wages and consolidated. Permanent teachers are appointed only in private schools. The other four types of appointments are done in government schools. There are

marked differences in the remuneration, job security and working hours as far as these different types of appointments are concerned. These differences can have an impact on the availability of the training personnel and also on the effectiveness of the teaching learning process. So this sub-dimension is an important one. Lack of full time teachers was identified as a major issue with the VHSE in India by the ORG (1996)²⁵⁰.

The *table: 6.83* shows the nature of appointment of training personnel of the schools. 51.3% have guest faculties and 17.9% have employment hands. Only 30.8% have regular hands (permanent) as training personnel. Overall there are no regular training personnel in 69.2% of the schools and all these are government schools. Those schools having guest faculties, employment hands and regular hands have been rated 'poor', 'good' and 'very good' respectively. Regular teachers should be appointed in the government schools and the government should take immediate steps regarding this.

Table: 6.83 Types of Training Personnel

Type	Frequency	Percent	Cumulative Percent
Guest (Poor)	20	51.3	51.3
Employment (Good)	7	17.9	69.2
Regular (Very Good)	12	30.8	100.0
Total	39	100.0	

Qualification and Industry Experience of Training Personnel

Training personnel with prescribed minimum qualifications are necessary for transacting the course content effectively. Industry experience of training personnel is also very important because this can help a lot in imparting real life skills to students and make them competent enough to take up employment or start self employment which is one of the primary objectives of

VHSE. Lack of industry experience was identified as a major problem faced by VHSE in India by ORG (1996)²⁵¹. Sacheti, Raisada and Verma (1992)²⁵² insisted better qualified and trained teachers for vocational subjects in VHS schools in Kerala. According to Gupta (2005)²⁵³, “a good teacher may teach theory well, but often wanting in imparting practical skills. This situation gets further complicated because a good practitioner by all means would prefer to be in an industry rather than becoming a teacher with the prevailing service conditions”.

The *table: 6.84* shows the qualification and industry experience of training personnel in the schools. All the schools have fully qualified training personnel in terms of their academic qualifications but 74.4% of them have no industry experience and these have been rated ‘average’. 25.6% are rated ‘good’ who are fully qualified and with industry experience of less than five years. But overall this facility is not so bad when compared with certain other facilities. Candidates with industry experience should be given preference in the recruitment of training personnel to VHS schools.

Table: 6.84 Qualification and Industry Experience of Training Personnel

Qualification and Industry Experience	Frequency	Percent
Fully Qualified with No of Industry Experience (Average)	29	74.4
Fully Qualified with Less than 5 Years of Industry Experience (Good)	10	25.6
Total	39	100.0

Teaching Experience of Training Personnel

Teaching experience of training personnel can always be an added advantage in the transaction of curriculum. Experience can help in understanding the students better and selecting the best class room activity for transacting a particular curriculum objective. Sacheti, Raisada and Verma (1992)²⁵⁴ found that, majority of the vocational teachers in Kerala were fresh

graduates or post graduates having no practical experiences. He observed that lack of experience of teachers was a major limitation of VHSE in Kerala.

The *table: 6.85* shows the experience of training personnel in the schools. 15.4% of the training personnel have no previous experience. 33.3% have experience of less than five years. 23.1% have experience of 5 years to less than 10 years. 23.1% have experience of 10years to less than 15 years and only 5.1% have experience of 15 years or more. It is clear that the training personnel in general in VHSE are not very experienced. This may be due to the fact that the major way for gaining teaching experience in many of the vocational subjects is by working in VHS schools. So there is every possibility that the fresh recruits are inexperienced. However, whenever available, experienced candidates should be appointed in VHS schools. Adequate training should be given to all the fresh recruits and in-service training should be given to all the training personnel at regular intervals. According to the ORG (1996)²⁵⁵, lack of teacher training was a matter of concern for VHSE teachers in Kerala.

Table: 6.85 Teaching Experience of Training Personnel

Experience	Frequency	Percent	Cumulative Percent
Nil	6	15.4	15.4
< 5 Years	13	33.3	48.7
5 to < 10 Years	9	23.1	71.8
10 to < 15 Years	9	23.1	94.9
15 or More Years	2	5.1	100.0
Total	39	100.0	

Training Personnel Score

Having analysed the individual sub-dimensions, it is time to arrive at the ‘Training Personnel Score’ and analyse it.

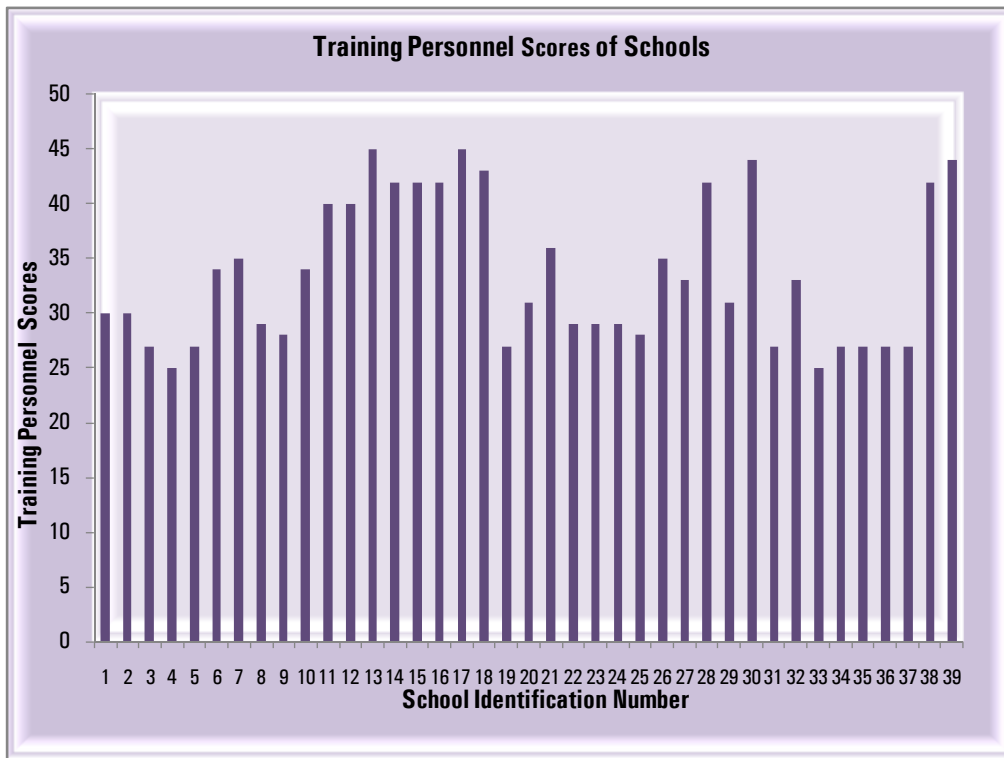
Table: 6.86 Training Personnel Scores of Schools

School ID Number	Score	School ID Number	Score
1	30	21	36
2	30	22	29
3	27	23	29
4	25	24	29
5	27	25	28
6	34	26	35
7	35	27	33
8	29	28	42
9	28	29	31
10	34	30	44
11	40	31	27
12	40	32	33
13	45	33	25
14	42	34	27
15	42	35	27
16	42	36	27
17	45	37	27
18	43	38	42
19	27	39	44
20	31	Total	1311

The *table: 6.86* above gives the ‘Training Personnel Scores’ of the 39 schools. The maximum attainable score value is 50. *The mean value is 31.62 and the standard deviation is 6.68 with a mean percentage score of 63.24. The minimum value obtained is 25 and the maximum value obtained is 45.* The

column chart provides a better picture (Figure: 6.7). It can be seen that the mean percentage score is higher than 50 indicating that the quality and availability of the training personnel is a little bit better when compared with infrastructure facility. Differences can be seen among schools with respect to the scores. These differences are mainly due to the fact that permanent training personnel are appointed only in private schools and in government schools only temporary training personnel are appointed.

Figure: 6.7 Column Chart Showing the Training Personnel Scores of Schools



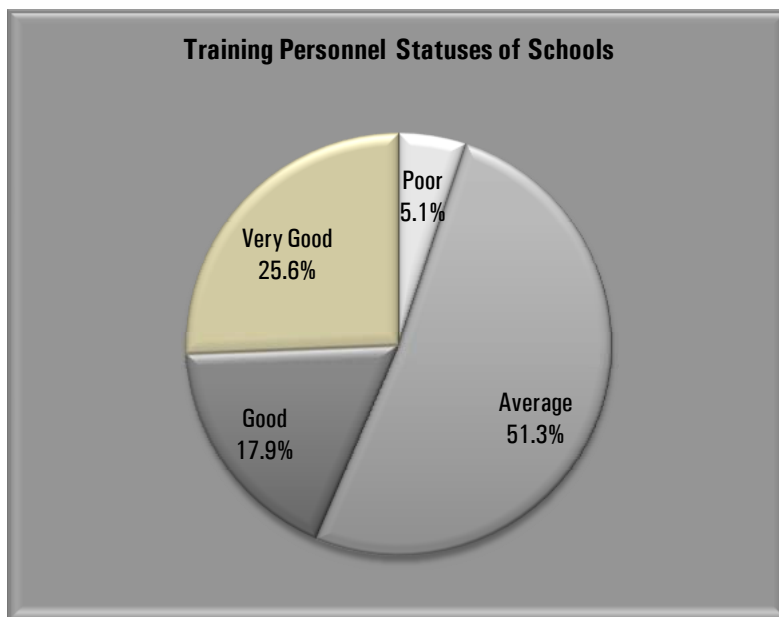
The schools with Training Personnel Scores ranging from 10-18, 18-26, 26-34, 34-42 and 42-50 have been placed into five different categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ respectively to facilitate their comparison. This is shown in the table: 6.87. It can be seen that 5.1% of schools are placed in the ‘poor’ category, 51.3% in the ‘average’ category,

17.9% in the ‘good’ category, and 25.6% in the ‘very good’ category. Majority of the schools belong to the ‘average’ or ‘poor’ categories. The pie chart provides a better view (*Figure: 6.8*).

Table: 6.87 Training Personnel Statuses of Schools

Status	Frequency	Percent	Cumulative Percent
Poor	2	5.1	5.1
Average	20	51.3	56.4
Good	7	17.9	74.4
Very Good	10	25.6	100.0
Total	39	100.0	

Figure: 6.8 Pie Chart Showing the Training Personnel Statuses Schools



The above analysis shows that training personnel as a training component is better in the VHS schools in Kerala when compared to other training components. Qualified training personnel are available but those with

industry experiences are very few. No permanent teachers are available in government schools, which is a problem that needs to be addressed immediately.

6.4.3 Analysis of the Real Life Training Facilities

Real life training is that kind of training that is aimed at the development of the trade related skills relevant to real work situations. So this is a very import facility requirement for VHS schools. Special training strategies are required for developing these kinds of skills. Accordingly these strategies have been included as the sub-dimensions of this particular analysis.

In the analysis of real life training, the implementation of the On-the-Job Training Programmes (OJT), the functioning of the Production Cum Training Centres (PTC), the conduct of Field Visit (FV), the arrangements made for Apprenticeship Training (AT) and the establishment of School Industry Linkages (SIL) have been included.

These sub-dimensions are analysed separately. The following paragraphs analyse the above said sub-dimensions. Schools have been placed into five categories, VIZ. 'very poor', 'poor', 'average', 'good' and 'very good' based on the scores obtained on a five-point scale ranging from 1-5 respectively for each of the five real life training sub-dimensions.

Functioning of the Production Cum Training Centre

Production Cum Training Centre (PTC) is a special kind of training strategy based on the principle of '*earning while learning*'. These are small production units or service centres at the school level. These provide training to students at real work situations and at the same time provide them with the opportunity for earning some money in the form of profit. Production Cum Training Centres are compulsory for each course. Kremer (2000)²⁵⁶ had

advocated the transformation of VHSEs in Kerala to Production Cum Training Centres.

The *table: 6.88* shows the functioning of the Production cum Training Centres (PTC) in the schools. The functioning of the PTC in 33.3% of the schools is 'poor' and in 41.0% of schools the functioning is 'average'. Functioning of PTCs in only 25.6% of the schools is 'good'. No school has PTCs which are 'very good'. It is clear that PTCs which are crucial in providing real life training to vocational students are not functioning very well in the state. Financial constraints, lack of proper guidelines, support and monitoring from the part of authorities, inexperience of teachers, non-viability etc. are some of the reasons for the poor state of this facility in the VHS schools of the state. Lack of proper monitoring was a serious problem faced by Vocational Education Programme in India according to the report of ORG (1996)²⁵⁷. The situation has not shown much improvement since 1999. Funds should be allocated to all the schools for starting PTCs and proper guidelines and expertise should be provided to the schools for this. Teachers should be given special training focussing on the setting up and running of PTCs.

Table: 6.88 Functioning of Production cum Training Centre

Functioning	Frequency	Percent	Cumulative Percent
Poor	13	33.3	33.3
Average	16	41.0	74.4
Good	10	25.6	100.0
Total	39	100.0	

Conduct of the On-the-Job Training Programme

This is another training strategy meant for imparting real life training to students. This is usually conducted at reputed institutions in the concerned

vocational areas in and around the locality of the school. A specified amount is allocated for each school by the government for meeting the various expenses (travelling expenses to students, daily allowances to escorting teachers, stationery expenses and the training charges to be given to the institutions where training is conducted etc.) related to the On-the-Job Training Programme. ORG (1996)²⁵⁸ identified inadequate On-the-Job Training as a major problem faced by the Vocational Education Programme in India.

The *table: 6.89* shows the conduct of the On-the-Job Training Programme (OJT) in the schools. The Conduct of the OJT in 10.3% of the schools is 'poor' and in 53.8% of the schools it is 'average'. The conduct of the OJT in only 35.9% of the schools is 'good'. No school has a 'very good' OJT. It is clear that OJT which is a very important strategy in providing real life training to vocational students is not conducted very well in the state. One of the main reasons for this is the non availability of reputed institutions in the proximity of most of the schools and when available, the difficulty in getting permission for the training. Some institutions demand high training fees that cannot be met with the fund allocated by the government. Therefore more funds should be allocated for the OJT programme and the VHSE department should take initiatives for getting permission for the training from various institutions. The VHSE department should seek the possibility of starting centralised institutions on its own or with the participation of private firms for providing OJT to VHSE students at district levels.

Table: 6.89 Conduct of the On-the-Job Training Programme

Conduct	Frequency	Percent	Cumulative Percent
Poor	4	10.3	10.3
Average	21	53.8	64.1
Good	14	35.9	100.0
Total	39	100.0	

Conduct of the Field Visit

Field Visits (FV) are also part of the real life training strategy which is aimed at making the students familiar with the work environment and work practices of greater magnitude and technicality in real life situations and also for providing them with the opportunity for getting a feel of the latest technological developments in the concerned vocational areas.

The *table: 6.90* shows the conduct of the Field Visits in the schools. The conduct of the FV in 56.4% of the schools is 'poor' and in 43.6% of the schools it is 'average'. No school has been rated 'good' or 'very good'. It is clear that FV which is yet another important strategy for providing real life training to vocational students is not conducted very well in the state. The reasons for this are similar to that of the OJT, VIZ. lack of availability of institutions, difficulty in getting permission and financial constraints. No fund is allocated for Field Visit. Therefore the VHSE department should take initiatives in identifying the institutions and getting the permission of these institutions for Field Visit. Appropriate funds should also be allocated for the Field Visit.

Table: 6.90 Conduct of the Field Visit

Conduct	Frequency	Percent	Cumulative Percent
Poor	22	56.4	56.4
Average	17	43.6	100.0
Total	39	100.0	

Arrangements for Apprenticeship Training

Apprenticeship training is a well proven training strategy for polishing the skills of trained individuals. But, as different from the other training strategies described above, it is given to the pass outs of a training programme. Though not compulsory, it is also a part of the real life training strategies of the VHSE. ORG (1996)²⁵⁹ identified inadequate apprenticeship training as a serious problem faced by the Vocational Education Programme in India.

The *table: 6.91* shows the arrangements for Apprenticeship Training (AT) in the schools. The arrangements in 56.4% of the schools are 'very poor' and in 43.6% of the schools they are 'poor'. No school has 'average', 'good' or 'very good' arrangements for Apprenticeship Training. It is clear that the Apprenticeship Training, which is a very important post VHSE training strategy, providing real life training to vocational pass outs has not benefited the VHSE pass outs in the state. The major reasons for this are the non-availability of suitable institutions and when available the unwillingness on the part of these institutions, lack of guidelines and support from the part of the VHSE department and lack of awareness of the school authorities and pass outs. Schools have not taken any initiatives in this regard because they lack proper awareness regarding the various aspects of this particular training strategy. Initiatives should be taken by the VHSE department to change this scenario.

Table: 6.91 Arrangements for Apprenticeship Training

Arrangements	Frequency	Percent	Cumulative Percent
Very Poor	22	56.4	56.4
Poor	17	43.6	100.0
Total	39	100.0	

Establishment of School Industry Linkage

School Industry Linkages are indispensable requirements of VHSE. This is because of the fact that the VHSE students need to be provided a lot of training outside the school premises for developing industry related skills relevant to various vocational areas and this can be achieved only through proper School Industry Linkage. Moreover School Industry Linkages can provide opportunities to pass outs to take up employment in the firms involved in such linkages. Clauses relating to this can be included in the Memorandum of Understanding (MOU) signed between the school and the firm.

The *table: 6.92* shows the establishment of the School Industry Linkages (SIL) in the schools. The establishment of SIL in 38.5% of the schools is ‘very poor’ and in 61.5% of the schools it is ‘poor’. No school has ‘average’, ‘good’ or ‘very good’ SIL. It is clear that SIL which is very important for providing real life training to vocational students is not established properly in the state.

Table: 6.92 Establishment of School Industry Linkage

Establishment	Frequency	Percent	Cumulative Percent
Very Poor	15	38.5	38.5
Poor	24	61.5	100.0
Total	39	100.0	

The poor state of the School Industry Linkages in the state can be attributed to the lack of availability firms, lack of unwillingness from the part of firms, lack of awareness of schools, lack of proper guidelines, support and monitoring from the part of authorities, financial constraints etc. So the department should take initiatives in finding out firms and signing of Memorandum of Understanding (MOU) between the schools and the industries and proper guidelines should be given to the schools regarding this. Adequate funds should also be allocated for this.

Real Life Training Facility Score

Now the analysis of the ‘Real Life Training Facility Score’ arrived at based on the sub-dimension scores is done.

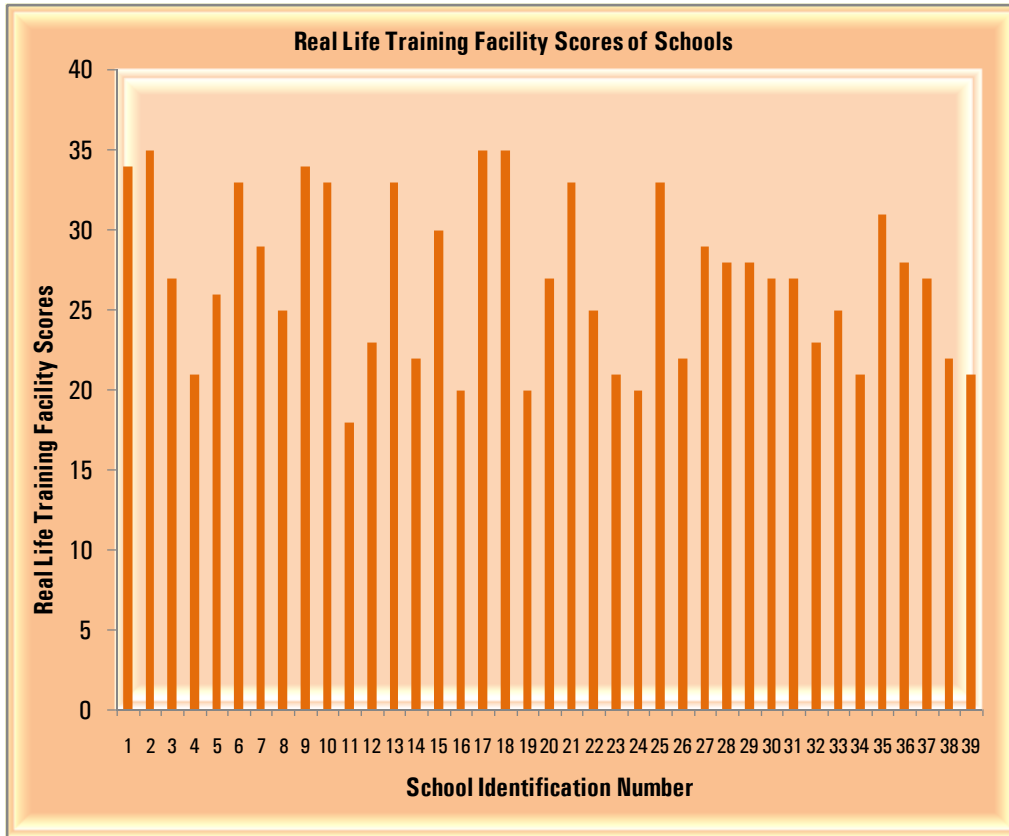
The *table: 6.93* gives the ‘Real Life Training Facility Scores’ of the 39 schools. The maximum attainable score value is 50. *The mean value is 26.96 and the standard deviation is 5.12 with a mean percentage score of 53.92. The minimum value obtained is 18 and the maximum value obtained is 35.* The column chart provides a better view (*Figure: 6.9*). It can be seen that the mean percentage score is

just above 50 indicating that the situation is not very good. Differences can be seen among the schools with respect to this score. These differences can be due to differences in the availability of funds, initiatives taken by the school authorities and teachers.

Table: 6.93 Real Life Training Facility Scores of Schools

School ID Number	Score	School ID Number	Score
1	34	21	33
2	35	22	25
3	27	23	21
4	21	24	20
5	26	25	33
6	33	26	22
7	29	27	29
8	25	28	28
9	34	29	28
10	33	30	27
11	18	31	27
12	23	32	23
13	33	33	25
14	22	34	21
15	30	35	31
16	20	36	28
17	35	37	27
18	35	38	22
19	20	39	21
20	27	Total	1051

Figure: 6.9 Column Chart Showing the Real Life Training Facility Scores of Schools

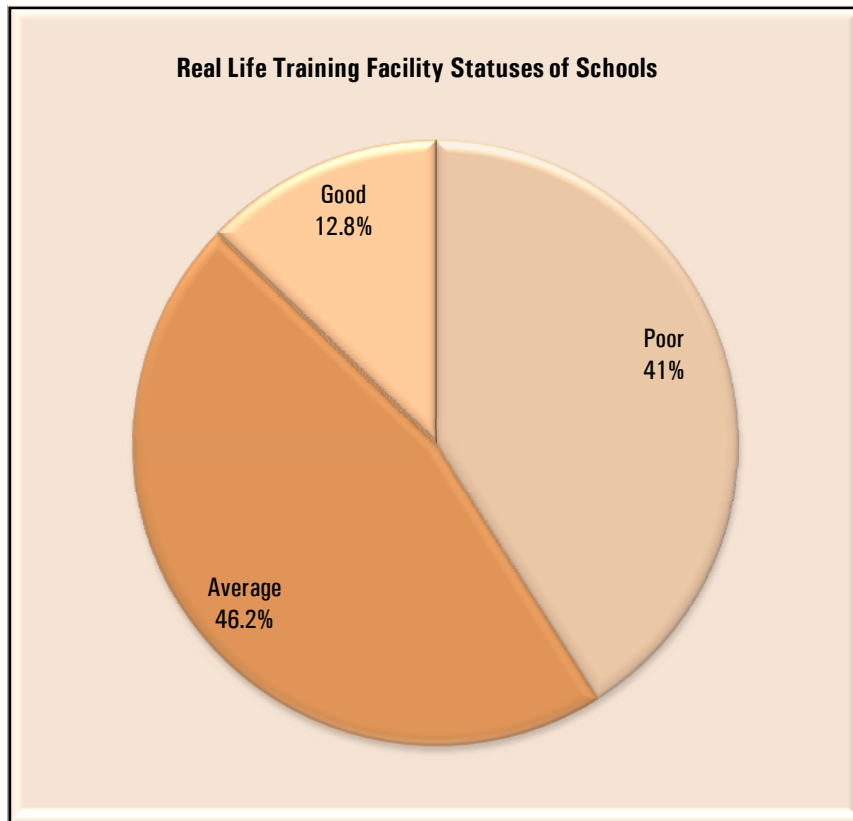


The schools with Real Life Training Scores ranging from 10-18, 18-26, 26-34, 34-42 and 42-50 have been placed into five different categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ respectively to facilitate their comparison. This is shown in the *table: 6.94*. 41% of schools are placed in the ‘poor’ category and 46.2% in the ‘average’ category and only 12.8% in the ‘good’ category. No school belongs to the ‘very good’ category. The pie chart provides a better view (*Figure: 6.10*). Therefore this particular facility is not very good in the schools and needs to be improved. Factors such as lack of support from the department, lack of proper guidelines or monitoring, financial constraints, lack of awareness etc. are behind the poor state of this facility in the VHS schools.

Table: 6.94 Real Life Training Facility Statuses of Schools

Status	Frequency	Percent	Cumulative Percent
Poor	16	41.0	41.0
Average	18	46.2	87.2
Good	5	12.8	100.0
Total	39	100.0	

Figure: 6.10 Pie Chart Showing the Real Life Training Facility Statuses of Schools



The above analysis has revealed that the real life training facilities are poor and need a lot of improvement in the VHS schools of Kerala. This facility is vital to the job related skill development of the students and suitable measures should be taken to improve this facility in the VHS schools of Kerala.

6.4.4 Analysis of the Career Guidance and Counselling Services

The ultimate aim of any educational training programme is the development of the Human Resources (HR). Imparting of knowledge and skills alone cannot guarantee the fulfilment of this objective, especially for a training programme like VHSE where the pass outs are usually of younger age groups with limited support from the families for entering the world of work or for selecting the right course for higher studies. There should be a wilful effort to direct each and every individual along a definite and pre-determined path. It is nothing but the career path. In short proper guidance should be provided for directing them through the right career path. Here lies the importance of the Career Guidance and Counselling Services in the VHS schools. More importantly these efforts should not be confined to the two year period of study of the students in the schools, but should continue even after they pass out from the schools. To be precise follow-up activities should also be a part of the Career Guidance and Counselling Services. Lack of proper Career Guidance and Counselling Services was identified as major issue with the Vocational Education programme in India by ORG (1996)²⁶⁰. The following paragraphs describe the importance of guidance and counselling services in vocational education.

Borgen (1984)²⁶¹ pointed out that in the USA, vocational counselling has been and continues to be one of the most vigorous areas in the field of guidance and counselling. "Research on all possible aspects of career guidance and career counselling has been accomplished and the vocational intervention literature is so large that it can be described as a catalogue of methods" (Meier 1991)²⁶². According to (Betz 1991)²⁶³ "Research on guidance is done on diverse and multiple special groups such as women, racial and ethnic minorities, adults, and the aging in addition to the mainstream".

In the USSR, problems of vocational orientation are taking priority because of the ongoing radical socio-economic changes in the country. After that, though a department of vocational guidance was established in Leningrad, the vocational guidance services were not integrated into the school system. Gradually, however, during the late 1980s vocational guidance was made an integral part of the school system. This led to research efforts in the field and research accompanied the guidance work on changes in regard to contents and functions under the conditions of the transition to market economy; elaboration of criteria for estimation of efficacy of vocational guidance work (Nowikowa, 1991)²⁶⁴.

The analysis of Career Guidance and Counselling Services includes three sub-dimensions, VIZ. 'Functioning of the Career Guidance and Counselling Cell (CGCC)', 'Follow up Activities' and 'Functioning of the Old Students Association (OSA)'.

Functioning of the Career Guidance and Counselling Cell

Career Guidance and Counselling Cells (CGCC) are aimed at providing guidance and counselling to VHSE students and pass outs and to direct them through the right career path. This is very important for a job oriented course like VHSE. CGCC can provide the right direction to the Career Guidance and Counselling efforts of VHS schools. CGCCs were started only very late in the VHS schools of the state. Directions regarding this have been issued to schools and funds allotted. A teacher is the in-charge of the CGCC and is called the Career Master.

Table: 6.95 Functioning of the Career Guidance and Counselling Cell

Functioning	Frequency	Percent	Cumulative Percent
Very Poor	10	25.6	25.6
Poor	22	56.4	82.1
Average	7	17.9	100.0
Total	39	100.0	

The *table: 6.95* above shows the functioning of the Career Guidance and Counselling Services (CGCS) in the schools. The functioning in 25.6% of the schools is 'very poor' and in 56.4% of the schools it is 'poor'. The functioning is 'average' in 17.9% of schools. No school has a 'good' or 'very good' CGCS. It is clear that CGCS which is very important for vocational students for the successful development of a career path is not functioning very well in the state.

Follow-up Activities

Follow-up activities are aimed at tracking the career path of VHSE pass outs and providing them with adequate support and guidance for a career growth. A comprehensive database of the pass outs and a continuous monitoring of the career development of the pass outs as well as the job and higher education markets are necessary for this. There should be frequent communication between the school and the pass outs. In short this is a very important activity requiring some serious efforts.

The *table: 6.96* shows the follow up activities done in the schools to track the career path of the students and the availability of a database of pass outs. It is really surprising that only one out of the 39 schools (2.6%) have done something with regard to this aspect. One of the reasons for this is that there are no guidelines from the VHSE department.

Table: 6.96 Follow-up Activities

Availability	Frequency	Percent	Cumulative Percent
Very Poor	38	97.4	97.4
Poor	1	2.6	100.0
Total	39	100.0	

Functioning of the Old Students Association

Old Students Associations are functioning in a large number of educational institutions. But very few VHS schools have old students associations. These associations can do a lot in the career development of VHSE pass outs like organising career fairs, disseminating information regarding job opportunities, conducting training camps, career workshops etc. in addition of having a database of pass outs. Understanding its importance, the VHSE department has recently given directions to all the VHS schools for forming Old Students Associations.

The *table: 6.97* shows the functioning of the Old Students Association (OSA) in the schools. Only one out of the 39 schools (2.6%) has an OSA of VHSE pass outs and this needs to be improved. It is clear that all the schools have not taken the direction from the VHSE department seriously. The VHSE department should take more active role in the formation of Old Students Associations and should monitor their functioning.

Table: 6.97 Functioning of Old Students Association

Functioning	Frequency	Percent	Cumulative Percent
Very Poor	38	97.4	97.4
Average	1	2.6	100.0
Total	39	100.0	

Career Guidance and Counselling Facility Score

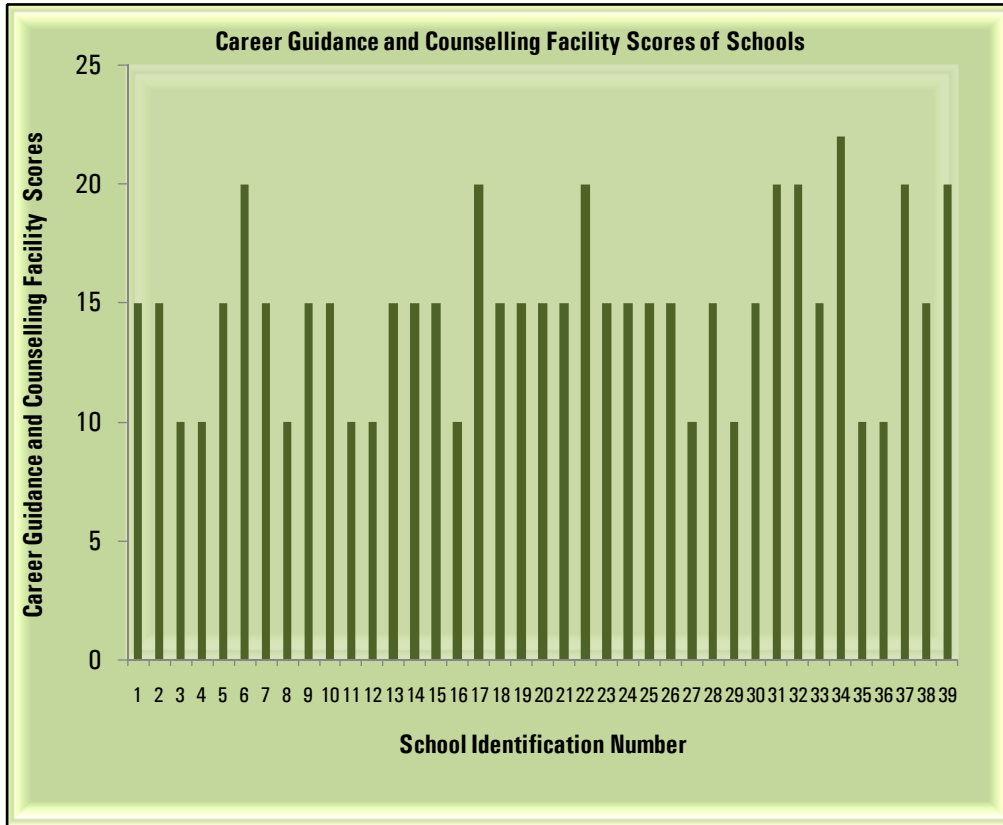
The *table: 6.98* gives the distribution of the schools based on the Career Guidance and Counselling Scores. The maximum attainable score value is 50. The column chart provides a clearer view (*Figure: 6.11*). It is clear that all the schools have scores below 25 which is half of the maximum attainable value. *The mean value is 14.79 and the standard deviation is 3.53 with a mean*

percentage score of 29.58. The minimum value obtained is 10 and the maximum value is 22. It can be seen that the mean percentage score is much less than 50 indicating the very poor state of this dimension. Differences are seen among the schools as far as the scores are concerned. The reasons for these differences can be differences in the financial statuses, differences in the initiatives from teachers etc.

Table: 6.98 Career Guidance and Counselling Facility Scores of Schools

School ID Number	Score	School ID Number	Score
1	15	21	15
2	15	22	20
3	10	23	15
4	10	24	15
5	15	25	15
6	20	26	15
7	15	27	10
8	10	28	15
9	15	29	10
10	15	30	15
11	10	31	20
12	10	32	20
13	15	33	15
14	15	34	22
15	15	35	10
16	10	36	10
17	20	37	20
18	15	38	15
19	15	39	20
20	15	Total	577

Figure: 6.11 Column Chart Showing the Career Guidance and Counselling Facility Scores of Schools



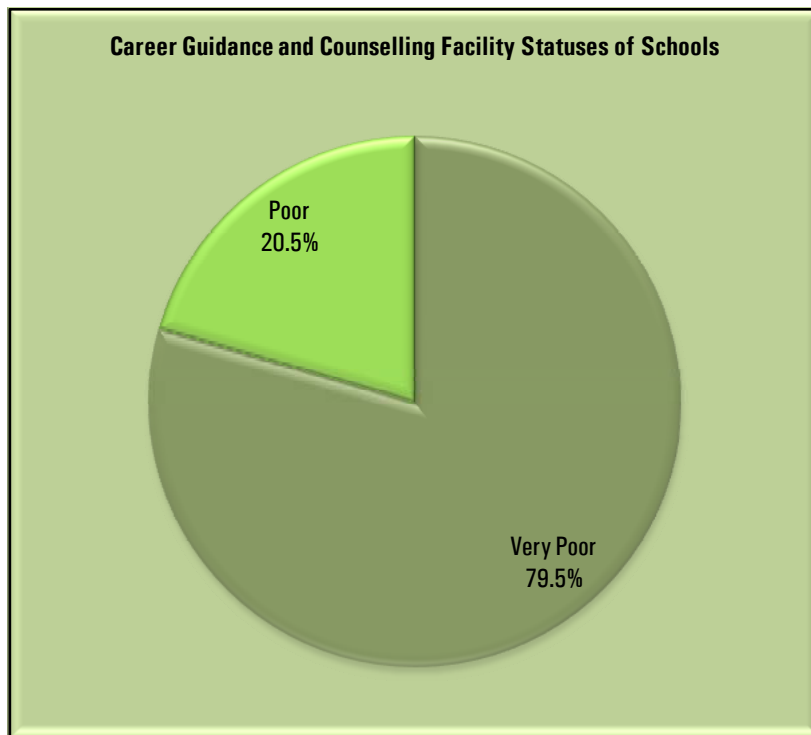
The schools with Career Guidance and Counselling Scores ranging from 10-18, 18-26, 26-34, 34-42 and 42-50 have been placed into five different categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ respectively to facilitate their comparison. This is shown in the *table: 6.99*. Career Guidance and Counselling Services are ‘very poor’ in 79.5% of the schools and ‘poor’ in 20.5% of the schools. The pie chart provides a clearer view (*Figure: 6.12*). Overall this is the worst facility as far as training and support facilities of the VHS schools are concerned. The reasons for this are financial constraints, lack of proper training in Career Guidance and Counselling to teachers, lack of proper guidelines and monitoring from the

authorities and lack of awareness among the teachers regarding the importance Career Guidance and Counselling.

Table: 6.99 Career Guidance and Counselling Facility Statuses of Schools

Status	Frequency	Percent	Cumulative Percent
Very Poor	31	79.5	79.5
Poor	8	20.5	100.0
Total	39	100.0	

Figure: 6.12 Pie Chart Showing the Career Guidance and Counselling Facility Statuses of Schools



From the above analysis it is very clear that career guidance and counselling facility is not at all satisfactory in the VHS schools of Kerala. Most of the schools haven't done anything in this regard. So there is an urgent need to improve this facility in the VHS schools of Kerala.

6.4.5 Analysis of the Overall Training and Support Facilities

Finally a score named ‘Training and Support Facility Score’ of each school was developed which is given in the table: 6.100 below.

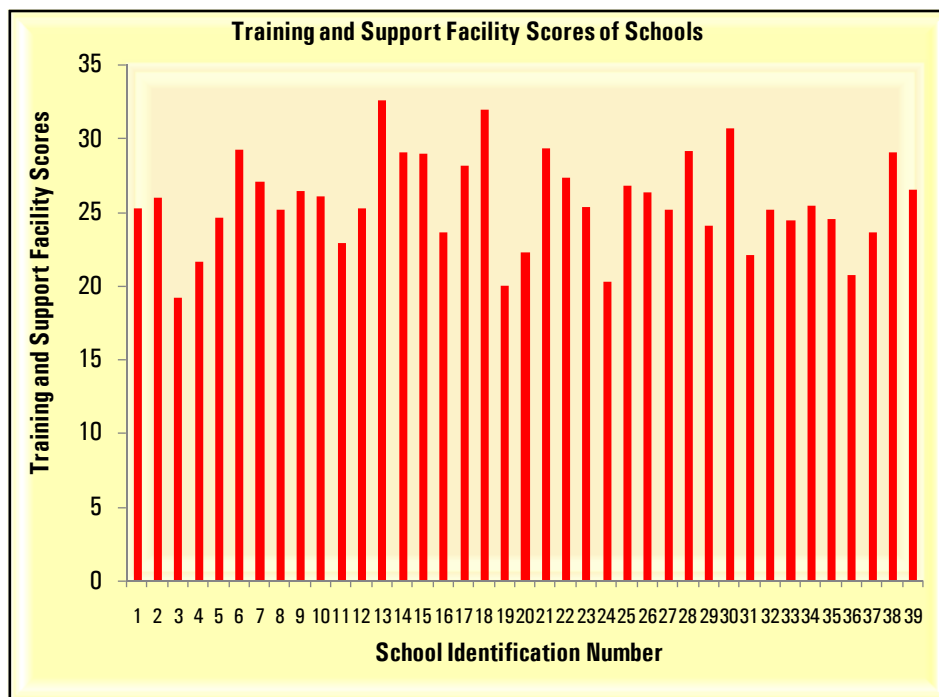
Table: 6.100 Training and Support Facility Scores of Schools

School ID Number	Score	School ID Number	Score
1	25.3	21	29.4
2	26.0	22	27.4
3	19.2	23	25.4
4	21.7	24	20.3
5	24.7	25	26.8
6	29.3	26	26.4
7	27.1	27	25.2
8	25.2	28	29.2
9	26.5	29	24.1
10	26.1	30	30.7
11	22.9	31	22.1
12	25.3	32	25.2
13	32.6	33	24.5
14	29.1	34	25.5
15	29.0	35	24.6
16	23.7	36	20.8
17	28.2	37	23.7
18	32.0	38	29.1
19	20.0	39	26.6
20	22.3	Total	1003.2

The ‘Training and Support Facility Score’ was formed by taking all the four dimension scores described in the previous paragraphs VIZ. Infrastructure Facility Score, Training Personnel Score, Real Life Training Facility Score, and Career Guidance and Counselling Facility Score, which gives a combined measure of all the above dimensions and sub-dimensions related to training facilities and thus helps to arrive at an overall measure of the training facilities of the schools. (Method of calculating the score is given in chapter I)

The *table: 6.100* gives the distribution of the schools based on the Training and Support Facility Scores. The maximum score obtained is 32.6 and the minimum score obtained is 19.2 out of a maximum of 50. The column chart gives a better idea (*Figure: 6.13*). Differences are seen among the schools as far as the Training and Support Facility Scores are concerned

Figure: 6.13 Column Chart Showing the Training and Support Facility Scores of Schools



The *table: 6.101* given below gives the mean score, mean percentage score and standard deviation of the Training and Support Facility Scores of the schools. *The mean value is 25.72 and the standard deviation is 3.20 with a mean percentage score of 51.44.* It can be seen that the mean percentage score is only just above 50 indicating that Training and Support Facilities of the VHS schools in Kerala are not adequate.

Table: 6.101 Mean Training and Support Facility Scores of the VHS Schools

Mean	Mean Percentage Score	Standard Deviation
25.72	51.44	3.20

To test whether the information provided in the above table (Table: 6.101) that the Training and Support Facility Scores of the VHS schools are not adequate holds true for the population, the hypothesis is formulated that the mean Training and Support Facility Scores of the schools is 35 (70% of the maximum score) against it is less than 35. Accordingly the following hypothesis is tested.

Testing of Hypothesis

H₀: *The mean Training and Support Facility Score of the Vocational Higher Secondary schools in Kerala is 35 on the Training and Support facility Scale used in this study.*

H₁: *The mean Training and Support Facility Score of the Vocational Higher Secondary schools in Kerala is less than 35 on the Training and Support facility Scale used in this study.*

The above hypothesis is tested using the one sample t-test. *The results of the one sample t-test gives a t-value of -8.376 with a p-value of <0.001 at 5% significance level which is less than 0.05 and since the t-value is less than -*

1.686, the null hypothesis is rejected and the alternative hypothesis is accepted that the mean Training and Support Facility Score of the VHS schools is significantly lower than the test value of 35 (*Table: 6.102*).

Table: 6.102 One Sample t-test of the Mean Training and Support Facility Score of VHS Schools

<i>t</i>	df	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
-8.376	38	< 0.001	-4.3026	-5.3425	-3.2627

The schools with Training and Support Facility Scores ranging from 10-18, 18-26, 26-34, 34-42 and 42-50 have been placed into five different categories, VIZ. ‘very poor’, ‘poor’, ‘average’, ‘good’ and ‘very good’ respectively to facilitate their comparison.

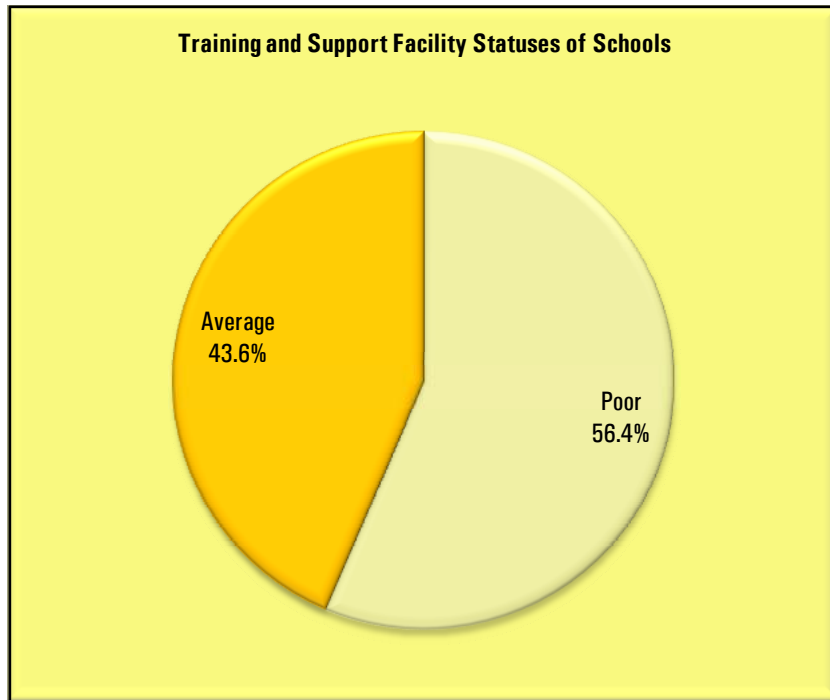
Table: 6.103 Training and Support Facility Statuses of Schools

Status	Frequency	Percent
Poor	22	56.4
Average	17	43.6
Total	39	100.0

The *table: 6.103* above shows that 56.4% of the schools are rated ‘poor’ based on this score and the remaining 43.6% are rated ‘average’. No school is rated ‘good’ or ‘very good’. The pie chart provides a better view (*Figure: 6.14*). It is obvious that the training facilities in the schools in the state are poor and need a lot of improvement. The findings are similar to that of the previous studies. Not many improvements have taken place during the past few years. It also suggests that the recommendations of the previous studies have not been implemented fully. The reasons could be financial constraints, lack of proper

monitoring, lack of support and guidelines from the department, procedural delays, lack of proper training, lack of awareness etc.

Figure: 6.14 Pie Chart Showing the Training and Support Facility Statuses of Schools



6.4.6 Comparative Analysis of the Training and Support Facility Statuses of Schools

Having arrived at a measure (score) of the training facilities of the schools, it will be useful to make a comparison of the Training and Support Facility Scores of the schools from different sectors, different districts and different localities to see whether there are any significant differences. The following paragraphs present such an analysis.

The *table: 6.104* below shows that the mean Training and Support Facility Scores of schools from private sector is 27.75 and that from government schools is 24.79 with respective standard deviations of 3.25 and

2.79. The respective mean percentage scores are 55.49 and 49.57. The Training and Support Facility Scores of both private and government schools are low as indicated by the low mean percentage scores. The mean is slightly higher for schools from private sector when compared with those from government sector. *The results of the independent sample t-test show a t-value of 2.907 and a p-value of 0.006 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there is significant difference between the Training and Support Facility Scores of schools from private and government sectors. Since the t-value is higher than 1.687, it is also concluded that the Training and Support Facility Scores of private schools is significantly higher than that of the government schools.

Table: 6.104 t-test Based on the Training and Support Facility Scores of Private and Government Schools

Type of School	Mean	Mean % Score	Std. Deviation	t	df	Sig. (2-tailed)
Private	27.75	55.49	3.25	2.907	37	0.006
Government	24.79	49.57	2.79			

The *table: 6.105* given below shows the mean scores, mean percentage scores, and standard deviations of the Training and Support Facility Scores of schools from different districts. The mean is 26.30 for Kollam, 25.58 for Thrissur, and 24.66 for Kozhikkode out of a maximum possible score of 50 with standard deviations of 3.40, 3.46, and 2.42 respectively. The mean percentage score is 52.59 for Kollam, 51.15 for Thrissur, and 49.32 for Kozhikkode. The mean percentage scores are around 50 for schools from all the three districts indicating inadequate Training and Support Facility levels. It is clear that there is not much difference among the mean scores of schools from different districts. Further analysis was done using One-Way ANOVA to study the differences. The results of the One-Way ANOVA given below show an F-value of 0.784 with a p-value of 0.464 at

5% significance level. (Table: 6.106). Since the p-value is higher than 0.05 it is concluded that there are no significant differences among the different districts with respect to the Training and Support Facility Scores.

Table: 6.105 Means of the Training and Support Facility Scores of Schools from Different Districts

District		Total Training and Support Facility Score
Kollam	Mean	26.30
	Mean % Score	52.59
	Std. Deviation	3.40
Thrissur	Mean	25.58
	Mean % Score	51.15
	Std. Deviation	3.46
Kozhikkode	Mean	24.66
	Mean % Score	49.32
	Std. Deviation	2.42
Total	Mean	25.70
	Mean % Score	51.39
	Std. Deviation	3.21

Table: 6.106 One-Way ANOVA of the Training and Support Facility Scores of Schools from Different Districts

Independent Variable		Sum of Squares	df	Mean Square	F	Sig.
Total Training and Support Facility Score	Between Groups	16.321	2	8.160	0.784	0.464
	Within Groups	374.739	36	10.409		
	Total	391.060	38			

The table: 6.107 below shows that the mean Training and Support Facility Scores of schools located in Panchayath is 26.38, that in Municipality is 27.03 and that in Corporation is 22.30 with respective standard deviations of 3.02, 2.17 and 2.12. The respective mean percentage scores are 52.76, 54.07, and 44.60. The

mean is low for schools from Corporation when compared with Panchayath and Municipality. Further analysis was done using One-Way ANOVA.

Table: 6.107 Means of Training and Support Facility Scores of Schools from Different Localities

Location of School		Total Training and Support Facility Score
Panchayath	Mean	26.38
	Mean % Score	52.76
	Std. Deviation	3.02
Municipality	Mean	27.03
	Mean % Score	54.07
	Std. Deviation	2.17
Corporation	Mean	22.30
	Mean % Score	44.60
	Std. Deviation	2.12
Total	Mean	25.70
	Mean % Score	51.39
	Std. Deviation	3.21

Given below are the results of the One-Way ANOVA. *It shows an F-value of 6.154 with a p-value of 0.005 at 5% significance level (Table: 6.108).* Since the p-value is less than 0.05 it is concluded that there are significant differences among the Training and Support Facility Scores of schools located in different localities. *Tukey HSD Multiple Comparison Test* was done to study paired differences.

Table: 6.108 One-Way ANOVA of Training and Support Facility Scores of Schools from Different Localities

Independent Variable		Sum of Squares	df	Mean Square	F	Sig.
Total Training and Support Facility Score	Between Groups	99.635	2	49.818	6.154	0.005
	Within Groups	291.424	36	8.095		
	Total	391.060	38			

The results of the *Tukey HSD Multiple Comparison Test* show that the difference is significant only between Corporation and Panchayath (*Table: 6.109*). There are no significant differences among the other combinations.

Table: 6.109 Tukey HSD Multiple Comparison Test for the Training and Support Facility Scores of Schools from Different Localities

(I) Locality	(J) Locality	Mean Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Panchayath	Municipality	0-.6540	1.72555	0.924	-4.8718	3.5637
	Corporation	4.0793(*)	1.19816	0.005	1.1507	7.0080
Municipality	Panchayath	0.6540	1.72555	0.924	-3.5637	4.8718
	Corporation	4.7333	1.96337	0.054	0-.0657	9.5324
Corporation	Panchayath	-4.0793(*)	1.19816	0.005	-7.0080	-1.1507
	Municipality	-4.7333	1.96337	0.054	-9.5324	0.0657

(* The mean difference is significant at the .05 level)

Having done the differential analysis of the Training and Support Facility Scores with respect to variables like type of school, district and location of school, it is not out of place do the same for the four individual dimensions of the Training and Support Facility like Infrastructure, Training Personnel, Real Life Training and Career Guidance and Counselling.

The *table: 6.110* given below shows the mean Training and Support Facility Dimension Scores of the schools from private and government schools. It is clear that there is not much difference among the dimension scores except for the Training Personnel Score which is higher in private schools (41.67) when compared with government schools (30.04). The results of the independent sample t-test shows t-values of -0.079, 8.543, -0.825 and -0.737 with p-values of 0.938, <0.001, 0.415 and 0.446 respectively for Infrastructure Facility, Training Personnel, Real Life Training Facility and Career Guidance and Counselling Facility at 5% significance level. Only the p-value for Training Personnel is below 0.05. So it is concluded that there is significant difference only in the Training Personnel Scores of schools from private and government sectors and there are no significant differences in the Infrastructure Facility, Real Life Training Facility and Career Guidance and Counselling Facility Scores.

Table: 6.110 t-test Based on the Training and Support Facility Dimension Scores of Private and Government Schools.

Training and Support Facility Dimension	Type of School	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Infrastructure Facility	Private	12	24.3750	6.85607	-0.079	37	0.938
	Government	27	24.5370	5.49637			
Training Personnel	Private	12	41.6667	3.74975	8.543	37	< 0.001
	Government	27	30.0370	3.99501			
Real Life Training Facility	Private	12	25.5000	5.71282	-0.825	37	0.415
	Government	27	27.0000	5.03068			
Career Guidance and Counselling Facility	Private	12	14.1667	3.58870	-0.737	37	0.466
	Government	27	15.0741	3.52928			

The *table: 6.111* given below shows the mean scores, mean percentage scores and standard deviations of the Training and Support Facility Dimension Scores of schools from different districts. Among the four dimensions, the highest mean percentage scores are seen for quality and availability of training

personnel and lowest mean percentage scores are seen for career guidance and counselling facility from all the three districts.

Table: 6.111 Means of Training and Support Facility Dimension Scores of Schools from Different Districts.

District		Infrastructure Facility	Training Personnel	Real Life Training Facility	Career Guidance and Counselling Facility
Kollam	Mean	24.14	35.44	28.22	13.89
	Mean % Score	48.28	70.89	56.44	27.78
	Std. Deviation	5.89	6.96	5.85	3.23
Thrissur	Mean	25.58	32.83	25.67	14.58
	Mean % Score	51.17	65.67	51.33	29.17
	Std. Deviation	6.02	5.49	5.12	2.57
Kozhikkode	Mean	23.72	31.00	24.33	16.89
	Mean % Score	47.44	62.00	48.67	33.78
	Std. Deviation	6.04	7.16	2.78	4.57
Total	Mean	24.49	33.62	26.54	14.79
	Mean % Score	48.97	67.23	53.08	29.59
	Std. Deviation	5.86	6.68	5.22	3.53

For Infrastructure Facility, the highest mean percentage score of 51.17 is for Thrissur district and the lowest score of 47.44 is for Kozhikkode district (*Table: 6.111*). For Training Personnel the highest mean percentage score of 70.89 is for Kollam district and the lowest score of 62.00 is for Kozhikkode district. For Real Life Training the highest mean percentage score of 56.44 is for Kollam district and the lowest score of 48.67 is for Kozhikkode district. For Career Guidance and Counselling, the highest mean percentage score of 33.78 is for Kozhikkode district and the lowest score of 27.78 is for Kollam district. There is not much difference among the mean percentage scores of the four dimensions among the three districts. Further analysis was done using One-Way ANOVA to establish the initial findings.

The results of the One-Way ANOVA given below (*Table: 6.112*) show an F-value of 0.307 for Infrastructure Facility, 1.486 for Training Personnel, 2.007 for Real Life Training Facility and 2.361 for Career Guidance and Counselling Facility with respective p-values of 0.737, 0.240, 0.149 and, 0.109 at 5% significance level. Since all the p-values are higher than 0.05 it is concluded that there are no significant differences among the different districts with respect to the Training and Support Facility Dimension Scores.

Table: 6.112 One-Way ANOVA of the Training and Support Facility Dimension Scores of Schools from Different Districts

Training and Support Facility Dimension		Sum of Squares	df	Mean Square	F	Sig.
Infrastructure Facility	Between Groups	21.869	2	10.934	0.307	0.737
	Within Groups	1280.875	36	35.580		
	Total	1302.744	38			
Training Personnel	Between Groups	129.120	2	64.560	1.486	0.240
	Within Groups	1564.111	36	43.448		
	Total	1693.231	38			
Real Life Training Facility	Between Groups	103.915	2	51.957	2.007	0.149
	Within Groups	931.778	36	25.883		
	Total	1035.692	38			
Career Guidance and Counselling	Between Groups	54.776	2	27.388	2.361	0.109
	Within Groups	417.583	36	11.600		
	Total	472.359	38			

The *table: 6.113* given below shows the mean scores, mean percentage scores and standard deviations of the Training and Support Facility Dimension Scores of schools from different localities. Among the four dimensions, highest mean percentage scores are seen for Training Personnel and lowest mean

percentage scores are seen for Career Guidance and Counselling Facility from all the three localities.

Table: 6.113 Means of Training and Support Facility Dimension Scores of Schools from Different Localities.

District		Infrastructure Facility	Training Personnel	Real Life Training Facility	Career Guidance and Counselling Facility
Panchayath	Mean	25.00	34.79	27.48	14.72
	Mean % Score	50.00	69.59	54.97	29.45
	Std. Deviation	5.78	6.59	5.26	3.39
Municipality	Mean	23.33	37.67	25.33	18.33
	Mean % Score	46.67	75.33	50.67	36.67
	Std. Deviation	6.75	5.69	6.66	2.89
Corporation	Mean	22.86	27.00	23.14	13.57
	Mean % Score	45.71	54.00	46.29	27.14
	Std. Deviation	6.41	1.63	3.18	3.78
Total	Mean	24.49	33.62	26.54	14.79
	Mean % Score	48.97	67.23	53.08	29.59
	Std. Deviation	5.86	6.68	5.22	3.53

For Infrastructure Facility, the highest mean percentage score of 50.00 is for Panchayath and the lowest score of 45.71 is for Corporation (*Table: 6.113*). For Training Personnel the highest mean percentage score of 75.33 is for Municipality and the lowest score of 54.00 is for Corporation. For Real Life Training the highest mean percentage score of 54.97 is for Panchayath and the lowest score of 46.29 is for Corporation. For Career Guidance and Counselling, the highest mean percentage score of 36.67 is for Municipality and the lowest score of 27.14 is for Corporation. There is not much difference among the mean

percentage scores of the four dimensions among the three localities except for Training Personnel which is low in Corporation when compared with Municipality and Panchayath. Further analysis was done using One-Way ANOVA to establish the initial findings.

Table: 6.114 One-Way ANOVA of the Training and Support Facility Dimension Scores of Schools from Different Localities

Training and Support Facility Dimension		Sum of Squares	df	Mean Square	F	Sig.
Infrastructure Facility	Between Groups	30.220	2	15.110	0.427	0.655
	Within Groups	1272.524	36	35.348		
	Total	1302.744	38			
Quality and Availability of Training Personnel	Between Groups	395.805	2	197.903	5.491	0.008
	Within Groups	1297.425	36	36.040		
	Total	1693.231	38			
Real Life Training Facility	Between Groups	110.927	2	55.464	2.159	0.130
	Within Groups	924.765	36	25.688		
	Total	1035.692	38			
Career Guidance and Counselling	Between Groups	48.185	2	24.092	2.045	0.144
	Within Groups	424.174	36	11.783		
	Total	472.359	38			

The results of the one-way ANOVA given above in *table: 6.114* show an F-value of 0.427 for Infrastructure Facility, 5.491 for Training Personnel, 2.159 for Real Life Training Facility and 2.045 for Career Guidance and Counselling Facility with respective p-values of 0.655, 0.008, 0.130 and 0.144 at 5% significance level. Since all the p-values are higher than 0.05 for all the dimensions except Training Personnel, it is concluded that there are no significant differences in the Training and Support Facility Dimension Scores among the different localities with respect

to Infrastructure Facility, Real Life Training Facility and Career Guidance and Counselling Facility, but there is significant difference with respect to Training Personnel. The reason could be the fact that the number of government schools is more in Corporation areas and it has already been seen that the Training Personnel Score is poor in government schools when compared with private schools. *Tukey HSD Multiple Comparison Test* was done to study paired differences for Training Personnel Score.

The results of the *Tukey HSD Multiple Comparison Test* show that the difference is significant between Corporation and Panchayath and Corporation and Municipality with respective p-values of 0.011 and 0.037 at 5% significance level (*Table: 6.115*). There are no significant differences between Panchayath and Municipality (p-value: 0.712).

Table: 6.115 Tukey HSD Multiple Comparison Test for the Training Personnel Scores of Schools from Different Localities

(I) Locality	(J) Locality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Panchayath	Municipality	-2.8736	3.64087	0.712	-11.7729	6.0258
	Corporation	7.7931(*)	2.52809	0.011	1.6137	13.9725
Municipality	Panchayath	2.8736	3.64087	0.712	-6.0258	11.7729
	Corporation	10.6667(*)	4.14267	0.037	0.5408	20.7926
Corporation	Panchayath	-7.7931(*)	2.52809	0.011	-13.9725	-1.6137
	Municipality	-10.6667(*)	4.14267	0.037	-20.7926	-0.5408

(* The mean difference is significant at the .05 level)

The above analysis of the training and support facilities of the VHS schools in Kerala shows that the Training and Support Facilities in general are inadequate in majority of the schools indicating that no improvements have been made to these facilities in recent times. Different kinds of training and support facilities, viz. infrastructure facility, real life training facility and career guidance and counselling facility are inadequate in majority of the schools. As far as infrastructure facilities are concerned, the major concerns are the poor statuses of some vital facilities such as library, class room and laboratory. A lot of funds have been pumped into the school education in government sector in the state in recent times in the form of MP fund, MLA fund and under some special schemes. But these funds do not seem to have benefited the VHSE sector in most of the government schools. As far as training personnel are concerned, teachers are available in all the schools but they lack any industrial exposure. Teaching experience is also low among the teachers.

Comparative analysis of the training and support facilities of schools from different districts and localities shows no significant differences. Significant differences are seen in the training and support facilities of private and government schools and schools from different localities. Training and support facilities are slightly better in private schools when compared with government schools. This is not very surprising as only private schools have training personnel appointed on a regular (permanent) basis. Surprisingly schools in Corporation areas have the lowest training and support facility when

compared with schools in Panchayath and Municipal areas. This difference is mainly in the availability of the training personnel.

In the last section (*Section II*) it was found that there were no significant differences in the awareness of students and pass outs from schools with different training and support facility statuses. But the training and support facility can have an impact on the academic achievements of the pass outs in the VHSE examination, entrepreneurship scores of the pass outs and the rate and nature of employment of the pass outs. Therefore it is important that further analysis is performed on the importance of training and support facility and its four dimensions with respect to variables like the academic achievements, entrepreneurship scores and rate and nature of employment of the pass outs. Such analyses are carried out in the following sections. *Section IV* is devoted to the analysis of the academic achievements of the students and pass outs, *Section V* is devoted to the analysis of the entrepreneurship scores of the students and pass outs and *Section VI* deals with the rate and nature of employments and higher studies of the pass outs.

SECTION IV

6.5 Academic Achievements of Students and Pass Outs

As stated in the previous sections, VHSE courses mainly target those students who are less likely to pursue higher education and want to enter some sort of employment after their schooling to help their parents in income generation. Low academic achievement in terms of the grades obtained in the qualifying examination may be one of the reasons for them to join such a vocation based course. The general impression is also not different. Therefore it is important to analyse this aspect.

The academic achievements of the pass outs in terms of the grades obtained in the VHSE public examinations can be a major factor influencing their future course of action. Therefore it is important to study the academic achievements of the pass outs and to know whether there are any relationships between the nature and rate of employment and higher studies of the pass outs and their academic achievements. Availability of adequate training and support facility at the schools can have an impact on the academic achievement of pass outs. This aspect is also studied. The following paragraphs analyse the performance of the VHSE students in terms of the grades obtained in the qualifying examinations and the academic achievements of the pass outs in terms of the grades obtained in the VHSE public examinations.

6.5.1 Academic Achievements of Students

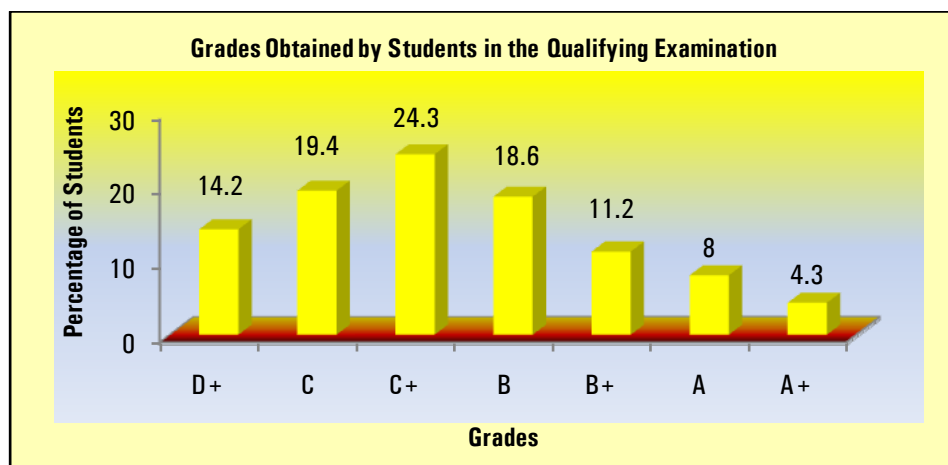
The *table: 6.116* shows the frequencies of students based on the grades obtained in the qualifying examinations (SSLC or Equivalent). The highest number of students are from the 'C+' category (24.3%) followed by 'C' (19.4%). 18.6% of students have 'B' grade, 14.2% have 'D+' grade and 11.2% have 'B+' grade. Overall, majority of the students (57.9%) have 'C+' grade or below. This is similar

to a finding in Goa where 56% of the students obtained second division (C+) (Vaid and Sen Gupta 1990)²⁶⁵. But when compared with the results of a study in 1992, which showed that 83.6% of the students had second division (C+) (Sacheti, Raisada and Verma 1992)²⁶⁶, the grades have shown improvement. At the same time, when compared with the pass outs, the grades in the qualifying examination are low for students. Only 36.2% of pass outs had grades of 'C+' or below in the qualifying examination (Refer Table: 6.124). Students with 'A' and 'A+' categories are very low (8% and 4.3% respectively). It is evident that majority of the VHSE students have only low academic achievements. The column chart provides a better view (Figure: 6.15).

Table: 6.116 Grades Obtained in the Qualifying Examination by Students

Grade	Frequency	Percent	Cumulative Percent
D+	133	14.2	14.2
C	182	19.4	33.7
C+	227	24.3	57.9
B	174	18.6	76.5
B+	105	11.2	87.7
A	75	8.0	95.7
A+	40	4.3	100.0
Total	936	100.0	

Figure: 6.15 Column Chart Showing the Grades Obtained by Students in the Qualifying Examination



A hypothesis has been formulated to test whether the sample information that is observed in the above table (*Table: 6.116*) that majority of the students have grades of 'C+' or below in the qualifying examination holds true for the population as a whole. Accordingly the following hypothesis is tested that the proportion of students with grades of 'C+' or below is 50% against it is higher than 50%.

Testing of Hypothesis

H₀: *The proportion of VHSE students in Kerala having grades of 'C+' or below in the qualifying examinations is 50% ($H_0 : p = 0.5$).*

H₁: *The proportion VHSE students in Kerala having grades of 'C+' or below in the qualifying examinations is more than 50% ($H_1 : p > 0.5$).*

The above hypothesis is tested using the z-test for proportion. *The results of the z-test for proportion give a z-value of 4.834. Since the z-value is higher than 1.645, the null hypothesis is rejected and the alternative hypothesis is accepted that the proportion of VHSE students in Kerala having grades of 'C+' or below in the qualifying examinations is more than 50%. So it is concluded that majority of the Vocational Higher Secondary students in Kerala have 'C+' grade or below in the qualifying examinations.*

The grades of the qualifying examination of students with respect to variables like gender, type of school, district, location of school, course and socio-economic background are analysed to see whether there are any significant differences.

The *table: 6.117* shows the grades obtained by the students of male and female genders in the qualifying examination. The highest percentage of students of male gender belongs to the 'C' grade (22.7%) whereas it is 'C+' grade (26.7%) for female gender. The lowest percentage of students of both the genders belongs to the 'A+' grade (4.1% for males and 4.4% for females).

There is a higher percentage of male students with lower grades ('D+' and 'C') when compared with female students and for all other higher grades the percentages of females are high. The result of *the chi-square test shows a chi-square value of 14.851 with a p-value of 0.021* that is below .05 which indicates that there are significant differences in the grades obtained by students of male and female genders in the qualifying examination. This is not surprising because generally the performance of female students is better in the qualifying examinations when compared with male students.

Table: 6.117 Grades Obtained by Male and Female Students in the Qualifying Examination

Gender		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
Male	Count	63	78	69	59	34	27	14	344
	% within Gender	18.3%	22.7%	20.1%	17.2%	9.9%	7.8%	4.1%	100.0%
Female	Count	70	104	158	115	71	48	26	592
	% within Gender	11.8%	17.6%	26.7%	19.4%	12.0%	8.1%	4.4%	100.0%
Total	Count	133	182	227	174	105	75	40	936
	% within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100.0%

The *table: 6.118* shows the grades obtained by students of private and government schools in the qualifying examination. 'C+' grade has the highest percentage of students in both private and government schools (22.4% and 25.1% respectively) and 'A+' grade has the lowest percentage (7.1% and 3% respectively). But there is a higher percentage of students with grades of 'B' or below in government schools when compared with private schools whereas the trend is reverse for higher grades ('B+', 'A' and 'A+'). The result of *the chi-square test shows a chi-square value of 30.774 with p-value of <0.001* that is below 0.05 which indicates that there are significant differences in the grades of students from private and government schools in the qualifying examination.

Table: 6.118 Grades Obtained by Students in the Qualifying Examination from Private and Government Schools

Type of School		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
Private	Count	37	44	66	49	38	39	21	294
	% within Type of School	12.6%	15.0%	22.4%	16.7%	12.9%	13.3%	7.1%	100.0%
Govt.	Count	96	138	161	125	67	36	19	642
	% within Type of School	15.0%	21.5%	25.1%	19.5%	10.4%	5.6%	3.0%	100.0%
Total	Count	133	182	227	174	105	75	40	936
	% within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100.0%

The *table: 6.119* shows the grades obtained by students from different districts in the qualifying examination. The highest percentages of students in all the three districts belong to the ‘C+’ category (25.9% for Kollam, 18.8% for Thrissur and 28.9% for Kozhikkode) and the lowest percentages of students in all the three districts belong to the ‘A+’ category (3.7% for Kollam, 6.3% for Thrissur and 2.5% for Kozhikkode) grades respectively. There is a higher percentage of students with ‘C+’ grade in schools located in Kozhikkode and Kollam districts when compared with Thrissur district where as the trend is reverse for ‘B+’, ‘A’ and ‘A+’ grades. The result of the *chi-square test* shows a *chi-square value* of 27.079 with a *p-value* of 0.008 that is below 0.05 which indicates that there are significant differences in the grades of students studying in schools located in the three districts in the qualifying examination.

Table: 6.119 Grades Obtained by Students in the Qualifying Examination from Different Districts

District		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
Kollam	Count	68	89	111	76	46	23	16	429
	% within District	15.9%	20.7%	25.9%	17.7%	10.7%	5.4%	3.7%	100%
Thrissur	Count	39	56	57	54	42	36	19	303
	% within District	12.9%	18.5%	18.8%	17.8%	13.9%	11.9%	6.3%	100%
Kozhikkode	Count	26	37	59	44	17	16	5	204
	% within District	12.7%	18.1%	28.9%	21.6%	8.3%	7.8%	2.5%	100%
Total	Count	133	182	227	174	105	75	40	936
	% within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100%

The *table: 6.120* shows the grades obtained by students studying in schools located in Panchayath, Municipality and Corporation areas in the qualifying examination.

Table: 6.120 Grades Obtained by Students in the Qualifying Examination from Different Localities

Location of School (LoS)		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
Panchayath	Count	86	110	180	134	89	62	35	696
	% within LoS	12.4%	15.8%	25.9%	19.3%	12.8%	8.9%	5.0%	100%
Municipality	Count	12	8	12	18	5	12	5	72
	% within LoS	16.7%	11.1%	16.7%	25.0%	6.9%	16.7%	6.9%	100%
Corporation	Count	35	64	35	22	11	1	0	168
	% within LoS	20.8%	38.1%	20.8%	13.1%	6.5%	0.6%	0.0%	100%
Total	Count	133	182	227	174	105	75	40	936
	%within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100%

The highest percentage of students in Panchayath belongs to 'C+' grade (25.9%). It is 'B' grade for Municipality (25%) and 'C' for Corporation (38.1%) (*Table: 6.120*). The lowest percentage of students in all the three localities belongs to the 'A+' grade (5% for Panchayath, 6.9% for Municipality and 0.0% for Corporation). There is a higher percentage of students with grades of 'C' and 'D+' in schools located in corporation when compared with Panchayath and Municipality where as the trend is reverse for higher grades except for 'C+' where the lowest percentage comes from Municipality. Some differences are seen in the students of the three localities with respect to their achievements in the qualifying examination. The result of the *chi-square test* shows a *chi-square value of 80.005 with a p-value of <0.001* that is below 0.05 which indicates that there are significant differences in the grades of students from the different localities in the qualifying examination.

The *table: 6.121* below shows the grades obtained by the students of various courses in the qualifying examination. The highest and lowest percentages of students of all the three courses belong to the 'C+' (22.9% for MRT, 22.7% for MLT and 28.0% for AAG) and 'A+' grades (5.0% for MRT, 4.4% for MLT and 3.4% for AAG) respectively. There is a higher percentage of students with grades of 'C' and 'C+' in AAG when compared with MRT and MLT whereas the trend is reverse for higher grades except for 'A'. AAG has a higher proportion of students with lower academic achievements (D+, C and C+ grades combined together) in the qualifying examination when compared with MRT and MLT courses. This is understandable because AAG is a course belonging to the fourth group (Commerce) which generally attracts lesser number of students with higher grades when compared with the first and second groups (Science). The findings have been tested with chi-square test to know whether there are any significant differences in the grades of students joining different courses. The result of *the chi-square test shows chi-square value of 47.191 with a p-value of <0.001* that is below 0.05 which indicates that there are significant differences in the grades obtained by students of various courses in the qualifying examination.

Table: 6.121 Grades Obtained by Students in the Qualifying Examination from Different Courses

Course		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
MRT*	Count	49	34	55	51	30	9	12	240
	% within Course	20.4%	14.2%	22.9%	21.3%	12.5%	3.8%	5.0%	100%
MLT**	Count	50	80	98	86	62	37	19	432
	% within Course	11.6%	18.5%	22.7%	19.9%	14.4%	8.6%	4.4%	100%
AAG***	Count	34	68	74	37	13	29	9	264
	% within Course	12.9%	25.8%	28.0%	14.0%	4.9%	11.0%	3.4%	100%
Total	Count	133	182	227	174	105	75	40	936
	% within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100%

*MRT: Maintenance and Repairs of Radio and Television, ** MLT: Medical Laboratory Technician, *** AAG: Accounting and Auditing.

The *table: 6.122* shows that there is difference in the grades obtained by the students from different Socio-economic Background (SEB) groups in the qualifying examinations. The highest percentage of students from the 'poor' and 'lower middle' SEB categories belongs to 'C+' grade (25.6% and 25.3% respectively) whereas it is 'B' grade (20.0%) in the case of students from 'upper middle' category. Majority of students from the 'poor' and 'lower middle' SEB categories have 'C+' grades or below whereas those from the 'upper middle' category have majority of students with 'B' grade or above. Higher percentage of students from 'upper middle' SEB group have grades of 'B' or above when compared with those from the 'poor' and 'lower middle' SEB groups. *The results of the chi-square test show a chi-square value of 28.770 with a p-value of 0.001 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there are significant differences in the grades obtained in the qualifying examinations by students from different SEB groups.

Table: 6.122 Grades Obtained by Students from Different SEB Groups in the Qualifying Examination

SEB Group		Grades Obtained in Qualifying Examination							Total
		D+	C	C+	B	B+	A	A+	
Poor	Count	105	140	178	131	73	51	18	696
	% within SEB Category	15.1%	20.1%	25.6%	18.8%	10.5%	7.3%	2.6%	100%
Lower Middle	Count	17	29	43	29	24	15	13	170
	% within SEB Category	10.0%	17.1%	25.3%	17.1%	14.1%	8.8%	7.6%	100%
Upper Middle	Count	11	13	6	14	8	9	9	70
	% within SEB Category	15.7%	18.6%	8.6%	20.0%	11.4%	12.9%	12.9%	100%
Total	Count	133	182	227	174	105	75	40	936
	% within Total	14.2%	19.4%	24.3%	18.6%	11.2%	8.0%	4.3%	100.0%

The following paragraphs tries to find out whether there are any significant differences in the future plans with respect to higher studies and employment of the students with different grades in the qualifying examination.

Table: 6.123 Future Plans of Students with different Grades in the Qualifying Examination

Grade		Future Plans				
		Higher Study	Self Employment	Paid Employment	Not Decided	Total
D+	Count	81	2	15	35	133
	% within Grades	60.9%	1.5%	11.3%	26.3%	100.0%
C	Count	105	19	26	32	182
	% within Grades	57.7%	10.4%	14.2%	17.6%	100.0%
C+	Count	142	22	33	30	227
	% within Grades	62.6%	9.7%	14.6%	13.2%	100.0%
B	Count	140	10	3	21	174
	% within Grades	80.5%	5.7%	1.7%	12.1%	100.0%
B+	Count	94	1	6	4	105
	% within Grades	89.5%	1.0%	5.7%	3.8%	100.0%
A	Count	53	3	14	5	75
	% within Grades	70.7%	4.0%	18.6%	6.7%	100.0%
A+	Count	38	0	2	0	40
	% within Grades	95.0%	0.0%	5.0%	0.0%	100.0%
Total	Count	653	57	99	127	936
	% within Total	69.8%	6.1%	10.6%	13.6%	100.0%

The *table: 6.123* above shows the future plans of students with different grades in the qualifying examination after VHSE. Majority of students from all the grades have higher study as their future course of action. But it is clear that a higher percentage of students with higher grades want to go for higher studies when compared with students with lower grades. 'A+' grade has the highest percentage (95%) and 'C' grade has the lowest percentage (57.7%). The trend is reverse for employment (self and wage employments combined) except for 'A' grade. 'A+' grade has the lowest percentage (5%) and 'C' grade has the highest percentage (24.6%) of students who want to enter employment straight after VHSE. The percentage of students who have not taken a decision regarding their future course of action decreases as the grades increases. So there are differences in the future plans of the students with different grades in the VHSE

examination. A higher percentage of students with higher grades in the qualifying examination prefer to pursue higher studies when compared with those with lower grades. The result of *the chi-square test shows a chi-square value of 88.167 with a p-value of <0.001* that is below .05 which indicates that there are significant differences in the future plans of students with different grades in the qualifying examinations.

Is evident from the above analysis that majority of the students have grades of 'C+' or below in the qualifying examination. Significant differences are seen in the academic achievements of male and female students, students from private and government schools, from different districts, from different localities, from different courses and from different socioeconomic backgrounds. There are significant differences in the future plans of students with respect to employment and higher studies having different grades in the qualifying examination.

6.5.2 Academic Achievements of Pass Outs

The *table: 6.124* shows the categorisation of the pass outs based on the grades obtained in the VHSE examination. The highest number of pass outs belongs to the 'B' category (47.5%) followed by 'C+' (32.3%). Representations from the 'D+', 'C', and 'B+' categories are very low. There is nobody with 'A' and 'A+' grades. A vast majority of the pass outs (92.9%) have grades of 'B' or below. Given in the brackets are the grades obtained by the pass outs in the qualifying examinations for a comparison. The column chart gives better picture (*Figure: 6.16*). It is clear that pass outs with higher grades ('B+' or above) are very few (7.1%). The z-test for proportion is done to know whether the proportion of pass outs with B+ grade or above is less than 10%. *The result*

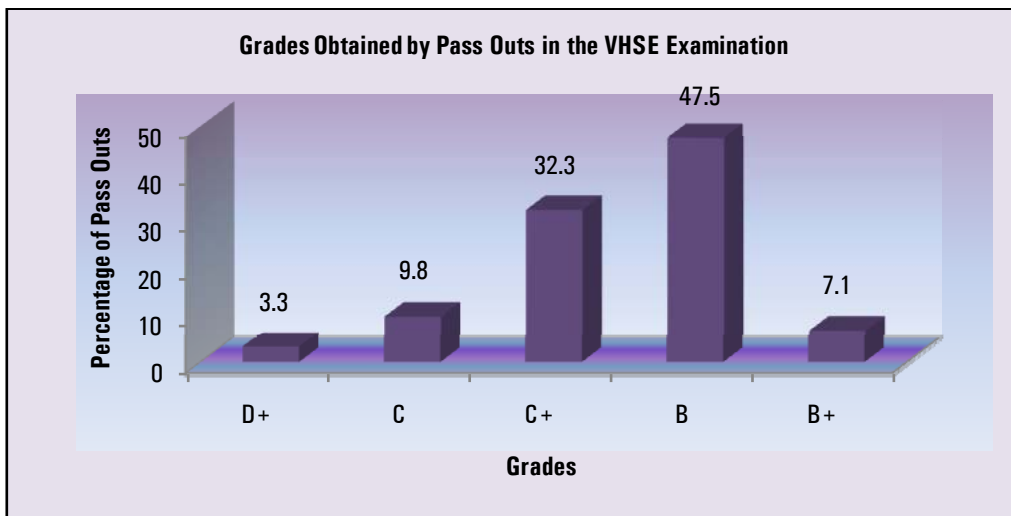
of the z-test for proportion gives a z-value of -1.962. Since the z-value is lower than -1.645, it is concluded that the proportion of pass outs with grades of 'B+' or above in the VHSE examinations is less than 10%.

Table: 6.124 Grades Obtained by Pass Outs in the VHSE Examination

Grade	Frequency	Percent	Cumulative Percent
D+	13 (0)	3.3 (0.0)*	3.3 (0.0)
C	39 (14)	9.8 (3.5)*	13.1 (3.5)
C+	128 (67)	32.3 (32.7)*	45.5 (26.2)
B	188 (90)	47.5 (40.7)*	92.9 (66.9)
B+	28 (161)	7.1 (16.1)*	100.0 (100.0)
A	0 (59)	0 (5.7)*	-
A+	0 (5)	0 (1.3)*	-
Total	396	100.0	-

*Grades of pass Outs in the Qualifying Examination are given in brackets.

Figure: 6.16 Column Chart Showing the Grades Obtained by Pass Outs in the VHSE Examination



Further analysis is carried out to know whether there are significant differences in the grades obtained by the pass outs from different genders, different types of schools, different districts, schools situated in different

localities, different courses and different socio-economic background (SEB) groups.

The *table: 6.125* shows that there is difference in the grades obtained by the pass outs belonging to male and female genders. Although the highest percentage of the pass outs from both the genders belong to the 'B' category (38.3% for males and 55.4% for females), the lowest percentage belong to 'D+' category for females (0.9%) and 'B+' for males (6%). It is very clear that higher grades are more among females when compared with males. 'B' and 'B+' grades are more among females where as 'D+', 'C' and 'C+' grades are more among males. *The results of the chi-square test show a chi-square value of 25.077 with a p-value of <0.001 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there are significant differences in the grades obtained in the VHSE examinations by male and female pass outs.

Table: 6.125 Grades Obtained by Male and Female Pass Outs in the VHSE Examination

Gender		Total					
		D+	C	C+	B	B+	Total
Male	Count	11	26	68	70	8	183
	% within Gender	6.0%	14.2%	37.2%	38.3%	4.4%	100%
Female	Count	2	13	60	118	20	213
	% within Gender	0.9%	6.1%	28.2%	55.4%	9.3%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

The *table: 6.126* shows that there is not much difference between the pass outs from government and private schools as far as the grades obtained in the VHSE examinations are concerned. Both private and government schools have the highest percentage of pass outs belonging to the 'B' grade category (45% and 48.4% respectively) and the lowest percentage of pass outs belonging to the 'D+' grade category (2.8% for Private and 3.5% for Government). 'C', 'C+' and 'B+' grades are slightly higher in private schools while all other

grades are slightly higher in government schools. *But the results of the chi-square test show a chi-square value of 0.569 with a p-value of 0.903 at 5% significance level.* Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the grades obtained in the VHSE examinations by pass outs from private and government schools.

Table: 6.126 Grades Obtained by Pass Outs from Private and Government Schools in the VHSE Examination

Type of school		Total					
		D+	C	C+	B	B+	Total
Private	Count	3	12	36	49	9	109
	% within Type of School	2.8%	11.0%	33.0%	45.0%	8.3%	100%
Government	Count	10	27	92	139	19	287
	% within Type of School	3.5%	9.4%	32.1%	48.4%	7.1%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	6.8%	100%

The *table: 6.127* shows that there is not much difference in the grades obtained by the pass outs from different districts in the VHSE examinations. All the three districts have the highest percentage of pass outs belonging to the ‘B’ grade category (50.6% for Kollam, 40.3% for Thrissur and 51.5% for Kozhikkode) and the lowest percentage of pass outs belonging to the ‘D+’ grade category (2.4% for Kollam, 4.7% for Thrissur and 3% for Kozhikkode). Percentages of students with lower grades are little bit higher in Thrissur district when compared with the other two districts. *But the results of the chi-square test show a chi-square value of 6.586 with a p-value of 0.361 at 5% significance level.* Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the grades obtained in the VHSE examinations by pass outs from different districts.

Table: 6.127 Grades Obtained by Pass Outs from Different Districts in the VHSE Examination

District		Total					Total
		D+	C	C+	B	B+	
Kollam	Count	4	15	49	85	15	168
	% within District	2.4%	8.9%	29.2%	50.6%	8.9%	100%
Thrissur	Count	6	15	48	52	8	129
	% within District	4.7%	11.6%	37.2%	40.3%	6.2%	100%
Kozhikkode	Count	3	9	31	51	5	99
	% within District	3.0%	9.1%	31.3%	51.5%	5.1%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

The *table: 6.128* shows that there are not many differences in the grades obtained by the pass outs from schools located in different localities in the VHSE examinations. Schools from all the three localities have the highest percentage of pass outs belonging to the 'B' grade category (49.1% for Panchayath, 42.4% for Municipality and 43.2% for Corporation) and the lowest percentage of pass outs belonging to the 'D+' grade category (3.1% for Panchayath, 0.0% for Municipality and 5.4% for Corporation). Panchayath has a slightly higher percentage of pass outs with 'B' grade, Municipality has higher percentage of pass outs with 'C+' and 'B+' grades, and Corporation has a slightly higher percentage of pass outs with 'C' grade when compared with the other two areas. *But the results of the chi-square test show a chi-square value of 1.005 with a p-value of 0.605 at 5% significance level.* Since the p-value is higher than 0.05 it is concluded that there are no significant differences in the grades obtained in the VHSE examinations by pass outs from different localities.

Table: 6.128 Grades Obtained by Pass Outs from Schools Located in Different Localities in the VHSE Examination

Location of School (LoS)		Total					
		D+	C	C+	B	B+	Total
Panchayath	Count	9	25	93	142	20	289
	% within LoS	3.1%	8.7%	32.2%	49.1%	6.9%	100%
Municipality	Count	0	3	13	14	3	33
	% within LoS	0.0%	9.1%	39.4%	42.4%	9.1%	100%
Corporation	Count	4	11	22	32	5	74
	% within LoS	5.4%	14.9%	29.7%	43.2%	6.8%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

The *table: 6.129* shows that there are differences in the grades obtained by the pass outs from different courses in the VHSE examinations. All the three courses have the highest percentage of pass outs belonging to the 'B' grade category (37.9% for MRT, 58.3% for MLT and 39.8% for AAG) and the lowest percentage of pass outs belonging to the 'D+' grade category (1% for MRT, 2.9% for MLT and 5.9% for AAG). Although the highest number of the pass outs from all the courses belongs to the 'B' category, MLT course has a higher percentage of 'B' grades when compared with the other two courses. MRT course has a high percentage of 'C' grades when compared with the other two courses. It is clear that the MLT pass outs have higher grades in the VHSE examination when compared with MRT and AAG courses. The reason could be the higher percentage of female pass outs for MLT course. *The results of the chi-square test show a chi-square value of 17.242 with a p-value of 0.008 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there are significant differences in the grades obtained in the VHSE examinations by pass outs from different courses.

Table: 6.129 Grades Obtained by Pass Outs from Different Courses in the VHSE Examination

Course		Total					
		D+	C	C+	B	B+	Total
MRT*	Count	1	17	38	39	8	103
	% within Course	1.0%	16.5%	36.9%	37.9%	7.8%	100%
MLT**	Count	5	12	43	102	13	175
	% within Course	2.9%	6.9%	24.6%	58.3%	7.4%	100%
AAG***	Count	7	10	47	47	7	118
	% within Course	5.9%	8.5%	39.8%	39.8%	5.9%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

*MRT: Maintenance and Repairs of Radio and Television, ** MLT: Medical Laboratory Technician
*** AAG: Accounting and Auditing.

The table: 6.130 shows that there are differences in the grades obtained by the pass outs from different Socio-economic Background (SEB) groups in the VHSE examinations. Majority of pass outs from the 'poor' SEB category have 'C+' grades (50.3%) or below whereas those from the higher categories have higher number of pass outs with 'B' grade or above - 62.1% of 'B' grades and 4.3% of 'B+' grades for 'lower middle' and 38.9% of 'B' grades and 38.9% of 'B+' grades for 'upper middle'. The results of the chi-square test show a chi-square value of 47.038 with a p-value of <0.001 at 5% significance level. Since the p-value is less than 0.05, it is concluded that there are significant differences in the grades obtained in the VHSE examinations by pass outs from different SEB groups.

Table: 6.130 Grades Obtained by Pass Outs from Different SEB Groups in the VHSE Examination

SEB Group		Total					
		D+	C	C+	B	B+	Total
Poor	Count	6	15	84	50	12	167
	% within SEB Category	3.6%	9.0%	50.3%	29.9%	7.2%	100%
Lower Middle	Count	7	22	42	131	9	211
	% within SEB Category	3.3%	10.4%	19.9%	62.1%	4.3%	100%
Upper Middle	Count	0	2	2	7	7	18
	% within SEB Category	.0%	11.1%	11.1%	38.9%	38.9%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

The *table: 6.131* shows that there are significant differences in the grades obtained by the pass outs from schools having different training and support facility statuses. The percentages of the pass outs with ‘B’ grades from schools with ‘poor’ and ‘average’ training and support facilities are 45.1% and 50.3% respectively. The percentages for the B+ grade are 3.8% for ‘poor’ category and 10.9% for ‘average’ category. It is very clear that higher grades are more among students from schools with ‘average’ training and support facilities when compared with those from ‘poor’ training and support facilities. This is once again emphasises the need to improve the training and support facilities of the VHS schools in Kerala. *The results of the chi-square test show a chi-square value of 19.268 with a p-value of 0.001 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there is relationship between the grades obtained by pass outs in the VHSE examinations and the training and the support facility statuses of their schools.

Table: 6.131 Grades Obtained by Pass Outs from Schools with Different Training and Support Facility Statuses in the VHSE Examination

Training and Support Facility (TSF) Status		Total					Total
		D+	C	C+	B	B+	
Poor	Count	12	27	70	96	8	213
	% within TSF Status	5.6%	12.7%	32.9%	45.1%	3.8%	100%
Average	Count	1	12	58	92	20	183
	% within TSF Status	0.5%	6.6%	31.7%	50.3%	10.9%	100%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100%

Having seen that there is significant difference in the grades obtained by pass outs in the VHSE examinations from schools with different training and the support facility statuses, it is worthwhile to know which all dimensions of the Training and the Support Facility (TSF) shows such a difference. The results of the *chi-square test* for the four dimensions with respect to the grades obtained by

the pass outs in the VHSE examinations are shown in the *table: 132* below. It can be seen that significant difference in grades are seen only for different levels of infrastructure facilities with a *chi-square value of 33.617 and a p-value of <0.001 at 5% significance level.* Since the p-value is less than 0.05, it is concluded that there is relationship between the grades obtained by pass outs in the VHSE examinations and the Infrastructure Facility statuses of their schools. For the other three dimensions no significant differences are seen. The chi-square values for Training Personnel, Real Life Training Facility and Career Guidance and Counselling Facility are 1.689, 3.663 and 0.502 respectively with corresponding p-values of 0.639, 0.453 and 0.778.

Table: 6.132 Chi-square Test Results Based on the Grades in the VHSE Examination of Pass Outs from schools with Different Training and Support Facility Dimension Statuses

TSF Dimension	Pearson Chi-square	Significance (2-tailed)
Infrastructure Facility	33.617	< 0.001
Training Personnel	1.689	0.639
Real Life Training Facility	3.663	0.453
Career Guidance and Counselling Facility	0.502	0.778

The *table: 6.133* shows that there are significant differences in the grades obtained by the pass outs from schools having different Infrastructure Facility statuses. The percentages of the pass outs with 'B' grade from schools with 'poor' and 'average' infrastructure facilities are 54.5% and 54.2% respectively whereas that for 'very poor' category is only 26.0%.. The percentages for the B+ grade are 5.2% for 'very poor' category, 4.0% for 'poor' category and 9.5% for 'average' category. It is very clear that 'B' grades are more among students from schools with 'poor' and 'average' infrastructure facilities when compared with those from 'very poor' infrastructure facilities. Similarly 'B+' grades are highest among students from schools with 'average'

infrastructure facilities. This once again emphasises the need to improve the infrastructure facilities of the VHS schools in Kerala.

Table: 6.133 Grades Obtained by Pass Outs from Schools with Different Infrastructure Facility Statuses in the VHSE Examination

Infrastructure Facility Status (IFS)		Total					
		D+	C	C+	B	B+	Total
Very Poor	Count	6	19	41	25	5	96
	% within IFS Status	6.3%	19.8%	42.7%	26.0%	5.2%	100.0%
Poor	Count	4	6	31	54	4	99
	% within IFS Status	4.0%	6.1%	31.3%	54.5%	4.0%	100.0%
Average	Count	3	14	56	109	19	201
	% within IFS Status	1.5%	7.0%	27.9%	54.2%	9.5%	100.0%
Total	Count	13	39	128	188	28	396
	% within Total	3.3%	9.8%	32.3%	47.5%	7.1%	100.0%

The above analysis of the academic achievements of the students and pass outs in the qualifying examinations has shown that majority of those pursuing VHSE have only lower grades in the qualifying examination indicating that those with higher grades in the qualifying examination do not prefer VHSE and those who do not get admission to the Plus Two stream seek admission to VHSE. With the number of seats available for plus-two increasing year after year, the number of students with higher grades in the qualifying examination joining VHSE is likely to decrease in the future, indication of which is already there when the grades of the students and pass outs in the qualifying examination are compared. This wouldn't have been so discouraging if the scheme was able to direct majority of its pass outs to the world of employment. That is also not happening. Majority of the students prefer higher studies immediately after VHSE. All these indicate that the efforts to popularise VHSE in the state have not yielded the desired results. There is a need to look back at the efforts of the implementing authorities in this regard.

There are significant differences in the future plans with respect to employment and higher studies of students having different grades in the qualifying examinations. A higher percentage of students with higher grades in the qualifying examination want to pursue higher studies indicating that academic achievements in the qualifying examinations do have an influence on the future course of action of the students. But the problem with VHSE in the state is that majority of those with lower grades in the qualifying are not sure about their future course of action.

The analysis of the academic achievements of the pass outs in the VHSE examination has shown that higher grades are very few among the VHSE pass outs. One of the reasons for this could be the low academic achievements of those who join the VHSE along with the added burden of additional work load. More number of pass outs with higher grades in the VHSE examination pursues higher studies when compared to those with lower grades, which is not unusual (*Refer Table: 6.215*). But what is surprising is that even those with lower grades who are not pursuing higher studies are not entering employment. Significant differences are seen in the academic achievements of the pass outs in the VHSE examination from schools with different training and support facility statuses. Higher grades are more among pass outs from schools with better training and support facilities.

SECTION V

6.6 Entrepreneurship Profiles of Students and Pass Outs

Vocational Higher Secondary Education aims at equipping its students with skills and knowledge to take up employment or start self employment in the concerned vocational areas of their study. In other words one of its objectives is to produce young entrepreneurs. Therefore entrepreneurship development of students is one of the key focus areas of VHSE. Various special

training strategies are incorporated in the VHSE curriculum to achieve this, which are discussed in the previous sections. The analysis of the entrepreneurship profile of the VHSE pass outs and students has been included as one of the objectives of this study. The entrepreneurship scale as described in Chapter I is used for this purpose.

6.6.1 Entrepreneurship Profile of Students

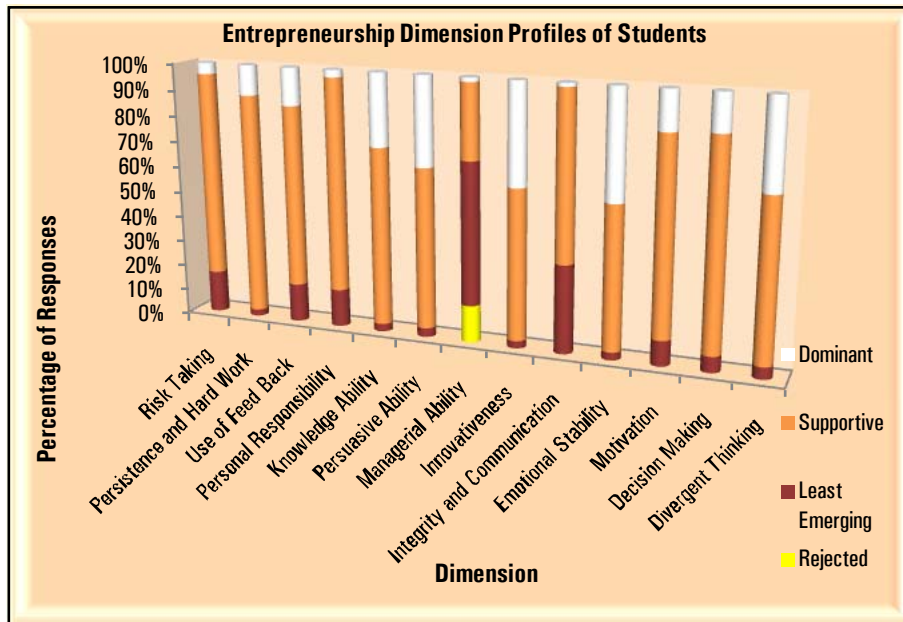
Detailed analysis of the entrepreneurship profiles of 936 students of the academic year 2007-2008 from the 39 schools selected for the study has been carried out, the details of which are given in the following paragraphs.

The *table: 6.134* shows the entrepreneurship dimension profiles of the students. None of the thirteen dimensions secured a dominant position. This is similar to what was observed by Vaidya (2002)²⁶⁷ in a study on the senior secondary students of Chandigarh. In the dominant category, *emotional stability*, *innovativeness*, and *persuasive ability* came first second and third with 41.77%, 39.10%, and 34.40% of responses respectively. It is interesting to note that some of the important dimensions of entrepreneurship such as *risk taking*, *personal responsibility*, *managerial ability and integrity and communication* showed very few responses in the dominant category. However all the dimensions except *managerial ability* showed a supportive response with the highest percentage of 85.90% for *persistence and hard work* followed by 82.69% for *personal responsibility and 79.59% for decision making*. *Managerial ability* topped the least emerging category with 55.13% followed by *integrity and communication* with 33.97% and *risk taking* with 16.24%. *Managerial ability* is the only dimension having responses in the rejected category with 14.32% of responses. The cylinder chart gives better picture (*Figure: 6.17*).

Table: 6.134 Entrepreneurship Dimension Profiles of Students

Scale Dimension	Number of Respondents(Percentage in Brackets)							
	Rejected		Least Emerging		Supportive		Dominant	
Risk Taking	0	(0.00)	152	(16.24)	744	(79.49)	40	(4.27)
Persistence and Hard Work	0	(0.00)	23	(2.46)	804	(85.90)	109	(11.65)
Use of Feed Back	0	(0.00)	139	(14.85)	660	(70.51)	137	(14.64)
Personal Responsibility	0	(0.00)	136	(14.53)	774	(82.69)	26	(2.78)
Knowledge Ability	0	(0.00)	28	(2.99)	645	(68.91)	263	(28.10)
Persuasive Ability	0	(0.00)	32	(3.42)	582	(62.18)	322	(34.40)
Managerial Ability	13	(14.32)	516	(55.13)	271	(28.95)	15	(1.60)
Innovativeness	0	(0.00)	26	(2.78)	544	(58.12)	366	(39.10)
Integrity and Communication	0	(0.00)	318	(33.97)	605	(64.64)	13	(1.39)
Emotional Stability	0	(0.00)	28	(2.99)	517	(55.24)	391	(41.77)
Motivation	0	(0.00)	91	(9.72)	704	(75.21)	141	(15.06)
Decision Making	0	(0.00)	57	(6.09)	745	(79.59)	134	(14.32)
Divergent Thinking	0	(0.00)	43	(4.59)	576	(61.54)	317	(33.87)

Figure: 6.17 Cylinder Chart Showing the Entrepreneurship Dimension Profiles of Students



The *table: 6.135* shows the means, standard deviations, and mean percentage scores of the entrepreneurship score dimensions of students. It can be seen that the highest mean score of 14.73 out of a maximum of 20 is for *emotional stability* with a standard deviation of 1.39 and a mean percentage score of 73.65. The lowest score of 10.44 is for *managerial ability* with a standard deviation of 2.29 and a mean percentage score of 52.20. *Knowledge ability, persuasive ability, innovativeness, emotional stability and divergent thinking* have mean percentage scores above 70. So it can be said that the VHSE students from Kerala show better knowledge ability, persuasive ability, innovativeness, emotional stability, and divergent thinking when compared with the other dimensions of entrepreneurship.

Table: 6.135 Means of the Entrepreneurship Dimension Scores of Students

Sl.No.	Dimension	Mean	Standard Deviation	Mean Percentage Score
1	Risk Taking	12.79	1.49	63.95
2	Persistence and Hard Work	13.62	1.33	68.10
3	Use of Feed Back	13.05	1.90	65.25
4	Personal Responsibility	12.90	1.45	64.50
5	Knowledge Ability	14.23	1.45	71.15
6	Persuasive Ability	14.53	1.40	72.65
7	Managerial Ability	10.44	2.29	52.20
8	Innovativeness	14.64	1.37	73.20
9	Integrity and Communication	11.92	1.52	59.60
10	Emotional Stability	14.73	1.39	73.65
11	Motivation	13.26	1.67	66.30
12	Decision Making	13.43	1.51	67.15
13	Divergent Thinking	14.33	1.59	71.65

The individual dimension scores are added up to form the entrepreneurship score. The maximum attainable score is 260 and minimum attainable score is 52 with a median score of 156. The mean score obtained for

students is 173.87 with a standard deviation of 9.448 and mean percentage score of 66.87 (Table: 6.136). The mean entrepreneurship score is less than 70 and can be considered moderate and not high

Table: 6.136 Mean Entrepreneurship Score of Students

Mean	Mean Percentage Score	Standard Deviation
173.87	66.87	9.448

To test whether the sample information that is observed in the above table (Table: 6.136) holds for the population or really the Entrepreneurship score is moderate, the hypothesis is formulated that the mean score of the Entrepreneurship is 70% of the maximum score (182) against it is less than 70%. Accordingly the following hypothesis is tested. H_0 with a mean score of 182 is put test against the alternative hypothesis H_1 with a mean score < 182 .

Testing of Hypothesis

H_0 : *The Mean Entrepreneurship Score of the students of the Vocational Higher Secondary Schools in Kerala is 182 on the Entrepreneurship Scale used in this study.*

H_1 : *The Mean Entrepreneurship Score of the students of the Vocational Higher Secondary Schools in Kerala is less than 182 on the Entrepreneurship Scale used in this study.*

The calculated value of 'z' is -26.224 with a p-value of < 0.001 at 5% significant level which is less than 0.05 (Table: 6.137). The z-value is found to be less than the tabulated value of -1.645. Since the test is found to be significant, the null hypothesis is rejected and the alternative hypothesis that the mean percentage Entrepreneurship Score of students is less than 70% (182) is accepted.

Table: 6.137 One Sample z-test of the Mean Entrepreneurship Score of Students

z	Sig. (1-tailed)	Mean Difference	95% Confidence Interval of the Difference	
			Lower	Upper
-26.224	< 0.001	-8.13	-8.74	-7.52

Now comparisons of the entrepreneurship scores of the students with respect to variables such as training and support facility statuses of schools, gender of students, socio-economic statuses of students, course of students and grades obtained by students in the qualifying examination are made to know whether the scores differ across these variables.

The Mean Entrepreneurship Scores of the students from schools with poor and average training and support facility statuses are 173.37 and 174.45 with standard deviations of 9.486 and 9.467 respectively (*Table: 6.138*). The respective mean percentage scores are 66.68 and 66.10. The mean scores of the students from schools with poor and average training and support facility statuses are tested by the independent sample z-test. The result of *the independent sample z-test shows a z-value of -1.751 with a p-value of 0.080* at 5% significance level which is higher than 0.05 and therefore it is concluded that there is no significant difference in the Mean Entrepreneurship Scores of the students from schools with different training and support facility statuses.

Table: 6.138 Independent Sample z-test of the Entrepreneurship Scores of Students from Schools with Different Training and Support Facility Statuses

Training and Support Facility Status	Number of Students	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Poor	505	173.37	66.68	9.486	-1.751	0.080
Average	431	174.45	66.10	9.467		
Total	936	173.87	66.87	9.488	Total	

A comparison of the entrepreneurship scores of male and female students is done below. As shown in the *table: 6.139* the Mean Entrepreneurship Scores of male and female students are 174.54 and 173.48 with standard deviations of 10.642 and 8.733 respectively. The respective mean percentage scores are 67.16 and 66.85. The mean scores of male and female students are tested by the independent sample z-test. The result of *the independent sample z-test shows a z-value of -1.649 with a p-value of 0.099* at 5% significance level. The *p-value* is higher than 0.05 and therefore it is concluded that there is no significant difference in the Mean Entrepreneurship Scores of male and female students. The low incidence of entrepreneurship among women in our country when compared with men could be attributed to some other reasons rather than the lack of entrepreneurial skills of women.

Table: 6.139 Independent Sample z-test of the Entrepreneurship Scores of Male and Female Students

Gender	Number of Students	Mean	Mean % Score	Std. Deviation	z	Sig. (2-tailed)
Male	344	174.54	67.16	10.642	-1.649	0.099
Female	592	173.48	66.85	8.733		
Total	936	173.87	66.87	9.488		

Table: 6.140 shows the Mean Entrepreneurship Scores of students from different Socio-Economic Backgrounds (SEB). The means for ‘poor’, ‘lower middle’, and ‘upper middle’ SEB categories are 173.70, 175.08 and 172.56 respectively with standard deviations of 9.311, 10.159 and 9.391. The respective mean percentage scores are 66.81, 67.34 and 66.37. It can be seen that the mean scores are not much different for the different SEB categories. Further analysis was done using One-Way ANOVA.

Results of the *One-Way ANOVA test show an F-value of 2.172 with a p-value of 0.115* at 5% significance level (*Table: 6.141*). The *p-value* is higher

than 0.05 and therefore it is concluded that there are no significant differences in the Mean Entrepreneurship Scores of students from different SEB categories.

Table: 6.140 Mean Entrepreneurship Scores of Students from Different Socio-Economic Backgrounds

SEB		Mean Entrepreneurship Score
Poor	Mean	173.70
	Mean % Score	66.81
	Std. Deviation	9.311
Lower Middle	Mean	175.08
	Mean % Score	67.34
	Std. Deviation	10.159
Upper Middle	Mean	172.56
	Mean % Score	66.37
	Std. Deviation	9.391
Total	Mean	173.87
	Mean % Score	66.87
	Std. Deviation	9.488

Table: 6.141 One-Way ANOVA of the Entrepreneurship Scores of Students from Different Socio-Economic Backgrounds

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	390.019	2	195.009	2.172	0.115
Within Groups	83775.554	933	89.792		
Total	84165.573	935			

Table: 6.142 shows the Mean Entrepreneurship Scores of students from different courses. The means for ‘MRT’, ‘MLT’ and ‘AAG’ courses are 174.12, 173.70 and 173.91 respectively with standard deviations of 9.601, 9.490 and 9.412. The respective mean percentage scores are 66.97, 66.81 and 66.89. ‘MRT’ has the highest mean and ‘MLT’ the lowest. It is clear that the mean scores are not much different for the different courses. The mean scores of the students from different courses are tested using the One-Way ANOVA test.

Table: 6.142 Mean Entrepreneurship Scores of Students from Different Courses

Course	Mean Entrepreneurship Score	
MRT*	Mean	174.12
	Mean % Score	66.97
	Std. Deviation	9.601
MLT**	Mean	173.70
	Mean % Score	66.81
	Std. Deviation	9.490
AAG***	Mean	173.91
	Mean % Score	66.89
	Std. Deviation	9.412
Total	Mean	173.87
	Mean % Score	66.87
	Std. Deviation	9.488

*MRT: Maintenance and Repairs of Radio and Television, ** MLT: Medical Laboratory Technician, *** AAG: Accounting and Auditing

The result of the *One-Way ANOVA test* shows an *F-value* of 0.154 with a *p-value* of 0.857 at 5% significance level (Table: 6.143). The *p-value* is higher than 0.05 and therefore it is concluded that there are no significant differences in the Mean Entrepreneurship Scores of students from different courses. So it is clear that course specific training doesn't have much impact on the entrepreneurship development of the students.

Table: 6.143 One-Way ANOVA of the Entrepreneurship Scores of Students from Different Courses

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	27.779	2	13.890	0.154	0.857
Within Groups	84137.793	933	90.180		
Total	84165.573	935			

Table: 6.144 shows the Mean Entrepreneurship Scores of students with different grades in the qualifying examinations. The mean score is highest for 'B' category (174.57) and lowest for 'A' (172.45) with standard deviations of 9.551 and 8.758. The respective mean percentage scores are 67.14 and 66.33. There is not much difference among the Mean Entrepreneurship Scores of

students with different grades in the qualifying examinations. The mean scores of the students from different grade categories are tested using the One-Way ANOVA test. The result of the *One-Way ANOVA test shows an F-value of 0.579 with a p-value of 0.747* at 5% significance level (Table: 6.145). The *p-value* is higher than 0.05 and therefore it is concluded that there are no significant differences in the Mean Entrepreneurship Scores of students with different grades in the qualifying examination.

Table: 6.144 Mean Entrepreneurship Scores of Students with Different Grades in the Qualifying Examination

Grade		Mean Entrepreneurship Score
D+	Mean	173.91
	Mean % Score	66.89
	Std. Deviation	9.679
C	Mean	174.35
	Mean % Score	67.06
	Std. Deviation	10.567
C+	Mean	173.53
	Mean % Score	66.74
	Std. Deviation	8.811
B	Mean	174.57
	Mean % Score	67.14
	Std. Deviation	9.551
B+	Mean	173.61
	Mean % Score	66.77
	Std. Deviation	9.505
A	Mean	172.45
	Mean % Score	66.33
	Std. Deviation	8.758
A+	Mean	173.68
	Mean % Score	66.80
	Std. Deviation	8.592
Total	Mean	173.87
	Mean % Score	66.87
	Std. Deviation	9.488

Table: 6.145 One-Way ANOVA of the Entrepreneurship Scores of Students from Different Courses

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	313.778	6	52.296	0.579	0.747
Within Groups	83851.795	929	90.260		
Total	84165.573	935			

The above analysis has shown that none of the dimensions of entrepreneurship included in this study secured a ‘dominant’ position for students. All the dimensions of entrepreneurship except managerial ability showed a ‘supportive’ response. Mean entrepreneurship scores of students are moderate. No significant differences are seen in the entrepreneurship scores of male and female students, students from schools with different training and support facility statuses, from different socioeconomic backgrounds, from different courses and students with different grades in the qualifying examination.

6.6.2 Entrepreneurship Profile of Pass Outs

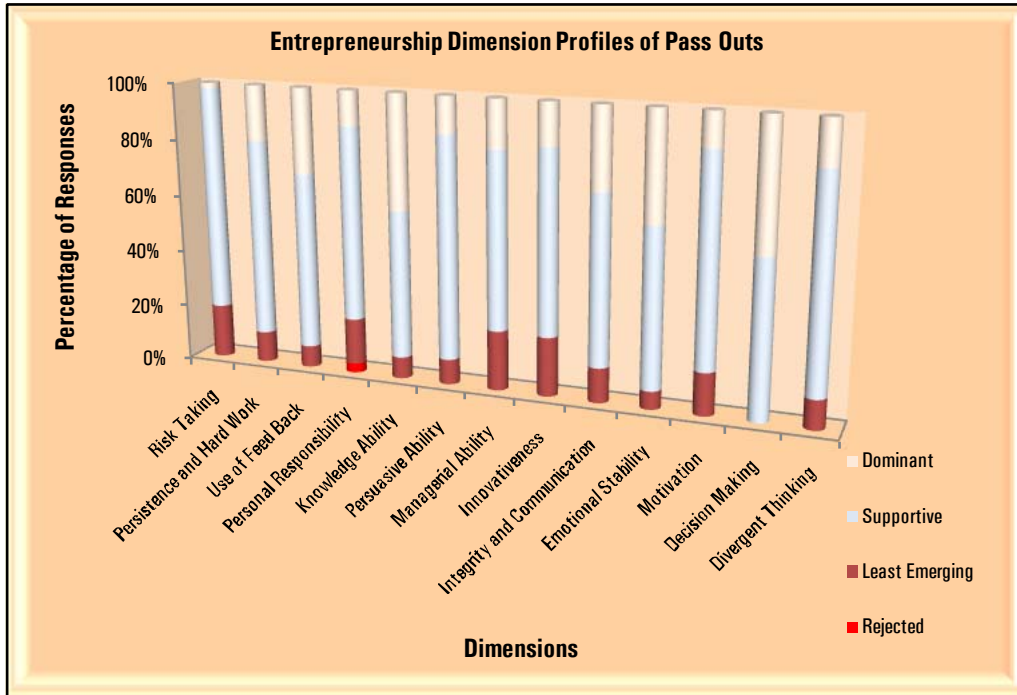
Detailed analysis of the entrepreneurship profiles of 396 pass outs for the period from 2002-03 to 2007-08 from the 39 schools selected for the study has been carried out as part of this study, the details of which are given in the following paragraphs.

Table: 6.146 Entrepreneurship Dimension Profiles of Pass Outs

Scale Dimension	Number of Respondents (Percentage in Brackets)							
	Rejected		Least Emerging		Supportive		Dominant	
Risk Taking	0	(0.0)	75	(18.9)	314	(79.3)	7	(1.8)
Persistence and Hard Work	0	(0.0)	43	(10.9)	276	(69.7)	77	(19.4)
Use of Feed Back	0	(0.0)	30	(7.6)	246	(62.1)	120	(30.3)
Personal Responsibility	13	(3.3)	64	(16.2)	270	(68.2)	49	(12.4)
Knowledge Ability	0	(0.0)	30	(7.6)	206	(52.0)	160	(40.4)
Persuasive Ability	0	(0.0)	35	(8.8)	310	(78.3)	51	(12.9)
Managerial Ability	0	(0.0)	83	(21.0)	246	(62.1)	67	(16.9)
Innovativeness	0	(0.0)	82	(20.7)	255	(64.4)	59	(14.9)
Integrity and Communication	0	(0.0)	48	(12.1)	235	(59.3)	113	(28.5)
Emotional Stability	0	(0.0)	25	(5.3)	221	(56.8)	150	(37.9)
Motivation	0	(0.0)	59	(14.9)	289	(73.0)	48	(12.1)
Decision Making	0	(0.0)	0	(0.0)	218	(55.1)	178	(44.9)
Divergent Thinking	0	(0.0)	41	(10.4)	293	(74.0)	62	(15.7)

The *table: 6.146* shows the dimension profiles of the pass outs. None of the thirteen dimensions secured a dominant position. In the dominant category, *decision making*, *knowledge ability* and *emotional stability* came first second and third with 44.9%, 40.4% and 37.9% responses respectively. It is important to note that *risk taking* which is an important dimension has only 1.8% responses in the dominant category. Some other major dimensions such as *motivation*, *personal responsibility*, and *persuasive ability* also have lesser number of responses in the dominant category. However all the dimensions showed a supportive response with the highest percentage of 79.3% for *risk taking* followed by 78.3% for *persuasive ability* and 74% for *divergent thinking*. *Managerial ability* topped the least emerging category with 21% followed by *innovativeness* with 20.7% and *risk taking* with 18.9%. *Personal responsibility* is the only dimension with responses in the rejected category with 3.3%. The cylinder chart gives better picture (*Figure: 6.18*).

Figure: 6.18 Cylinder Chart Showing the Entrepreneurship Dimension Profiles of Pass Outs



The *table: 6.147* below shows the means and standard deviations of the entrepreneurship score dimensions. It can be seen that the highest mean score of 15.18 out of a maximum of 20 is for *decision making* with a standard deviation of 2.16 and mean percentage score of 75.90. The lowest score of 12.39 is for *risk taking* with a standard deviation of 1.67 and mean percentage score of 61.95. *Decision making, knowledge ability, emotional stability, use of feedback* and *integrity and communication* have mean percentage scores above 70. So it can be said that the VHSE pass outs from Kerala show good decision making skills, knowledge ability, emotional stability, use of feedback and integrity and communication when compared with the other dimensions of entrepreneurship.

Table: 6.147 Mean Entrepreneurship Dimension Scores of Pass Outs

Sl.No.	Dimension	Mean	Mean Percentage Score	Standard Deviation
1	Risk Taking	12.39	61.95	1.67
2	Persistence and Hard Work	13.67	68.35	2.02
3	Use of Feed Back	14.23	71.15	2.49
4	Personal Responsibility	13.04	65.20	2.59
5	Knowledge Ability	14.59	72.95	2.54
6	Persuasive Ability	13.33	66.65	2.06
7	Managerial Ability	13.48	67.40	2.38
8	Innovativeness	12.91	64.55	2.54
9	Integrity and Communication	14.09	70.45	2.59
10	Emotional Stability	14.51	72.55	2.25
11	Motivation	13.19	65.95	1.99
12	Decision Making	15.18	75.90	2.16
13	Divergent Thinking	13.81	69.05	2.01

The individual dimension scores are added up to form the entrepreneurship score. The maximum attainable score is 260 and minimum attainable score is 52 with a median score of 156. The mean score obtained for pass outs is 178.40 with a standard deviation of 14.768 and mean percentage score of 68.62 (Table: 6.148). The mean entrepreneurship score is less than 70 and is moderate and not high.

Table: 6.148 Mean Entrepreneurship Score of Pass outs

Mean	Mean Percentage Score	Standard Deviation
178.40	68.62	14.768

To test whether the sample information that is observed in the above table (Table: 6.148) holds for the population or really the Entrepreneurship score is moderate the hypothesis is formulated that the mean score of the

Entrepreneurship of pass outs is 70% of the maximum score (182) against it is less than 70%. Accordingly the following hypothesis is tested. H_0 with a mean score of 182 is put to test against the alternative hypothesis H_1 with a mean score <182 .

Testing of Hypothesis

H_0 : *The Mean Entrepreneurship Score of the pass outs of the Vocational Higher Secondary Schools in Kerala is 182 on the Entrepreneurship Scale used in this study.*

H_1 : *The Mean Entrepreneurship Score of the pass outs of the Vocational Higher Secondary Schools in Kerala is less than 182 on the Entrepreneurship Scale used in this study.*

The calculated value of 'z' is -4.486 with a p-value of <0.001 at 5% significant level which is less than 0.05 (Table: 6.149). The z-value is found to be less than the tabulated value of -1.645. Since the test is found to be significant, the null hypothesis is rejected and the alternative hypothesis is accepted that the mean score of Entrepreneurship is less than 182 (70%).

Table: 6.149 One Sample z-test of the Mean Entrepreneurship Score of Pass Outs

z	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
			Lower	Upper
-4.846	<0.001	-3.60	-5.05	-2.14

Now a comparison of the entrepreneurship scores of the pass outs with respect to variables such as training and support facility statuses of schools, gender of pass outs, socio-economic backgrounds of pass outs, courses of pass outs and grades obtained by pass outs in the VHSE examination is made to know whether the scores differ across these variables.

The mean Entrepreneurship Scores of the pass outs from schools with ‘poor’ and ‘average’ training and support facility statuses are 175.34 and 181.97 with standard deviations of 14.547 and 14.248 respectively (*Table: 6.150*). The respective mean percentage scores are 67.44 and 69.99. The mean scores of the pass outs from schools with ‘poor’ and ‘average’ training and support facility statuses are tested by the independent sample z-test. The result of *the independent sample z-test shows a z-value of -4.568 with a p-value of <0.001* at 5% significance level which is less than 0.05 and therefore it is concluded that there is significant difference between the mean Entrepreneurship Scores of the pass outs from schools with different training and support facility statuses. The z-value is less than -1.645 and it is also established that the Entrepreneurship Scores of the pass outs from schools with ‘poor’ training and support facility statuses are significantly lower than those from schools with ‘average’ training and support facility statuses. So it is concluded that training and support facility has an impact on the entrepreneurship development of pass outs.

Table: 6.150 Independent Sample z-test of the Entrepreneurship Scores of Pass Outs from Schools with Different Training and Support Facility Statuses

Training and Support Facility Status	Number of Pass outs	Mean	Mean % Score	Std. Deviation	Z	Sig. (2-tailed)
Poor	213	175.34	67.44	14.547	-4.568	< 0.001
Average	183	181.97	69.99	14.248		
Total	936	178.40	68.62	14.768		

Going a step further, the Entrepreneurship Scores of pass outs from schools with different levels of the four different dimensions of training and support facility, VIZ. *Infrastructure, Training Personnel, Real Life Training and Career Guidance and Counselling* are compared now.

Table: 6.151 the Mean Entrepreneurship Scores of pass outs from schools with different Infrastructure Facility Statuses. The means for ‘very poor’, ‘poor’, and ‘average’ Infrastructure Facility Statuses are 171.98, 178.76 and 181.30 respectively with standard deviations of 13.747, 16.352 and 13.478. The respective mean percentage scores are 66.15, 68.75 and 69.73. It can be seen that the mean scores rise steadily as one move from the lower Infrastructure Facility Status to the higher. The mean scores of the pass outs from the different Infrastructure Facility Statuses are tested using the One-Way ANOVA test. The result of the *One Way ANOVA test shows an F-value of 13.816 with a p-value of <0.001* at 5% significance level (*Table: 6.152*). The *p-value* is lower than 0.05 and therefore it is concluded that there is significant difference in the Mean Entrepreneurship Scores of pass outs of from schools with different Infrastructure Facility Statuses and infrastructure facility has an impact on the entrepreneurial skills of VHSE pass outs.

Table: 6.151 Mean Entrepreneurship Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

Infrastructure Facility Status		Mean Entrepreneurship Score
Very Poor	Mean	171.98
	Mean % Score	66.15
	Std. Deviation	13.747
Poor	Mean	178.76
	Mean % Score	68.75
	Std. Deviation	16.352
Average	Mean	181.30
	Mean % Score	69.73
	Std. Deviation	13.478
Total	Mean	178.40
	Mean % Score	68.64
	Std. Deviation	14.768

Table: 6.152 One-way ANOVA of the Entrepreneurship Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5659.124	2	2829.562	13.816	< 0.001
Within Groups	80486.230	393	204.800		
Total	86145.354	395			

Post hoc multiple comparisons were done using the *Tukey HSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in *table: 6.153*. It is evident that the mean difference (I-J) of the ‘poor’ category with ‘average’ category is not significant where as the differences of the ‘very poor’ category with ‘poor’ and ‘average’ categories are significant.

Table: 6.153 Tukey HSD Multiple Comparison Test for the Entrepreneurship Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

(I) Infrastructure Facility Status	(J) Infrastructure Facility Status	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Very Poor	Poor	-6.78(*)	2.050	.003	-11.60	-1.96
	Average	-9.32(*)	1.775	.000	-13.50	-5.14
Poor	Very Poor	6.78(*)	2.050	.003	1.96	11.60
	Average	-2.54	1.757	.318	-6.67	1.59
Average	Very Poor	9.32(*)	1.775	.000	5.14	13.50
	Poor	2.54	1.757	.318	-1.59	6.67

* The mean difference is significant at the .05 level.

Table: 6.154 the Mean Entrepreneurship Scores of pass outs from schools with different Training Personnel Statuses. The means for ‘poor’, ‘average’ ‘good’ and ‘very good’ categories are 177.35, 177.67, 178.29 and 178.85 respectively with standard deviations of 15.411, 14.567, 14.728 and 15.004. The respective mean percentage scores are 68.21, 68.33, 68.57 and 68.79. It can be seen that there is not much difference among the mean scores. The mean scores of the pass from the different Training Personnel Statuses are

tested using the One-Way ANOVA test. The result of the ANOVA test shows an *F*-value of 0.470 with a *p*-value of 0.704 at 5% significance level (Table: 6.155). The *p*-value is higher than 0.05 and therefore it is concluded that there are no significant differences among the Mean Entrepreneurship Scores of pass outs of from schools with different Training Personnel Statuses and training personnel status has no impact on the entrepreneurial skills of VHSE pass outs.

Table: 6.154 Mean Entrepreneurship Scores of Pass Outs from Schools with Different Training Personnel Statuses

Training Personnel Statuses		Mean Entrepreneurship Score
Poor	Mean	177.35
	Mean % Score	68.21
	Std. Deviation	15.411
Average	Mean	177.67
	Mean % Score	68.33
	Std. Deviation	14.567
Good	Mean	178.29
	Mean % Score	68.57
	Std. Deviation	14.728
Very Good	Mean	178.85
	Mean % Score	68.79
	Std. Deviation	15.004
Total	Mean	178.40
	Mean % Score	68.64
	Std. Deviation	14.768

Table: 6.155 One-Way ANOVA of the Entrepreneurship Scores of Pass Outs from Schools with Different Training Personnel Statuses

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	308.432	3	102.811	0.470	0.704
Within Groups	85836.921	392	218.972		
Total	86145.354	395			

The *table: 6.156* below shows that there is not much difference in the mean Entrepreneurship Scores of pass outs from schools with ‘poor’ and ‘average’ Career Guidance and Counselling Statuses. The score is 178.29 for ‘poor’ and 178.85 for ‘average’ with respective standard deviations of 14.728 and 15.004. The respective mean percentage scores are 68.57 and 68.79. It is further established by the independent sample z-test. The result of *the independent sample z-test* shows a *z-value* of -0.306 with a *p-value* of 0.760 at 5% significance level which is higher than 0.05 and therefore it is concluded that there is no significant difference in the mean Entrepreneurship Scores of the pass outs from schools with different Career Guidance and Counselling Statuses.

Table: 6.156 Independent Sample z-test of the Entrepreneurship Scores of Pass Outs from Schools with Different Career Guidance and Counselling Statuses

Career Guidance and Counselling Statuses	Number of Pass outs	Mean	Mean % Score	Std. Deviation	Z	Sig. (2-tailed)
Poor	315	178.29	68.57	14.728	-0.306	0.760
Average	81	178.85	68.79	15.004		
Total	396	178.40	68.62	14.768		

Table: 6.157 the Mean Entrepreneurship Scores of pass outs from schools with different Real Life Training Statuses. The means for ‘poor’, ‘average’ and ‘good’ Real Life Training Statuses are 174.99, 179.91 and 184.35 respectively with standard deviations of 14.491, 14.516 and 14.206. The respective mean percentage scores are 67.30, 69.21 and 70.90. It can be seen that the mean scores rise steadily as one move from the lower real life training status to the higher. The mean scores of the pass from schools with different Real Life Training Statuses are tested using the ANOVA test. The result of the *One-Way ANOVA test* shows an *F-value* of 9.133 with a *p-value* of <0.001 at 5% significance level (*Table: 6.158*). The *p-value* is lower than 0.05 and

therefore it is concluded that there are significant differences among the Mean Entrepreneurship Scores of pass outs of from schools with different Real Life Training Statuses and real life training has an impact on the entrepreneurial development of VHSE pass outs.

Table: 6.157 Mean Entrepreneurship Scores of Pass Outs from Schools with Different Real Life Training Facility Statuses

Real Life Training Facility Statuses		Mean Entrepreneurship Score
Poor	Mean	174.99
	Mean % Score	67.30
	Std. Deviation	14.491
Average	Mean	179.91
	Mean % Score	69.21
	Std. Deviation	14.516
Good	Mean	184.35
	Mean % Score	70.90
	Std. Deviation	14.206
Total	Mean	178.4
	Mean % Score	68.64
	Std. Deviation	14.768

Table: 6.158 One-Way ANOVA of the Entrepreneurship Scores of Pass Outs from Schools with Different Real Life Training Statuses

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3826.109	2	1913.054	9.133	< 0.001
Within Groups	82319.245	393	209.464		
Total	86145.354	395			

Post hoc multiple comparisons were done using the *Tukey HSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in *table: 6.159*. It is evident that the mean difference (I-J) of the 'average' category with 'good' category is not significant where as the differences of the 'poor' category with 'good' and 'average' categories are significant.

Table: 6.159 Tukey HSD Multiple Comparison Test for Entrepreneurship Scores of Pass Outs from Schools with Different Real Life Training Statuses

(I) Real Life Training Status	(J) Real Life Training Status	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Poor	Average	-4.92(*)	1.547	0.004	-8.56	-1.28
	Good	-9.36(*)	2.486	0.001	-15.21	-3.51
Average	Poor	4.92(*)	1.547	0.004	1.28	8.56
	Good	-4.44	2.441	0.165	-10.18	1.30
Good	Poor	9.36(*)	2.486	0.001	3.51	15.21
	Average	4.44	2.441	0.165	-1.30	10.18

* The mean difference is significant at the .05 level.

Having understood that there is significant difference between the mean entrepreneurship scores of pass outs from schools with different training and support facility statuses, it is important that the dimension wise analysis is done to know which all dimension scores show such significant differences.

The table below (*Table: 6.160*) shows that all the dimensions except *personal responsibility* have higher mean scores for pass outs from schools with ‘average’ training and support facility status when compared with the schools with ‘poor’ training and support facility status. The mean dimension scores of the pass outs from schools with ‘poor’ and ‘average’ training and support facility statuses are tested by the independent sample z-test. The result of the independent sample z-test shows that out of the 13 dimensions, nine dimensions have p-values less than 0.05 at 5% significance. The four dimensions with p-values higher than 0.05 are *personal responsibility*, *persuasive ability*, *integrity and communication* and *motivation*. So it can be concluded that the entrepreneurship dimension scores for all the dimensions except that of *personal responsibility*, *persuasive ability*, *integrity and communication* and *motivation* are significantly different for pass outs from schools with ‘poor’ and ‘average’ training and support facility statuses.

Table: 6.160 Mean Entrepreneurship Dimension Scores of Pass Outs from Schools with Different Training and Support Facility Statuses

Dimension	Training and Support Facility	N	Mean	Std. Deviation	Mean Percentage Score	Z	Sig.
Risk Taking	Poor	213	12.23	1.735	61.15	-1.994	0.047
	Average	183	12.57	1.567	62.85		
Persistence and Hard work	Poor	213	13.42	2.005	67.10	-2.645	0.009
	Average	183	13.96	2.000	69.80		
Use of Feedback	Poor	213	13.87	2.565	69.35	-3.129	0.002
	Average	183	14.64	2.335	73.20		
Personal Responsibility	Poor	213	13.06	2.654	65.30	0.174	0.862
	Average	183	13.01	2.527	65.05		
Knowledge Ability	Poor	213	14.32	2.668	71.60	-2.27	0.024
	Average	183	14.90	2.347	74.50		
Persuasive Ability	Poor	213	13.32	2.108	66.60	-0.068	0.946
	Average	183	13.33	2.015	66.65		
Managerial Ability	Poor	213	13.12	2.502	65.60	-3.27	0.001
	Average	183	13.90	2.157	69.50		
Innovativeness	Poor	213	12.51	2.358	62.55	-3.427	0.001
	Average	183	13.38	2.665	66.90		
Integrity and Communication	Poor	213	13.88	2.577	69.40	-1.688	0.092
	Average	183	14.32	2.593	71.60		
Emotional Stability	Poor	213	14.16	2.260	70.80	-3.335	0.001
	Average	183	14.91	2.185	74.55		
Motivation	Poor	213	13.05	2.071	65.25	-1.542	0.124
	Average	183	13.36	1.875	66.80		
Decision Making	Poor	213	14.88	2.142	74.40	-3.079	0.002
	Average	183	15.54	2.130	77.70		
Divergent Thinking	Poor	213	13.51	2.001	67.55	-3.228	0.001
	Average	183	14.15	1.966	70.75		

Having understood that there is significant difference between the mean entrepreneurship scores of pass outs from schools with different real life training facilities and different infrastructure training facilities it is important that the dimension wise analysis is done to know which all entrepreneurship dimension scores show such significant differences.

The table below (*Table: 6.161*) shows that for all the dimensions except *personal responsibility*, the mean scores increase as one move from schools with 'poor' Real Life Training Facility status to 'good' Real Life Training Facility status. The mean dimension scores of the pass outs from schools with 'poor', 'average' and 'good' Real Life Training Facility statuses are tested by one way ANOVA test. The results of the one way ANOVA test (*Table: 162*) show that out of the 13 dimensions, seven dimensions have p-values less than 0.05 at 5% significance. The six dimensions with p-values higher than 0.05 are *risk taking, use of feedback, personal responsibility, knowledge ability, persuasive ability and integrity and communication*. So it can be concluded that the entrepreneurship dimension scores for the dimensions like *persistence and hard work, managerial ability, innovativeness, emotional stability, motivation, decision making and divergent thinking* are significantly different for pass outs from schools with different Real Life Training Facility statuses.

Table: 6.161 Mean Entrepreneurship Dimension Scores of Pass Outs from Schools with Different Real Life Training Facility Statuses

Dimension	Real Life Training Facility	N	Mean	Std. Deviation	Mean Percentage Score
Risk Taking	Poor	160	12.27	1.779	61.35
	Average	193	12.41	1.644	62.05
	Good	43	12.74	1.255	63.7
Persistence and Hard work	Poor	160	13.28	1.985	66.4
	Average	193	13.89	1.996	69.45
	Good	43	14.12	2.038	70.6
Use of Feedback	Poor	160	14.05	2.705	70.25
	Average	193	14.22	2.293	71.1
	Good	43	14.91	2.428	74.55
Personal Responsibility	Poor	160	13.01	2.752	65.05
	Average	193	13.10	2.485	65.5
	Good	43	12.81	2.5	64.05
Knowledge Ability	Poor	160	14.28	2.745	71.4
	Average	193	14.78	2.392	73.9
	Good	43	14.91	2.287	74.55
Persuasive Ability	Poor	160	13.29	2.202	66.45
	Average	193	13.33	1.953	66.65
	Good	43	13.44	2.051	67.2
Managerial Ability	Poor	160	13.06	2.59	65.3
	Average	193	13.64	2.236	68.2
	Good	43	14.33	1.835	71.65
Innovativeness	Poor	160	12.33	2.527	61.65
	Average	193	13.19	2.397	65.95
	Good	43	13.84	2.768	69.2
Integrity and Communication	Poor	160	14.01	2.577	70.05
	Average	193	14.04	2.63	70.2
	Good	43	14.56	2.472	72.8
Emotional Stability	Poor	160	14.20	2.281	71
	Average	193	14.65	2.196	73.25
	Good	43	15.05	2.299	75.25
Motivation	Poor	160	12.83	2.102	64.15
	Average	193	13.41	1.855	67.05
	Good	43	13.51	1.956	67.55
Decision Making	Poor	160	14.84	2.122	74.2
	Average	193	15.33	2.171	76.65
	Good	43	15.81	2.073	79.05
Divergent Thinking	Poor	160	13.54	2.031	67.7
	Average	193	13.91	2.01	69.55
	Good	43	14.33	1.809	71.65

Table: 6.162 One Way ANOVA of the Mean Entrepreneurship Dimension Scores of Pass Outs from Schools with Different Real Life Training Facility Statuses

Entrepreneurship Dimension	Description	Sum of Squares	df	Mean Square	F	Sig.
Risk Taking	Between Groups	7.818	2	3.909	1.412	0.245
	Within Groups	1088.293	393	2.769		
	Total	1096.111	395			
Persistence and Hard work	Between Groups	42.187	2	21.093	5.295	0.005
	Within Groups	1565.477	393	3.983		
	Total	1607.664	395			
Use of Feedback	Between Groups	24.898	2	12.449	2.021	0.134
	Within Groups	2420.648	393	6.159		
	Total	2445.545	395			
Personal Responsibility	Between Groups	3.091	2	1.545	.229	0.795
	Within Groups	2652.414	393	6.749		
	Total	2655.505	395			
Knowledge Ability	Between Groups	27.339	2	13.670	2.135	0.120
	Within Groups	2516.388	393	6.403		
	Total	2543.727	395			
Persuasive Ability	Between Groups	.744	2	.372	.087	0.917
	Within Groups	1680.234	393	4.275		
	Total	1680.977	395			
Managerial Ability	Between Groups	64.571	2	32.286	5.852	0.003
	Within Groups	2168.267	393	5.517		
	Total	2232.838	395			
Innovativeness	Between Groups	105.317	2	52.659	8.479	< 0.001
	Within Groups	2440.589	393	6.210		
	Total	2545.907	395			
Integrity and Communication	Between Groups	10.833	2	5.416	.806	0.447
	Within Groups	2640.248	393	6.718		
	Total	2651.081	395			
Emotional Stability	Between Groups	31.411	2	15.706	3.124	0.045
	Within Groups	1975.548	393	5.027		
	Total	2006.960	395			
Motivation	Between Groups	34.768	2	17.384	4.483	0.012
	Within Groups	1524.027	393	3.878		
	Total	1558.795	395			
Decision Making	Between Groups	40.479	2	20.240	4.416	0.013
	Within Groups	1801.064	393	4.583		
	Total	1841.543	395			
Divergent Thinking	Between Groups	25.308	2	12.654	3.170	0.043
	Within Groups	1568.719	393	3.992		
	Total	1594.028	395			

Post hoc multiple comparisons were done using *LSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in *table: 6.163*. It is evident that the mean difference (I-J) is significant between 'poor' and 'good' for all the dimensions (for which the ANOVA test showed

significant differences) and also significant between 'poor' and 'average' for all the dimensions except *emotional stability* and *divergent thinking*. No significant differences are seen between 'average' and 'good' for any of the dimensions.

Table: 6.163 LSD Multiple Comparison Test for the Entrepreneurship Scores of Pass Outs from Schools with Different Real Life Training Statuses

Dependent Variable	(I) Real Life Training Score Grouped	(J) Real Life Training Score Grouped	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Persistence and Hard work	Poor	Average	-.61 ^(*)	.213	.004	-1.03	-.19
		Good	-.84 ^(*)	.343	.015	-1.51	-.16
	Average	Poor	.61 ^(*)	.213	.004	.19	1.03
		Good	-.23	.337	.504	-.89	.44
	Good	Poor	.84 ^(*)	.343	.015	.16	1.51
		Average	.23	.337	.504	-.44	.89
Managerial Ability	Poor	Average	-.59 ^(*)	.251	.020	-1.08	-.09
		Good	-1.27 ^(*)	.403	.002	-2.06	-.48
	Average	Poor	.59 ^(*)	.251	.020	.09	1.08
		Good	-.68	.396	.085	-1.46	.10
	Good	Poor	1.27 ^(*)	.403	.002	.48	2.06
		Average	.68	.396	.085	-.10	1.46
Innovativeness	Poor	Average	-.86 ^(*)	.266	.001	-1.38	-.33
		Good	-1.51 ^(*)	.428	.000	-2.35	-.66
	Average	Poor	.86 ^(*)	.266	.001	.33	1.38
		Good	-.65	.420	.122	-1.48	.18
	Good	Poor	1.51 ^(*)	.428	.000	.66	2.35
		Average	.65	.420	.122	-.18	1.48
Emotional Stability	Poor	Average	-.45	.240	.063	-.92	.02
		Good	-.85 ^(*)	.385	.029	-1.60	-.09
	Average	Poor	.45	.240	.063	-.02	.92
		Good	-.40	.378	.292	-1.14	.34
	Good	Poor	.85 ^(*)	.385	.029	.09	1.60
		Average	.40	.378	.292	-.34	1.14
Motivation	Poor	Average	-.58 ^(*)	.211	.006	-1.00	-.17
		Good	-.68 ^(*)	.338	.045	-1.35	-.02
	Average	Poor	.58 ^(*)	.211	.006	.17	1.00
		Good	-.10	.332	.770	-.75	.56
	Good	Poor	.68 ^(*)	.338	.045	.02	1.35
		Average	.10	.332	.770	-.56	.75
Decision Making	Poor	Average	-.49 ^(*)	.229	.031	-.94	-.04
		Good	-.98 ^(*)	.368	.008	-1.70	-.25
	Average	Poor	.49 ^(*)	.229	.031	.04	.94
		Good	-.48	.361	.182	-1.19	.23
	Good	Poor	.98 ^(*)	.368	.008	.25	1.70
		Average	.48	.361	.182	-.23	1.19
Divergent Thinking	Poor	Average	-.37	.214	.080	-.79	.05
		Good	-.79 ^(*)	.343	.022	-1.46	-.11
	Average	Poor	.37	.214	.080	-.05	.79
		Good	-.41	.337	.220	-1.08	.25
	Good	Poor	.79 ^(*)	.343	.022	.11	1.46
		Average	.41	.337	.220	-.25	1.08

The table below (*Table: 6.164*) shows that for all the dimensions except *motivation* the mean scores are higher for schools with ‘poor’ and ‘average’ Infrastructure Facility status when compared with ‘very poor’ Infrastructure Facility status. The mean dimension scores of the pass outs from schools with ‘very poor’, ‘poor’ and ‘average’ Infrastructure Facility statuses are tested by one way ANOVA test. The results of the one way ANOVA test (*Table: 165*) show that out of the 13 dimensions, eight dimensions have p-values less than 0.05 at 5% significance. The five dimensions with p-values higher than 0.05 are *persistence and hard work, personal responsibility persuasive ability, innovativeness, and motivation*. So it can be concluded that the entrepreneurship dimension scores for the dimensions like *risk taking, use of feedback, knowledge ability, managerial ability, integrity and communication, emotional stability, decision making and divergent thinking* are significantly different for pass outs from schools with different Infrastructure Facility statuses.

Table: 6.164 Mean Entrepreneurship Dimension Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

Dimension	Infrastructure Facility	N	Mean	Std. Deviation	Mean Percentage Score
Risk Taking	Very Poor	96	11.92	1.69	59.6
	Poor	99	12.57	1.598	62.85
	Average	201	12.53	1.652	62.65
Persistence and Hard work	Very Poor	96	13.30	1.711	66.5
	Poor	99	13.86	1.948	69.3
	Average	201	13.75	2.167	68.75
Use of Feedback	Very Poor	96	13.51	1.936	67.55
	Poor	99	13.78	2.509	68.9
	Average	201	14.79	2.588	73.95
Personal Responsibility	Very Poor	96	12.93	2.451	64.65
	Poor	99	13.19	2.372	65.95
	Average	201	13.01	2.766	65.05

Knowledge Ability	Very Poor	96	14.01	2.443	70.05
	Poor	99	14.49	2.659	72.45
	Average	201	14.92	2.479	74.6
Persuasive Ability	Very Poor	96	13.22	1.848	66.1
	Poor	99	13.27	2.089	66.35
	Average	201	13.40	2.152	67
Managerial Ability	Very Poor	96	12.86	2.396	64.3
	Poor	99	13.31	2.586	66.55
	Average	201	13.86	2.196	69.3
Innovativeness	Very Poor	96	12.59	1.821	62.95
	Poor	99	12.68	2.555	63.4
	Average	201	13.18	2.794	65.9
Integrity and Communication	Very Poor	96	13.34	2.487	66.7
	Poor	99	14.26	2.881	71.3
	Average	201	14.35	2.429	71.75
Emotional Stability	Very Poor	96	13.46	2.161	67.3
	Poor	99	14.67	2.39	73.35
	Average	201	14.94	2.071	74.7
Motivation	Very Poor	96	13.19	1.932	65.95
	Poor	99	13.31	2.019	66.55
	Average	201	13.13	2.003	65.65
Decision Making	Very Poor	96	14.36	2.239	71.8
	Poor	99	15.56	2.255	77.8
	Average	201	15.39	1.975	76.95
Divergent Thinking	Very Poor	96	13.28	1.868	66.4
	Poor	99	13.81	2.174	69.05
	Average	201	14.05	1.95	70.25

Table: 6.165 One Way ANOVA of the Mean Entrepreneurship Dimension Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

Entrepreneurship Dimension	Description	Sum of Squares	df	Mean Square	F	Sig.
Risk Taking	Between Groups	28.355	2	14.178	5.218	0.006
	Within Groups	1067.756	393	2.717		
	Total	1096.111	395			
Persistence and Hard work	Between Groups	17.842	2	8.921	2.205	0.112
	Within Groups	1589.822	393	4.045		
	Total	1607.664	395			
Use of Feedback	Between Groups	133.221	2	66.610	11.321	<0.001
	Within Groups	2312.325	393	5.884		
	Total	2445.545	395			
Personal Responsibility	Between Groups	3.682	2	1.841	.273	0.761
	Within Groups	2651.823	393	6.748		
	Total	2655.505	395			
Knowledge Ability	Between Groups	54.428	2	27.214	4.296	0.014
	Within Groups	2489.299	393	6.334		
	Total	2543.727	395			
Persuasive Ability	Between Groups	2.576	2	1.288	.302	0.740
	Within Groups	1678.401	393	4.271		
	Total	1680.977	395			
Managerial Ability	Between Groups	67.490	2	33.745	6.125	0.002
	Within Groups	2165.348	393	5.510		
	Total	2232.838	395			
Innovativeness	Between Groups	29.542	2	14.771	2.307	0.101
	Within Groups	2516.365	393	6.403		
	Total	2545.907	395			
Integrity and Communication	Between Groups	70.332	2	35.166	5.355	0.005
	Within Groups	2580.748	393	6.567		
	Total	2651.081	395			
Emotional Stability	Between Groups	144.967	2	72.484	15.299	<0.001
	Within Groups	1861.993	393	4.738		
	Total	2006.960	395			
Motivation	Between Groups	2.241	2	1.120	.283	0.754
	Within Groups	1556.555	393	3.961		
	Total	1558.795	395			
Decision Making	Between Groups	86.909	2	43.454	9.733	<0.001
	Within Groups	1754.634	393	4.465		
	Total	1841.543	395			
Divergent Thinking	Between Groups	38.870	2	19.435	4.911	0.008
	Within Groups	1555.158	393	3.957		
	Total	1594.028	395			

Post hoc multiple comparisons were done using *LSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in *table: 6.166*. It is evident that the mean difference (I-J) is significant between

‘very poor’ and ‘average’ for all the dimensions (for which the ANOVA test showed significant differences) and also significant between ‘very poor’ and ‘poor’ for dimensions like *risk taking, integrity and communication, emotional stability and decision making*. No significant differences are seen between ‘poor’ and ‘average’ for any of the dimensions except for *use of feedback*.

Table: 6.166 Tukey Multiple Comparison Test for the Entrepreneurship Scores of Pass Outs from Schools with Different Infrastructure Facility Statuses

Dependent Variable	(I) Infrastructure Score Grouped	(J) Infrastructure Score Grouped	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Risk Taking	Very Poor	Poor	-.65(*)	.236	.017	-1.20	-.09
		Average	-.61(*)	.204	.008	-1.09	-.13
	Poor	Very Poor	.65(*)	.236	.017	.09	1.20
		Average	.04	.202	.980	-.44	.51
	Average	Very Poor	.61(*)	.204	.008	.13	1.09
		Poor	-.04	.202	.980	-.51	.44
Use of Feedback	Very Poor	Poor	-.27	.347	.722	-1.08	.55
		Average	-1.28(*)	.301	.000	-1.99	-.57
	Poor	Very Poor	.27	.347	.722	-.55	1.08
		Average	-1.01(*)	.298	.002	-1.71	-.31
	Average	Very Poor	1.28(*)	.301	.000	.57	1.99
		Poor	1.01(*)	.298	.002	.31	1.71
Knowledge Ability	Very Poor	Poor	-.48	.361	.372	-1.33	.36
		Average	-.91(*)	.312	.011	-1.64	-.17
	Poor	Very Poor	.48	.361	.372	-.36	1.33
		Average	-.42	.309	.363	-1.15	.31
	Average	Very Poor	.91(*)	.312	.011	.17	1.64
		Poor	.42	.309	.363	-.31	1.15
Managerial Ability	Very Poor	Poor	-.45	.336	.377	-1.24	.34
		Average	-.99(*)	.291	.002	-1.68	-.31

	Poor	Very Poor	.45	.336	.377	-.34	1.24
		Average	-.54	.288	.145	-1.22	.14
	Average	Very Poor	.99(*)	.291	.002	.31	1.68
		Poor	.54	.288	.145	-.14	1.22
Integrity and Communication	Very Poor	Poor	-.92(*)	.367	.034	-1.78	-.06
		Average	-1.01(*)	.318	.005	-1.76	-.26
	Poor	Very Poor	.92(*)	.367	.034	.06	1.78
		Average	-.09	.315	.955	-.83	.65
	Average	Very Poor	1.01(*)	.318	.005	.26	1.76
		Poor	.09	.315	.955	-.65	.83
Emotional Stability	Very Poor	Poor	-1.21(*)	.312	.000	-1.94	-.47
		Average	-1.48(*)	.270	.000	-2.11	-.84
	Poor	Very Poor	1.21(*)	.312	.000	.47	1.94
		Average	-.27	.267	.574	-.90	.36
	Average	Very Poor	1.48(*)	.270	.000	.84	2.11
		Poor	.27	.267	.574	-.36	.90
Decision Making	Very Poor	Poor	-1.19(*)	.303	.000	-1.90	-.48
		Average	-1.03(*)	.262	.000	-1.65	-.41
	Poor	Very Poor	1.19(*)	.303	.000	.48	1.90
		Average	.16	.259	.806	-.45	.77
	Average	Very Poor	1.03(*)	.262	.000	.41	1.65
		Poor	-.16	.259	.806	-.77	.45
Divergent Thinking	Very Poor	Poor	-.53	.285	.155	-1.20	.14
		Average	-.77(*)	.247	.005	-1.35	-.19
	Poor	Very Poor	.53	.285	.155	-.14	1.20
		Average	-.25	.244	.571	-.82	.33
	Average	Very Poor	.77(*)	.247	.005	.19	1.35
		Poor	.25	.244	.571	-.33	.82

* The mean difference is significant at the .05 level.

Having understood that there is a significant difference between the mean entrepreneurship scores of pass outs from schools with different training and support facility statuses, and the entrepreneurship scores of pass outs from schools with 'average' training and support facility statuses is higher than that of those from schools with 'poor' training and support facility statuses it is worthwhile to know the nature of relationship between these two variables. The following hypothesis that the mean Entrepreneurship Scores of the pass outs from different schools have a positive relationship with the Training and Support Facility Scores of the corresponding schools is tested against the alternative hypothesis that there is no positive relationship. Correlation analysis has been carried out for this purpose. The table below (*Table: 6.167*) shows the comparison of the Training and Support Facility Scores and mean Entrepreneurship Scores of the 39 Schools selected.

Testing of Hypothesis

H₀: *The mean Entrepreneurship Scores of the pass outs from different schools have no positive relationship with the Training and Support Facility Scores of the corresponding schools.*

H₁: *The mean Entrepreneurship Scores of the pass outs from different schools have a positive relationship with the Training and Support Facility Scores of the corresponding schools.*

The mean Entrepreneurship Scores and Training and Support Facility Scores show a strong positive correlation with a *correlation coefficient of 0.725* and is significant at 0.01 level (p-value <0.001) (*Table: 6.168*). Therefore the null hypothesis is rejected and the alternative hypothesis that the mean Entrepreneurship Scores of the pass outs have a positive relationship with the Training and Support Facility Scores of the VHS schools is accepted. The scatter plot diagram gives a better idea (*Figure: 6.19*).

Table: 6.167 Comparison of Training and Support Facility Scores and Mean Entrepreneurship Scores of Schools

School Identification Number	Training and Support Facility Scores	Mean Entrepreneurship Scores
1	25.30	183.86
2	26.00	185.10
3	19.20	169.13
4	21.70	175.09
5	24.70	178.60
6	29.30	186.60
7	27.10	176.64
8	25.20	177.40
9	26.50	185.20
10	26.10	184.00
11	22.90	166.86
12	25.30	175.09
13	32.60	186.09
14	29.10	177.00
15	29.00	182.20
16	23.70	166.33
17	28.20	181.87
18	32.00	185.25
18	20.00	169.31
20	22.30	175.33
21	29.40	186.08
22	27.40	184.00
23	25.40	176.64
24	20.30	166.86
25	26.80	185.27
26	26.40	176.20
27	25.20	176.50
28	29.20	183.15
29	24.10	176.00
30	30.70	182.62
31	22.10	175.54
32	25.20	175.70
33	24.50	179.42
34	25.50	181.82
35	24.60	181.27
36	20.80	174.09
37	23.70	176.20
38	29.10	176.50

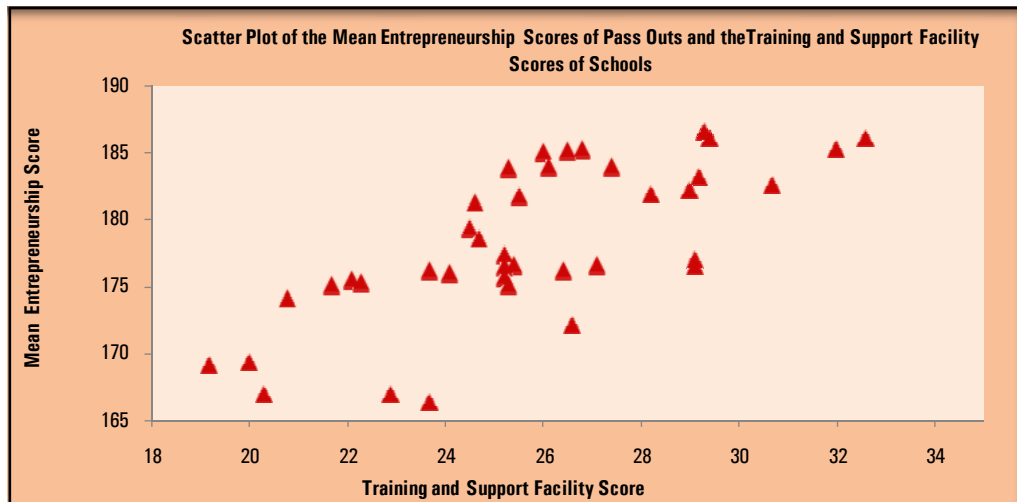
39	26.60	172.09
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Table: 6.168 Correlation between Training and Support Facility Scores and Mean Entrepreneurship Scores of Pass Outs

Variables		Training and Support Facility Scores	Mean Entrepreneurship Scores
Training and Support Facility Scores	Pearson Correlation	1.000	0.725(**)
	Sig. (2-tailed)	-	< 0.001
	N	39	39
Mean Entrepreneurship Scores	Pearson Correlation	0.725(**)	1.000
	Sig. (2-tailed)	< 0.001	-
	N	39	39

** Correlation is significant at the 0.01 level (2-tailed).

Figure: 6.19 Scatter Plot Showing the Correlation between the Mean Entrepreneurship Scores of Pass Outs and the Training and Support Facility Scores of Schools



Regression analysis was carried out to know the statistical relationship between the two variables and to develop a mathematical model depicting the relationship.

Table: 6.169 Regression Analysis Showing the Statistical Relationship between Training and Support Facility Score and Entrepreneurship Score

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	144.752	5.283	.	27.400	< 0.001
Training and Support Facility Score	1.305	0.204	0.725	6.395	< 0.001

The table: 169 above gives the results of the regression analysis. The p-values is <0.001 indicating that the relative importance of the variable is significant. The model depicting the relationship between Training and Support Facility Score and Entrepreneurship Score is as follows. The R² value is 0.525 indicating that 52.5% change in the dependent variable is accounted for by the independent variable.

ES = 144.752 + 1.305 TSFS

Where ES = Entrepreneurship Score and,
TSFS = Training and Support Facility Score.

It is clear that one unit increase in the Training and Support Facility causes 1.305 units of increase in the Entrepreneurship Score of pass outs.

Having seen that there is a strong positive correlation between the Training and Support Facility scores of the schools and the mean entrepreneurship scores of the pass outs, it is not out of place to find out the correlation between the Training and Support Facility dimension scores and the mean entrepreneurship scores of the pass outs.

The table below (*Table: 170*) shows that there is strong positive correlation between the Infrastructure Facility scores and the mean entrepreneurship scores of the pass outs with a correlation coefficient of 0.606 which is significant at 0.01 levels (p-value <0.001) and also between the Real Life Training Facility scores and the mean entrepreneurship scores of the pass outs with a correlation coefficient of 0.798 which is significant at 0.01 levels (p-value <0.001). Career guidance and counselling score has correlation coefficient of 0.349 which is significant at 0.05 levels (p-value 0.029). Quality and availability of training personnel score has only a correlation coefficient of 0.090 which is not significant at 0.05 levels (p-value 0.584). The above analysis shows that the strongest positive correlation is between the Real Life Training Facility scores and the mean entrepreneurship scores of the pass outs followed by that between the Infrastructure Facility scores and the mean entrepreneurship scores of the pass outs. This emphasises the importance of the Real Life Training Facility and Infrastructure Facility in VHSE training for enhancing the entrepreneurship skills of the VHSE pass outs.

Table: 6.170 Correlations between Training and Support Facility Dimension Scores and Entrepreneurship Scores of Pass Outs

Variables (Training and Support Facility Dimensions)		Mean Entrepreneurship Scores
Infrastructure Facility Score	Pearson Correlation	0.606(**)
	Sig. (2-tailed)	< 0.001
	N	39
Quality and Availability of Training Personnel Score	Pearson Correlation	0.090
	Sig. (2-tailed)	0.584
	N	39
Real Life Training Facility Score	Pearson Correlation	0.798(**)
	Sig. (2-tailed)	< 0.001
	N	39
Career Guidance and Counselling Score	Pearson Correlation	0.349(*)
	Sig. (2-tailed)	0.029

	N	39
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** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Given below are the regression models depicting the relationships between Real Life Training Facility Score and Entrepreneurship Score and also between Infrastructure Facility Score and Entrepreneurship Score. The p-values in both the cases are <0.001 indicating that the relative importance of the variable is significant. The R² value for the first model is 0.601 indicating that 60.1% change in the dependent variable is accounted for by the independent variable. It is clear that one unit increase in the Real Life Training Facility causes 0.874 units of increase in the Entrepreneurship Score of pass outs. The R² value for the second model is 0.367 indicating that 36.7% change in the dependent variable is accounted for by the independent variable. It is clear that one unit increase in the Infrastructure Facility causes 0.0.598 units of increase in the Entrepreneurship Score of pass outs.

<p>Model Depicting the Relationship between Real Life Training Facility Score and Entrepreneurship Score</p> <p><u>ES = 154.725 + 0.874 RLTF</u></p> <p>Where ES = Entrepreneurship Score and RLTF = Real Life Training Facility Score.</p>
<p>Model Depicting the Relationship between Infrastructure Facility Score and Entrepreneurship Score.</p> <p><u>ES = 163.647 + 0.598 IFS</u></p> <p>Where ES = Entrepreneurship Score and IFS = Infrastructure Facility Score.</p>

Having made a comparative analysis of the Mean Entrepreneurship Scores of pass outs from schools with different Training and Support Facility statuses, the same is done with respect to other variables in the following paragraphs.

As shown in the *table: 6.171* the Mean Entrepreneurship Scores of male and female pass outs are 179.31 and 177.63 with standard deviations of 15.225 and 14.354 respectively. The mean percentage scores are 68.97 and 68.32. The mean scores of male and female pass outs are tested by the independent sample z-test. The result of *the independent sample z-test* shows a z-value of 1.127 with a p-value of 0.260 at 5% significance level. The p-value is higher than 0.05 and therefore it is concluded that there is no significant difference between the Mean Entrepreneurship Scores of male and female pass outs. The low incidence of entrepreneurship among women in our country when compared with men could be attributed to some other reasons rather than the lack of entrepreneurial skills of women.

Table: 6.171 Independent Sample z-test of the Entrepreneurship Scores of Male and Female Pass Outs

Gender	Number of Pass Outs	Mean	Mean Percentage Score	Std. Deviation	Z	Sig.
Male	183	179.31	68.97	15.225	1.127	0.260
Female	213	177.63	68.32	14.354		
Total	396	178.40	68.62	14.768		

As shown in the *table: 6.172* the Mean Entrepreneurship Scores of pass outs of different age groups are 175.25 and 179.41 with standard deviations of 13.970 and 14.896 respectively. The respective mean percentage scores are 67.40 and 69.00. The mean scores of pass outs of different age groups are tested by the independent sample z-test. The result of *the independent sample z-test* shows a z-value of -2.419 with a p-value of 0.016 at 5% significance level. The p-value is less than 0.05 and therefore it is concluded that there is significant difference between the Mean Entrepreneurship Scores of pass outs of different age groups.

Pass outs belonging to higher age group show better entrepreneurial skills than those belonging to lower age group. The z-value is less than -1.645 and it can be established that the Entrepreneurship Scores of pass outs below twenty years are significantly lower than those above twenty years of age. So it is concluded age has an impact on the entrepreneurship development of pass outs.

Table: 6.172 Independent Sample z-test of the Entrepreneurship Scores of Pass Outs of Different Age Groups

Age Category	Number of Pass Outs	Mean	Mean Percentage Score	Std. Deviation	Z	Sig.
Below Twenty Years	96	175.25	67.40	13.970	-2.419	0.016
Twenty Years and Above	300	179.41	69.00	14.896		
Total	396	178.40	68.62	14.768		

Table: 6.173 shows the Mean Entrepreneurship Scores of pass outs from different Socio-economic Background (SEB) categories. The means for ‘poor’, ‘lower middle’ and ‘upper middle’ SEB categories are 176.34, 179.60 and 183.56 respectively with standard deviations of 14.778, 15.070 and 6.437. The respective mean percentage scores are 67.82, 69.08 and 70.60. It can be seen that the mean scores rise steadily as one move from the lower SEB category to the higher.

The mean scores of the pass from the different SEB categories are tested using the One-Way ANOVA test (*Table: 6.174*). The result of the ANOVA test shows an *F*-value of 3.471 with a *p*-value of 0.032 at 5% significance level. The *p*-value is lower than 0.05 and therefore it is concluded that there is significant difference among the Mean Entrepreneurship Scores of pass outs of different

SEB categories and socio-economic background has some relationship with the entrepreneurial skills of VHSE pass outs.

Table: 6.173 Mean Entrepreneurship Scores of Pass Outs from Different Socio-economic Backgrounds

SEB		Mean Entrepreneurship Score
Poor	Mean	176.34
	Mean % Score	67.82
	Std. Deviation	14.778
Lower Middle	Mean	179.60
	Mean % Score	69.08
	Std. Deviation	15.070
Upper Middle	Mean	183.56
	Mean % Score	70.60
	Std. Deviation	6.437
Total	Mean	178.4
	Mean % Score	68.62
	Std. Deviation	14.768

Table: 6.174 One-Way ANOVA of the Entrepreneurship Scores of Pass Outs from Different Socio-Economic Backgrounds

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1495.128	2	747.564	3.471	0.032
Within Groups	84650.225	393	215.395		
Total	86145.354	395			

Post hoc multiple comparisons were done using *LSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in

table: 6.175. It is evident that the mean difference (I-J) is significant between all the pairs except between ‘lower middle’ and ‘upper middle’.

Table: 6.175 LSD Multiple Comparison Test for the Entrepreneurship Scores of Pass Outs from Schools with Different Socio-economic Backgrounds

(I) Entrepreneurship Score	(J) Entrepreneurship Score	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Poor	Lower Middle	-3.27(*)	1.520	.032	-6.26	-.28
	Upper Middle	-7.22(*)	3.641	.048	-14.38	-.06
Lower Middle	Poor	3.27(*)	1.520	.032	.28	6.26
	Upper Middle	-3.95	3.604	.273	-11.04	3.13
Lower Middle	Poor	7.22(*)	3.641	.048	.06	14.38
	Lower Middle	3.95	3.604	.273	-3.13	11.04

(*The mean difference is significant at .05 level)

Table: 6.176 the Mean Entrepreneurship Scores of pass outs from different courses. The means for ‘MRT’, ‘MLT’ and ‘AAG’ courses are 178.65, 177.82 and 179.05 respectively with standard deviations of 15.409, 13.979 and 15.417. The respective mean percentage scores are 68.71, 68.39 and 68.87. It can be seen that the mean scores do not vary very much among the courses. AAG has the highest mean and MLT the lowest. The mean scores of the pass from different courses are tested using the One-Way ANOVA test (Table: 6.177). The result of the ANOVA test shows an *F*-value of 0.262 with a *p*-value of 0.770 at 5% significance level. The *p*-value is higher than 0.05 and therefore it is concluded that there are no significant differences among the Mean Entrepreneurship Scores of pass outs of different courses. So it is clear that course specific training doesn’t have much impact on the entrepreneurship skills of the pass outs.

Table: 6.176 Mean Entrepreneurship Scores of Pass Outs from Different Courses

Course		Mean Entrepreneurship Score
MRT*	Mean	178.65
	Mean % Score	68.71
	Std. Deviation	15.409
MLT**	Mean	177.82
	Mean % Score	68.39
	Std. Deviation	13.979
AAG***	Mean	179.05
	Mean % Score	68.87
	Std. Deviation	15.417
Total	Mean	178.4
	Mean % Score	68.62
	Std. Deviation	14.768

*MRT: Maintenance and Repairs of Radio and Television, ** MLT: Medical Laboratory Technician, *** AAG: Accounting and Auditing

Table: 6.177 One-Way ANOVA of Entrepreneurship Scores of Pass Outs from Different Courses

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	114.733	2	57.366	0.262	0.770
Within Groups	86030.621	393	218.907		
Total	86145.354	395			

Table: 6.178 shows the Mean Entrepreneurship Scores of pass outs with different grades in the VHSE examinations. The mean is highest for D+

category (189.23) and lowest for C category (174.46) respectively with standard deviations of 12.464 and 15.442. The respective mean percentage scores are 72.78 and 67.10.

Table: 6.178 Mean Entrepreneurship Scores of Pass Outs with Different Grades in the VHSE Examination

Grade	Mean Entrepreneurship Score	
D+	Mean	189.23
	Mean % Score	72.78
	Std. Deviation	12.464
C	Mean	174.46
	Mean % Score	67.10
	Std. Deviation	15.442
C+	Mean	174.72
	Mean % Score	67.20
	Std. Deviation	14.989
B	Mean	180.17
	Mean % Score	69.30
	Std. Deviation	13.888
B+	Mean	183.86
	Mean % Score	70.72
	Std. Deviation	14.052
Total	Mean	178.4
	Mean % Score	68.62
	Std. Deviation	14.768

The mean scores of the pass from different courses are tested using the One-Way ANOVA test (Table: 6.179). The result of the ANOVA test shows an *F*-value of 6.392 with a *p*-value of <0.001 at 5% significance level. The *p*-value is less than 0.05 and therefore it is concluded that there are significant differences among the Mean Entrepreneurship Scores of pass outs with different grades in the VHSE examinations.

Table: 6.179 One-Way ANOVA of the Entrepreneurship Scores of Pass Outs with Different Grades in the VHSE Examinations

Description	Sum of Squares	df	Mean Square	F	Sig.
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Between Groups	5287.497	4	1321.874	6.392	< 0.001
Within Groups	80857.857	391	206.798		
Total	86145.354	395			

Post hoc multiple comparisons were done using *Tukey HSD Multiple Comparison Test* to get more insight into the ANOVA results which is given in *table: 6.180*. It is evident that the mean differences (I-J) of the D+ category with B and B+ categories are not significant where as the differences of the D+ category with C and C+ categories are significant. Similarly the mean differences (I-J) of C+ category with B and B+ categories are also significant. The mean differences are not significant for other combinations. It is an interesting finding that the D+ category which is the lowest grade category one has the highest entrepreneurial score.

Table: 6.180 Tukey HSD Multiple Comparisons Test for the Entrepreneurship Scores of Pass Outs with Different Grades in the VHSE Examination

(I) Grades Obtained in VHSE Examination	(J) Grades Obtained in VHSE Examination	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
D+	C	14.77(*)	4.605	.013	2.15	27.39
	C+	14.51(*)	4.186	.005	3.04	25.98
	B	9.06	4.124	.183	-2.24	20.36
	B+	5.37	4.826	.799	-7.85	18.60
C	D+	-14.77(*)	4.605	.013	-27.39	-2.15
	C+	-.26	2.630	1.000	-7.47	6.95
	B	-5.71	2.530	.162	-12.64	1.23
	B+	-9.40	3.562	.066	-19.16	.37
C+	D+	-14.51(*)	4.186	.005	-25.98	-3.04
	C	.26	2.630	1.000	-6.95	7.47
	B	-5.45(*)	1.648	.009	-9.97	-.94
	B+	-9.14(*)	3.000	.021	-17.36	-.92
B	D+	-9.06	4.124	.183	-20.36	2.24

	C	5.71	2.530	.162	-1.23	12.64
	C+	5.45(*)	1.648	.009	.94	9.97
	B+	-3.69	2.913	.712	-11.67	4.30
B+	D+	-5.37	4.826	.799	-18.60	7.85
	C	9.40	3.562	.066	-.37	19.16
	C+	9.14(*)	3.000	.021	.92	17.36
	B	3.69	2.913	.712	-4.30	11.67

The above analysis of the entrepreneurship profiles of the students and pass outs shows that none of the dimensions of entrepreneurship included in this study secured a 'dominant' position for both students and pass outs. This is a matter of concern. All the dimensions of entrepreneurship showed a 'supportive' response for pass outs. VHSE pass outs from Kerala show good *decision making skills, knowledge ability, emotional stability, use of feedback and integrity and communication* while they are not very good when it comes to *risk taking, persistence and hard work, persuasive ability, managerial ability, innovativeness, personal responsibility, motivation and divergent thinking*. In the case of students, all the dimensions except *managerial ability* showed a 'supportive' response. *Managerial ability* showed a 'least emerging' response for students. Mean entrepreneurship scores of both students and pass outs are only moderate and not high.

Comparative analysis shows no significant differences in the entrepreneurship scores of male and female students and pass outs. The incidence of low entrepreneurship among females in our state can be attributed to reasons other than lack of entrepreneurship skills.

Significant differences are also seen in the entrepreneurship scores of pass outs from schools with different training and support facility statuses. Entrepreneurship scores are higher for pass outs from schools with 'average' training and support facility when compared with those from schools with 'poor' training and support facility. Further analysis shows significant difference in the entrepreneurship scores of pass outs from schools with different infrastructure facilities and different real life training facilities, the two important dimensions of

training and support facility. Entrepreneurship scores are higher for pass outs from schools with better infrastructure and real life training facilities when compared with those from schools where these facilities are lagging behind. Therefore these two facilities are more important for the development of entrepreneurial skills and improving these facilities would have a positive impact on the entrepreneurship development of those who pursue the scheme.

A strong positive correlation is seen between the training and support facility scores of the schools and the mean entrepreneurship scores of the pass outs. A strong positive correlation is also seen between the mean entrepreneurship scores of the pass outs with both the real life training facility scores and infrastructure facility scores of the schools. This once again emphasises the need to take immediate steps to improve the Training and Support Facilities of the VHS schools. This is vital for the survival of the scheme in the state.

SECTION VI

6.7 Nature and rate of Higher Studies and Employment among the Pass Outs

As stated earlier Vocational Higher Secondary Education in India has its own definite objectives. One of the primary objectives of the Vocational Higher Secondary Education in India is to increase individual employability at the higher secondary level by imparting work related training to students and to prepare them for self or wage employment. It is evident that the scheme aims to divert a sizeable proportion of students completing VHSE to the world of work. At the same time, as mentioned earlier, the implementation of the scheme in Kerala is *bifocal* which allows students to study optional subjects (Part III) if they wish, which makes them eligible for higher studies. Kremer (2000)²⁶⁸ opined that this type of implementation has virtually transformed the VHSE scheme in Kerala into merely a transition stage to higher studies. Under these

circumstances it is important to study the nature and rate of higher studies and employment among the VHSE pass outs in Kerala. The following paragraphs make an attempt in this direction.

The *table: 6.181* shows that a vast majority (374 out of the 396 pass outs - 94.4%) have gone for some sort of studies after VHSE. But all the studies pursued by the pass outs cannot be called higher studies. Some have pursued courses which are lower than or equivalent to that of VHSE. These are mainly certificate courses of one year or lesser duration which cannot be regarded as higher studies.

Table: 6.181 Percentage of Pass Outs who have Pursued Some Sort of Studies after VHSE

Response	Frequency	Percent
Pursued	374	94.4
Didn't Pursue	22	5.6
Total	396	100.0

The *table: 6.182* shows the percentage of pass outs who have pursued higher studies. It can be seen that majority (72%) of the pass outs have pursued higher studies. This is much higher than the national rate of 38% ORG (1996)²⁶⁹.

Table: 6.182 Percentage of Pass Outs who have Pursued Higher Studies

Response	Frequency	Percent
Pursued	285	72.0
Didn't Pursue	111	28.0
Total	396	100.0

It is important to test whether the sample information that is observed in the above table (*Table: 6.182*) that the proportion of the pass outs (72%) who have pursued higher education is actually higher than the national average of

38% for the population as a whole. Accordingly the following hypothesis is tested that the proportion of pass outs who have pursued higher education is 38% against it is higher than 38%.

Testing of Hypothesis

H_0 : *The proportion of VHSE pass outs who have pursued higher education is 38% ($H_0: p = 0.38$).*

H_1 : *The proportion of VHSE pass outs who have pursued higher education is higher than 38% ($H_1: p > 0.38$).*

The above hypothesis is tested using the z-test for proportion. *The results of the z-test for proportion give a z-value of 4.834.* Since the z-value is higher than 1.645, the null hypothesis is rejected and the alternative hypothesis is accepted that the proportion of VHSE who have pursued higher education is higher than the national average of 38%.

An effort was made to know the motivation behind such a vast majority of pass outs going for higher studies. The *table: 6.183* below shows that 31.8% have gone for higher studies for attaining a higher status in the society and 37.9% have done so for getting better employment. 1% have gone for higher studies owing to the compulsion of others and only 1.3% have done so because of not getting a job. This is a clear indication of the fact that most of the VHSE students are taking the VHSE scheme as a transition stage to higher studies. This is against the very essence of the programme. The admission criteria should be modified to make sure that those who want to enter the world of work after VHSE and those having the right attitude and motivation are admitted to the scheme.

Table: 6.183 Reasons behind Pursuing Higher Studies by Pass Outs

Reason	Frequency	Percent	Cumulative Percent
Higher Status	126	31.8	31.8
Better Employment	150	37.9	69.7

Compulsion by Others	4	1.0	70.7
Didn't Get a Job	5	1.3	72.0
Not Applicable (Didn't Pursue Higher Study)	111	28.0	100.0
Total	396	100.0	

Out of the 111 pass outs who haven't pursued higher studies, 25, (6.3% of the total pass outs), pointed out financial difficulties as the reason for not pursuing higher studies and 5, (1.3% of the total pass outs), said they wanted to go for employment and got employed. 38 pass outs (9.6% of the total pass outs), said they were not interested in higher studies and another 43 (10.9% of the total pass outs) said they didn't get admission to their courses of choice (Table: 6.184). Therefore, economic conditions permitting and admission available, the actual number of pass outs who pursued higher studies would have gone up to a staggering 353 that is 89.14% of the total pass outs.

Table: 6.184 Reasons behind Not Pursuing Higher Studies by Pass Outs

Reason	Frequency	Percent
Financial Problems	25	6.3
Employed	5	1.3
Not Interested	38	9.6
Not Available for the Same Trade	43	10.9
Not Applicable (Pursued Higher Studies)	285	72.0
Total	396	100.0

Table 6.185 below shows that the rate of higher studies of pass outs is increasing year after year. The rate of higher studies increased from 59.2% in 2004 to 85.4% in 2008. This is also not a good sign for VHSE in Kerala. This once again cements the fact that VHSE is being perceived by most of its pursuers as a transition stage to higher studies. Chi-square test shows a chi-square value of 17.928 with a p-value of <0.001 indicating that the

differences in the rates of higher studies of pass outs of different years is significant.

Table: 6.185 Rates of Higher Studies of Pass Outs of Different Years

Year of Passing Out		Pursued Higher Studies		Total
		Yes	No	
2004	Count	42	29	71
	% within Year	59.2%	40.8%	100.0%
2005	Count	45	27	72
	% within Year	62.5%	37.5%	100.0%
2006	Count	54	20	74
	% within Year	73.0%	27.0%	100.0%
2007	Count	62	21	83
	% within Year	74.7%	25.3%	100.0%
2008	Count	82	14	96
	% within Year	85.4%	14.6%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.186* shows that only a very small proportion of the pass outs (1.3%) entered employment straight after VHSE. So it is not out of place to probe the reasons for this phenomenon. It can be seen that 89.1% wanted to pursue higher studies after VHSE. Of the remaining 10.9%, 7.3% didn't want to go for employment. Thus only 3.6% actually wanted to get an employment. Out of these 1% didn't get employment and 1.3% didn't go for employment owing to resistance from their family. Eventually only 1.3% entered employment directly after VHSE. This indicates the failure of the programme in the state as

far as diverting the students into the world of work after the completion of the course.

Table: 6.186 Reasons behind Not Going for Employment Straight after VHSE by Pass Outs

Reason	Frequency	Percent	Cumulative Percent
Wanted to Pursue Higher Studies	353	89.1	89.1
Didn't get a job	4	1.0	90.1
Resistance from the Family	5	1.3	91.4
Not Interested in Job	29	7.3	98.6
Not Applicable (Employed)	5	1.3	100.0
Total	396	100.0	

Further enquiry was conducted to know the areas of higher studies, self employments and wage employments and the reasons for not sticking to the same area as that of the VHSE trade for higher studies, self employments and wage employments.

Table: 6.187 shows that out of the 285 respondents (72% of the total respondents) who have pursued higher studies only 121 (30.6% of the total respondents) have done so in the same area as that of the VHSE trade. 41.1% of the total respondents have moved to other areas. Even though the scheme of VHSE provides opportunities for higher studies, it is actually meant for higher studies in the same area as that of the VHSE trade. This is also not happening in Kerala.

Table: 6.187 Areas of Higher Studies of Pass Outs

Area	Frequency	Percent
Same as VHSE	121	30.6
Different from VHSE	164	41.4
Not Applicable (Didn't Pursue Higher Studies)	111	28.0
Total	396	100.0

As far as the reasons for not pursuing higher studies in the same area are concerned, 16.4% of the pass outs pointed out the 'difficulty in getting admission' as the reason for not pursuing higher studies in the same area and 10.8% pointed out the 'unavailability of suitable courses' as the reason (Table: 6.188). Lack of interest in the trade (5.5%), bleak job prospects of the trade (4.8%) are the other important reasons. So there is a need to increase the opportunities of the VHSE pass outs to pursue higher studies in the same area as that of their VHSE trade. It is a fact that pass outs of most of the VHSE courses do not enjoy any reservations to the concerned higher study courses and reservations when available are totally inadequate. Another interesting thing is that the marks scored in the vocational subjects do not find any place in the preparation of the rank lists of candidates for admission to none of the higher study courses. Then there is the total unavailability of higher study courses for certain trades. Further no lateral entry is provided to pass outs to the engineering subjects of the Poly Techniques in Kerala whereas it is available in the nearby state of Tamil Nadu. So there is a need to effect some changes in these areas. Higher study courses should be started in a few selected VHS schools in selected trades, mainly targeting VHSE pass outs. Existing courses should be modified to improve the job prospects of them and new courses with better job prospects should be started. Regarding those who have moved to a different area for higher studies owing to lack of interest in the trade, there is a need for proper career guidance and counselling and awareness creation among pass outs and there is also a need to look into the admission criteria of VHSE.

Table: 6.188 Reasons for Not Pursuing Higher Studies in the Same Area by Pass Outs

Reason	Frequency	Percent	Cumulative Percent
Didn't Get Admission	65	16.4	16.4
Not Available	43	10.8	37.4
Not Interested	22	5.5	21.7
Bleak Job Prospects	19	4.8	26.5
Others	15	3.8	41.2

Not Applicable (Pursued Higher Studies in the Same area/Didn't Pursue Higher Studies)	232	58.6	100.0
Total	396	100.0	

Having seen that majority of the pass outs who are pursuing higher studies are doing so in an area different from that of their VHSE trade, it is worthwhile to see whether there are any differences in the areas of higher studies of the pass outs from different genders, from different courses, having different grades in the VHSE examinations, from different entrepreneurship categories, from schools with different training and support facility statuses and from different awareness categories.

Gender wise distribution of the VHSE pass outs based on their areas of higher studies is given below. The *table: 6.189* shows some differences in the areas of higher studies of pass outs from different genders. A higher number of female pass outs are pursuing higher studies in the same area (50.8%) when compared with males (28.7%). The result of the chi-square test shows a *chi-square value of 13.462 with a p-value of <0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the areas of higher studies between male and female pass outs.

Table: 6.189 Areas of Higher Studies by Male and Female Pass Outs

Gender		Area of Higher Studies		Total
		Same	Different	
Male	Count	31	77	108
	% within Gender	28.7%	71.3%	100.0%
Female	Count	90	87	177
	% within Gender	50.8%	49.2%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

The course wise distribution of the VHSE pass outs based on their areas of higher studies is given below. The *table: 6.190* shows some differences in

the areas of higher studies by the pass outs from different courses. MLT has the highest number of pass outs pursuing higher studies in the same area (53.2%) followed by AAG with 44.9% and MRT with only 20.8%. The result of the chi-square test shows a *chi-square value of 19.891 with a p-value of <0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the areas of higher studies among pass outs from different courses. This difference may be because of the difference in the availability of courses for higher studies for different trades and the difficulty in getting admission to certain courses.

Table: 6.190 Areas of Higher Studies by Pass Outs from Different Courses

Course		Area of Higher Studies		Total
		Same	Different	
Maintenance and Repairs of Radio and Television(MRT)	Count	15	57	72
	% within Course	20.8%	79.2%	100.0%
Medical Laboratory Technician(MLT)	Count	66	58	124
	% within Course	53.2%	46.8%	100.0%
Accounting and Auditing(AAG)	Count	40	49	89
	% within Course	44.9%	55.1%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

The distribution of the areas of higher studies by the pass outs based on their Grades in the VHSE examination is given below. The *table: 6.191* shows some differences in the areas of higher studies by the pass outs. 'B' has the highest number of pass outs pursuing higher studies in the same area (49.3%) and 'C+' the lowest (31.7%). 'C+' has the highest percentage of pass outs pursuing higher studies in a different area with 68.3% and 'B' the lowest (50.7%). It is evident that more pass outs having higher grades pursue higher studies in the same area when compared to those with lower grades. This is an

interesting finding. The result of the chi-square test shows a *chi-square value of 7.999 with a p-value of 0.005* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the areas of higher studies by pass with different grades in the VHSE examination. This difference may be because of the fact that it is easier for the pass outs with higher grades to get admission to their favourite courses and also because of the fact that they are more interested in pursuing their higher studies in the same area when compared with those with lower grades.

Table: 6.191 Areas of Higher Studies by Pass Outs with Different Grades in the VHSE Examination

Grade		Area of Higher Studies		Total
		Same	Different	
C	Count	2	4	6
	% within Grades Obtained in VHSE Examination	33.3%	66.7%	100.0%
C+	Count	32	69	101
	% within Grades Obtained in VHSE Examination	31.7%	68.3%	100.0%
B	Count	74	76	150
	% within Grades Obtained in VHSE Examination	49.3%	50.7%	100.0%
B+	Count	13	15	28
	% within Grades Obtained in VHSE Examination	46.4%	53.6%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

Distribution of the VHSE pass outs from different entrepreneurship categories based on their areas of higher studies is given below. The *table: 6.192* shows not much difference in the areas of higher studies of pass outs from different entrepreneurship categories. A slightly higher number of pass outs from ‘average’ category are pursuing higher studies in the same area (43.1%) when compared with those from ‘good’ category (38.5%). But the

result of the chi-square test shows a *chi-square value of 0.295 with a p-value of 0.587* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the areas of higher studies between pass outs from different entrepreneurship categories.

Table: 6.192 Areas of Higher Studies by Pass Outs from Different Entrepreneurship Categories

Entrepreneurship Category		Area of Higher Studies		Total
		Same	Different	
Average	Count	106	140	246
	% within Entrepreneurship Category	43.1%	56.9%	100.0%
Good	Count	15	24	39
	% within Entrepreneurship Category	38.5%	61.5%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

Distribution of the VHSE pass outs from schools with different Training and Support Facility statuses based on their areas of higher studies is given below. The *table: 6.193* shows not much difference in the areas of higher studies of pass outs from different Training and Support Facility statuses. A slightly higher number of pass outs from 'poor' category are pursuing higher studies in the same area (46.4%) when compared with those from 'average' category (41.5%). But the result of the chi-square test shows a *chi-square value of 0.450 with a p-value of 0.502* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the areas of higher studies between pass outs from schools with different Training and Support Facility statuses.

Table: 6.193 Areas of Higher Studies by Pass Outs from Schools with Different Training and Support Facility Statuses

Training and Support Facility	Area of Higher Studies		Total
	Same	Different	

Poor	Count	26	30	56
	% within Training and Support Facility Category	46.4%	53.6%	100.0%
Average	Count	95	134	229
	% within Training and Support Facility Category	41.5%	58.5%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

Distribution of the VHSE pass outs from schools with different awareness categories based on their areas of higher studies is given below. The table: 6.194 shows not many differences in the areas higher studies of pass outs from different awareness categories. 'Good' category has the highest number of pass outs doing higher studies in the same area (53.8%) followed by 'poor' with 42.7% and 'average' with 34.6%. The result of the chi-square test shows a *chi-square value of 1.350 with a p-value of 0.509* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the areas of higher studies among pass outs from different awareness categories.

Table: 6.194 Areas of Higher Studies by Pass Outs from Schools with Different Awareness Categories

Awareness Category		Area of Higher Studies		Total
		Same	Different	
Poor	Count	105	141	246
	% within Awareness Category	42.7%	57.3%	100.0%
Average	Count	9	17	26
	% within Awareness Category	34.6%	65.4%	100.0%
Good	Count	7	6	13
	% within Awareness Category	53.8%	46.2%	100.0%
Total	Count	121	164	285
	% within Total	42.5%	57.5%	100.0%

The courses of higher studies by the pass outs are given below. The table: 6.195 that 48.2% of the pass outs have opted non-professional degree courses for their higher studies. 10.9% have opted diploma courses and 12.9 %

have opted professional degree courses for their higher studies. So it is clear that majority of those who pursue higher studies have opted non-professional for degree courses. In most of the cases these courses are not in the same area as that of their VHSE trade. This is one of the reasons for a high percentage of pass outs pursuing higher studies in areas different from their VHSE trade.

Table: 6.195 Courses of Higher Studies by Pass Outs

Course	Frequency	Percentage	Cumulative Percentage
Non-Professional Degree Courses	191	48.2	48.2
Diploma Courses	43	10.9	59.1
Professional Degree Courses	51	12.9	72.0
Not Applicable (Didn't Pursue Higher Studies)	111	28.0	100.0
Total	396	100.0	

Having seen that majority of the pass outs who are pursuing higher studies are doing non-professional degree courses, it is worthwhile to see whether there are any differences in the courses of higher studies of the pass outs from different genders, from different courses and from different SEB backgrounds.

Gender wise distribution of the VHSE pass outs based on their courses of higher studies is given below. The *table: 6.196* shows some differences in the courses of higher studies of pass outs from different genders. A higher number of female pass outs are pursuing diploma and professional courses (15.3% and 23.7% respectively) when compared with males (14.8% and 8.3% respectively). The picture is just opposite for non-professional courses with 76.9% for males and 61.0% for females. The result of the chi-square test shows a *chi-square value of 11.402 with a p-value of 0.003* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the courses of higher studies between male and female pass outs.

Table: 6.196 Courses of Higher Studies by Male and Female Pass

Gender	Course of Higher Studies
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		Non-Professional Degree Courses	Diploma Courses	Professional Degree Courses	Total
Male	Count	83	16	9	108
	% within Gender	76.9%	14.8%	8.3%	100.0%
Female	Count	108	27	42	177
	% within Gender	61.0%	15.3%	23.7%	100.0%
Total	Count	191	43	51	285
	%within Total	67.0%	15.1%	17.9%	100.0%

The course wise distribution of the VHSE pass outs based on their courses of higher studies is given below. The *table: 6.197* shows some differences in the courses of higher studies by the pass outs from different courses. AAG has the highest number of pass outs pursuing non-professional degree courses with 80.9% followed by MRT with 73.6% and MLT with 53.2%. MLT has the highest number of pass outs pursuing diploma and professional degree courses (20.2% and 26.6% respectively) followed by MRA (13.9% and 12.5% respectively) and AAG (9.0% and 10.1% respectively). The result of the chi-square test shows a *chi-square value of 20.374 with a p-value of <0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the courses of higher studies among pass outs from different courses. This difference may be because of the difference in the availability of courses for higher studies for different trades and the difficulty in getting admission to certain courses.

Table: 6.197 Courses of Higher Studies by Pass Outs from Different VHSE Courses

Course		Course of Higher Studies			Total
		Non-Professional Degree Courses	Diploma Courses	Professional Degree Courses	
Maintenance and Repairs of Radio and Television(MRT)	Count	53	10	9	72
	% within Course	73.6%	13.9%	12.5%	100.0%
Medical Laboratory Technician(MLT)	Count	66	25	33	124
	% within Course	53.2%	20.2%	26.6%	100.0%

Accounting and Auditing(AAG)	Count	72	8	9	89
	% within Course	80.9%	9.0%	10.1%	100.0%
Total	Count	191	43	51	285
	% within Total	67.0%	15.1%	17.9%	100.0%

The distribution of the courses of higher studies by the pass outs based on their Socio-Economic Backgrounds (SEB) is given below. The *table: 6.198* shows some differences in the courses of higher studies by the pass outs. 'Poor' SEB group has the highest number of pass outs pursuing non-professional degree courses (78.9%) followed by 'lower middle' with 63.2% and 'upper middle' with 18.8%. 'Upper middle' has the highest percentage of pass outs doing diploma and professional degree courses with respective percentages of 37.5% and 43.8%. 'Lower middle' has respective percentages of 11% and 25.8%. For 'poor' the percentages are 17.5% and 3.5% respectively. It is evident that professional courses are pursued more by pass outs from higher SEB groups whereas it is opposite for non-professional degree courses. The result of the chi-square test shows a *chi-square value of 25.212 with a p-value of <0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the courses of higher studies among pass outs from different Socio-Economic Backgrounds. This difference may be because of the fact that the financial requirements of professional courses are more when compared with other courses.

Table: 6.198 Courses of Higher Studies by Pass Outs from Different Socio-Economic Backgrounds

SEB		Course for Higher Studies			Total
		Non-Professional Degree Courses	Diploma Courses	Professional Degree Courses	
Poor	Count	90	20	4	72
	% within Socio-Economic Status Group	78.9%	17.5%	3.5%	100.0%
Lower	Count	98	17	40	124

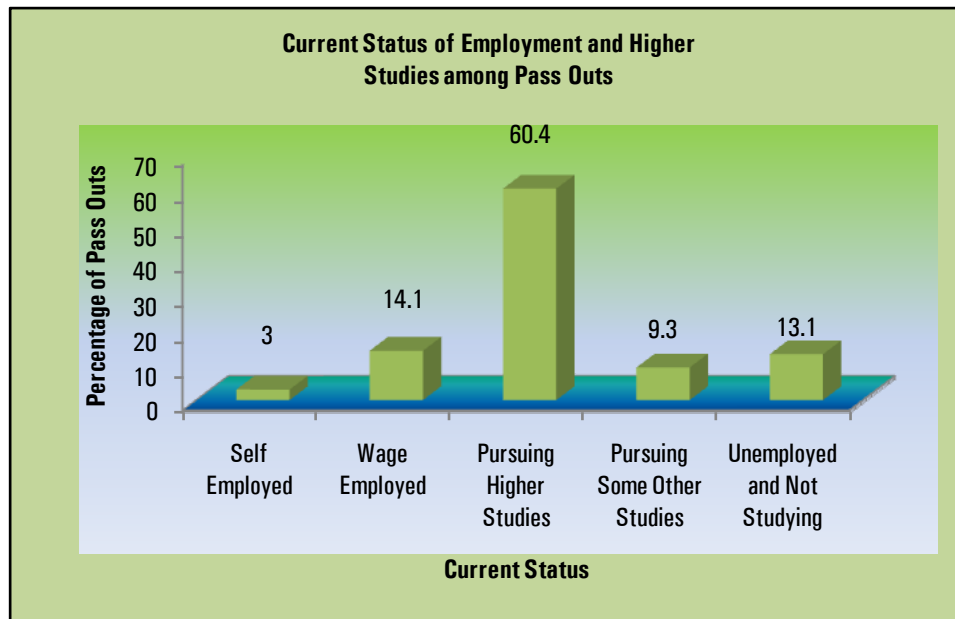
Middle	% within Socio-Economic Status Group	63.2%	11.0%	25.8%	100.0%
Upper	Count	3	6	7	89
Middle	% within Socio-Economic Status Group	18.8%	37.5%	43.8%	100.0%
Total	Count	191	43	51	285
	% within Total	67.0%	15.1%	17.9%	100.0%

Given below is the current status of higher studies and employment of pass outs. Out of the 285 who have gone for higher studies 239 (60.4% of the total) are still pursuing higher studies and the remaining 46 have completed their higher studies (Table: 6.199). 17.2% of the pass outs are engaged in some sort of employment. This is much lower than the national average of 28% (ORG, 1996)²⁷⁰. Out of those employed 14.2% are doing wage employment and only 3% are doing self employment. The rate of self employment is very low among the pass outs. More self employment efforts should come from the part of the pass outs. All possible steps should be taken by the authorities to make this happen. The column chart provides a clearer view (Figure: 6.20).

Table: 6.199 Current Status of Higher Studies and Employment among Pass Outs

Current Status	Frequency	Percent	Cumulative Percent
Self Employed	12	3.0	3.0
Wage Employed	56	14.2	17.2
Pursuing Higher Studies	239	60.4	77.5
Pursuing Some Other Studies	37	9.3	86.9
Unemployed and Not Studying	52	13.1	100.0
Total	396	100.0	

Figure: 6.20 Column Chart Showing the Current Status of Higher Studies and Employment among Pass Outs



It is important to test whether the sample information that is observed in the above table (*Table: 6.199*) that the proportion of the pass outs (17.2%) who are employed is actually less than the national average of 28% for the population as a whole. Accordingly the following hypothesis is tested that the proportion of pass outs who are employed is 28% against it is less than 28%.

Testing of Hypothesis

H_0 : The proportion of VHSE pass outs who are employed is 28% ($H_0: p = 0.28$).

H_1 : The proportion of VHSE pass outs who are employed is less than 28% ($H_1: p < 0.28$).

The above hypothesis is tested using the z-test for proportion. The results of the z-test for proportion give a z-value of -4.95. Since the z-value is less than -1.645, the null hypothesis is rejected and the alternative hypothesis is accepted that the proportion of VHSE pass outs who are employed is less than the national average of 28%.

Having seen that the rate of self employment is very low among the pass outs, it is not out of place to probe the reasons for that. The *table: 6.200* that 26.85% of the wage employed and unemployed pass outs pointed out financial difficulties as the reason for not doing self employment. Another 26.85% said they prefer wage employment over self employment. 25% pointed out lack of opportunities as the reason. 7.41% had no interest in the trade and 6.48% didn't have the necessary skills to start self employment. The remaining 7.41% had other reasons for not doing self employment. This shows that financial difficulty is a major problem for starting self employment and there is a need to provide easy finance to the pass outs for starting self employment and more pass outs should be motivated and guided to start self employment.

Table: 6.200 Reasons behind Not Doing Self Employment by Wage Employed and Unemployed Pass Outs

Reason	Frequency	Percent
Financial Difficulties	29	26.85
Prefer Wage Employment	29	26.85
Lack of Opportunities	27	25.00
Not Interested in the Trade	8	7.41
Lack of Necessary Skills	7	6.48
Others	8	7.41
Total	108	100.00

Table: 6.201 below shows the area of employment of pass outs. Only 22 out of the 68 pass outs who are employed are in the same area as that of their VHSE trade. The remaining 46 are employed in an area different from their VHSE trade. So majority of those employed are employed in areas different from that of their VHSE trade. Now it is important to know the reasons behind this.

Table: 6.201 Areas of Employment of Pass Outs

Area	Frequency	Percent
Same as VHSE	22	5.6
Different from VHSE	46	11.6

Not Applicable (Not Employed)	328	82.8
Total	396	100.0

The *table: 6.202* below shows that ‘lack of opportunities’ (4.0%) and ‘poor remuneration’ (3.0%) are the major reasons for changing the area of employment by pass outs who are employed. These are followed by lack of interest in the trade (2%) and lack of necessary skills (0.8%). So there is a need to create ample job opportunities for VHSE pass outs in the concerned areas and to ensure decent remuneration for those employed. Pass outs should be encouraged to start self employment in the same area and they should be provided with adequate support. The training provided should be sufficient enough to make the pass outs competent enough to occupy occupations in their concerned areas or start self employment.

Table: 6.202 Reasons for Not Pursuing Employment in the Same Area by Pass Outs

Reason	Frequency	Percent	Cumulative Percent
Lack of Opportunities	16	4.0	4.0
Poor Remuneration	12	3.0	7.0
Lack of Interest in the Trade	8	2.0	9.0
Lack of Necessary Skills	7	1.8	10.8
Others	3	0.8	11.6
Not Applicable (Not Doing Employment/Doing Employment in the Same Area)	350	88.4	100.0
Total	396	100.0	

Having seen that majority of the pass outs who are employed have chosen an area different from that of their VHSE trade, it is worthwhile to see whether there are any differences in the areas of employments of the pass outs from different genders, from different courses and from different awareness categories.

Gender wise distribution of the VHSE pass outs based on their areas of employments is given below. The *table: 6.203* shows some differences in the areas of employments of pass outs from different genders. A higher number of female pass outs are engaged in employments in the same area (50.0%) when

compared with males (22.7%). The result of the chi-square test shows a *chi-square value of 5.278 with a p-value of 0.022* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the areas of employments between male and female pass outs.

Table: 6.203 Areas of Employments by Male and Female Pass Outs

Gender		Area of Employments		Total
		Same	Different	
Male	Count	10	34	44
	% within Gender	22.7%	77.3%	100.0%
Female	Count	12	12	24
	% within Gender	50.0%	50.0%	100.0%
Total	Count	22	46	68
	%within Total	32.4%	67.6%	100.0%

The course wise distribution of the VHSE pass outs based on their areas of employments is given below. The *table: 6.204* shows some differences in the areas of employments by the pass outs from different courses. MLT has the highest number of pass outs engaged in employments in the same area (62.9%). AAG and MRT have no one engaged in employment in the same area. So it can be concluded that there are some differences in the areas of employments among pass outs from different courses. This difference may be because of the difference in the availability of opportunities for employment for different courses.

Table: 6.204 Areas of Employments by Pass Outs from Different Courses

Course		Area of Employments		Total
		Same	Different	
Maintenance and Repairs of Radio and Television (MRT)	Count	0	17	17
	% within Course	0.0%	100.0%	100.0%
Medical Laboratory Technician (MLT)	Count	22	13	35
	% within Course	62.9%	37.1%	100.0%
Accounting and Auditing (AAG)	Count	0	16	16
	% within Course	0.0%	100.0%	100.0%

Total	Count	22	46	68
	% within Total	32.4%	67.6%	100.0%

Distribution of the VHSE pass outs from different awareness categories based on their areas of employments is given below. The *table: 6.205* shows some difference in the areas employments of pass outs from different awareness categories. All the pass outs from 'average' category are doing employments in the same area (100.0%) when compared with those from 'poor' category (30.3%). So it can be concluded that there are some differences in the areas of employments between pass outs from different awareness categories.

Table: 6.205 Areas of Employments by Pass Outs from Different Awareness Categories

Awareness Category		Area of Employments		Total
		Same	Different	
Poor	Count	20	46	66
	% within Awareness Category	30.3%	69.7%	100.0%
Average	Count	2	0	2
	% within Awareness Category	100.0%	.0%	100.0%
Total	Count	22	46	68
	% within Total	32.4%	67.6%	100.0%

Next attempt was to know the sector in which the pass outs are employed because this gives an indication of the of employment prospects of the VHSE pass outs. *Table: 6.206* shows the distribution of the wage employed pass outs irrespective of their area of employment. It is clear that the major job provider is the private sector which employs 40 out of the 56 (71.4% of the employed and 10.1% of the total) employed pass outs followed by semi-government (10 out of

the 56) (17.9% of the employed and 2.5% of the total) and government (6 out of the 56) (10.7% of the employed and 1.5% of the total).

Table: 6.206 Sector of Employment of Pass Outs

Sector	Frequency	Percent of Total	Percent of Employed	Cumulative Percent of Employed
Government	6	1.5	10.7	10.7
Semi-Government	10	2.5	17.9	28.6
Private	40	10.1	71.4	100.0
Total	56	14.1	100.0	

Sector wise distribution of employed pass outs with respect to the area of employment is analysed now (*Table: 6.207*). It is very interesting to note that all the pass outs who are employed in the government sector are in the same area as that of their VHSE trade. The distribution is 50:50 for semi-government sector whereas in private sector only 6 out of the 40 wage employed pass outs are in the same area as that of their VHSE trade. This is contrary to the expectation that there are more job opportunities in the area of their trade for VHSE pass outs in the private sector when compared with the government and semi-government sectors. It has already been seen that one of the major reasons for shifting the area is poor remuneration. In private sectors, the remuneration for VHSE pass outs is not so attractive. Government sector provides better remuneration and job security for them. So there is a need to provide more job opportunities for VHSE pass outs in the government sector and as a first step towards this all the VHSE courses should be approved by the Kerala Public Service Commission (KPSC).

Table: 6.207 Area of Employment of Pass Outs Employed in Different Sectors

Sector Employed	Area of Employment		Total
	Same as VHSE	Different from VHSE	

Government	6	0	6
Semi-government	5	5	10
Private	6	34	40
Total	17	39	56

Table: 6.208 below gives a comparison of the average monthly income of wage employed and self employed pass outs. It can be seen that the average monthly income for wage employed pass outs is Rs.7370/- whereas it is Rs.10625/- for self employed pass outs. It is clear that the self employed pass outs generate more income than wage employed pass outs. This is a strong reason and motivation for pass outs to do self employment.

Table: 6.208 Comparison of the Average Monthly Income of Wage Employed and Self Employed Pass Outs

Type of Employment	Average Monthly Income
Wage	7370
Self	10625

Having analysed the rate of higher studies of all the VHSE pass outs taken together, it is now time to analyse the same with respect to variables like gender, age, type of school, district, location of residence, course, grades in the VHSE examination and socio-economic status of the pass outs.

The *table: 6.209* shows the rate of higher studies among male and female pass outs. It can be seen that 83.1% of female pass outs and 59% of male pass outs have pursued higher studies. It is clear that a higher proportion of female pass outs have pursued higher studies when compared with male pass outs. *The result of the chi-square test shows a chi-square value of 28.298 with a p-value of <0.001 at 5% significance level.* Since the p-value is below 0.05, it can be concluded that there is significant difference in the rate of higher studies between male and female pass outs.

Table: 6.209 Rate of Higher Studies among Male and Female Pass Outs

Gender		Higher Study Status		Total
		Pursued	Didn't Pursue	
Male	Count	108	75	183
	% within Gender	59.0%	41.0%	100.0%
Female	Count	177	36	213
	% within Gender	83.1%	16.9%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.210* shows the rate of higher studies of pass outs of different age groups. Differences can be seen in the rate of higher studies of pass outs of

different age groups. 85.4% of pass outs below twenty years of age and 67.7% of pass outs above twenty years have pursued higher studies. This points to the fact that the rate of higher studies is higher among recent pass outs. *The result of the chi-square test shows a chi-square value of 11.358 with a p-value of 0.001 at 5% significance level.* Since the p-value is below 0.05, it can be concluded that there are significant differences in the rate of higher studies of pass outs belonging to different age groups.

Table: 6.210 Rate of Higher Studies of Pass Outs of Different Age Groups

Age Group		Higher Study Status		Total
		Pursued	Didn't Pursue	
Below Twenty Years	Count	82	14	96
	% within Age Category	85.4%	14.6%	100.0%
Twenty Years and Above	Count	203	97	300
	% within Age Category	67.7%	32.3%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.211* shows the rate of higher studies of pass outs from private and government schools. It can be seen that 74.3% of pass outs from private schools and 71.1% of pass outs from government schools have pursued higher studies. It is clear that there is not much difference in the rate of higher studies of pass outs from private and government schools. *The result of the chi-square test shows a chi-square value of 0.409 with a p-value of 0.522 at 5% significance level.* Since the p-value is above 0.05, it can be concluded that there is no significant difference in the rate of higher studies between pass outs from private and government schools.

Table: 6.211 Rate of Higher Studies of Pass Outs from Private and Government Schools

Type of School		Higher Study Status		Total
		Pursued	Didn't Pursue	
Private	Count	81	28	109
	% within Type of School	74.3%	25.7%	100.0%
Government	Count	204	83	287
	% within Type of School	71.1%	28.9%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.212* shows the rate of higher studies of the pass outs from different districts. There is not much difference in the rate of higher studies of pass outs from different districts. Thrissur has the highest percentage of 74.4% followed by Kollam with 72% and Kozhikkode with 68.7%. *The result of the chi-square test shows a chi-square value of 0.913 with a p-value of 0.634 at 5% significance level.* Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of higher studies of pass outs from different districts.

Table: 6.212 Rate of Higher Studies of Pass Outs from Different Districts

District		Higher Study Status		Total
		Pursued	Didn't Pursue	
Kollam	Count	121	47	168
	% within District	72.0%	28.0%	100.0%
Thrissur	Count	96	33	129
	% within District	74.4%	25.6%	100.0%
Kozhikkode	Count	68	31	99
	% within District	68.7%	31.3%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.213* shows the rate of higher studies of the pass outs residing in different localities. Some differences are seen in the rate of higher studies of pass outs from different localities. 76.9% of pass outs from Corporation, 72.2% of pass outs from Panchayath and 57.9% of pass outs from Municipality have pursued higher studies. Municipality has a lower percentage of pass outs pursuing higher studies when compared with Panchayath and Corporation. *But the result of the chi-square test shows a chi-square value of 2.348 with a p-value of 0.309 at 5% significance level.* Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of higher studies of pass outs residing in different localities.

Table: 6.213 Rate of Higher Studies of Pass Outs Residing in Different Localities

Locality		Higher Study Status		Total
		Pursued	Didn't Pursue	
Panchayath	Count	244	94	338
	% within Location of Residence	72.2%	27.8%	100.0%
Municipality	Count	11	8	19
	% within Location of Residence	57.9%	42.1%	100.0%
Corporation	Count	30	9	39
	% within Location of Residence	76.9%	23.1%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.214* shows the rate of higher studies of the pass outs from different courses. Not much difference is seen in the rate of higher studies of pass outs from different courses. AAG has the highest percentage of pass outs pursuing higher studies with 75.4% followed by MLT with 70.9% and MRT with 69.9%. *The result of the chi-square test shows a chi-square value of 1.023 with a p-value of 0.600 at 5% significance level.* Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of higher studies of pass from different courses.

Table: 6.214 Rate of Higher Studies of Pass Outs from Different Courses

Course		Higher Study Status		Total
		Pursued	Didn't Pursue	
Maintenance and Repairs of Radio and Television(MRT)	Count	72	31	103
	% within Course	69.9%	30.1%	100.0%
Medical Laboratory Technician(MLT)	Count	124	51	175
	% within Course	70.9%	29.1%	100.0%
Accounting and Auditing(AAG)	Count	89	29	118
	% within Course	75.4%	24.6%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.215* shows the rate of higher studies of the pass outs with different grades in the VHSE examination. It is clear that a higher percentage of the pass outs with higher grades are pursuing higher studies when compared with pass outs with lower grades. All the pass outs from the B+ category is pursuing higher studies followed by B (79.8%), C+ (78.9%), C (15.4%) in that order. Nobody from the D+ group is doing higher studies. *The result of the chi-square test shows a chi-square value of 108.853 with a p-value of <0.001 at 5% significance level.* Since the p-value is below 0.05, it can be concluded that there is relationship between the pursuance of higher studies by the pass outs and the grades obtained by them in the VHSE examination.

Table: 6.215 Rate of Higher Studies of Pass Outs with Different Grades in the VHSE Examination

Grade		Higher Study Status		Total
		Pursued	Didn't Pursue	
D+	Count	0	13	13
	% within Grades Obtained in VHSE Examination	0.0%	100.0%	100.0%
C	Count	6	33	39
	% within Grades Obtained in the VHSE Examination	15.4%	84.6%	100.0%
C+	Count	101	27	128
	% within Grades Obtained in the VHSE Examination	78.9%	21.1%	100.0%
B	Count	150	38	188
	% within Grades Obtained in the VHSE Examination	79.8%	20.2%	100.0%
B+	Count	28	0	28
	% within Grades Obtained in the VHSE Examination	100.0%	0.0%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.216* shows the rate of higher studies of the pass outs belonging to various Socio-Economic Background (SEB) groups. 68.3% of pass outs from the 'poor' SEB group, 73.5% of pass outs from the 'lower middle' SEB group and 88.9% of the pass outs from the 'upper middle' SEB group have pursued higher studies. The rate of higher studies increases as one move from lower to higher SEB groups. *But the result of the chi-square test shows a chi-square value of 3.924 with a p-value of 1.41 at 5% significance level.* Since the p-value is above 0.05, it can be concluded that there is no relationship between the pursuance of higher studies by the pass outs and their Socio-economic Backgrounds.

Table: 6.216 Rate of Higher Studies of Pass Outs of Different Socio-Economic Background Groups

SEB		Higher Study Status		Total
		Pursued	Didn't Pursue	
Poor	Count	114	53	167
	% within Socio-Economic Status Group	68.3%	31.7%	100.0%
Lower Middle	Count	155	56	211
	% within Socio-Economic Status Group	73.5%	26.5%	100.0%
Upper Middle	Count	16	2	18
	% within Socio-Economic Status Group	88.9%	11.1%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

The *table: 6.217* shows the rate of higher studies by pass outs from schools with different training and support facility statuses. It can be seen that 71.4% of pass outs from schools with 'poor' training and support facility statuses and 72.7% of pass outs from schools with 'average' training and support facility statuses have pursued higher studies. It is clear that there is not much difference in the rate of higher studies of pass outs from schools with different training and support facility statuses. *The result of the chi-square test*

shows a chi-square value of 0.085 with a p-value of 0.771 at 5% significance level. Since the p-value is above 0.05, it can be concluded that there is no significant difference in the rate of higher studies between pass outs from schools with different training and support facility statuses.

Table: 6.217 Rates of Higher Studies of Pass Outs from Schools with Different Training and Support Facility Statuses

Training and Support Facility Status (TSF)		Higher Study Status		Total
		Pursued	Didn't Pursue	
Poor	Count	152	61	213
	% within TSF	71.4%	28.6%	100.0%
Average	Count	133	50	183
	% within TSF	72.7%	27.3%	100.0%
Total	Count	285	111	396
	% within Total	72.0%	28.0%	100.0%

Now the rate of employment among the pass outs with respect to variables like gender, age, type of school, district, location of residence, course, grades in the VHSE examination, socio-economic status and training and support facility statuses of the schools of the pass outs are analysed in the following paragraphs.

The *table: 6.218* shows the rate of employment of male and female pass outs. It can be seen that 24% of male pass outs and 11.3% of female pass outs are employed. It is clear that a higher proportion of male pass outs are employed when compared with female pass outs. The result of the chi-square test shows a *chi-square value of 11.296 with a p-value of 0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there is significant difference in the rate of employment between male and female pass outs.

Table: 6.218 Rate of Employment of Male and Female Pass Outs

Gender		Employment Status		Total
		Employed	Unemployed	
Male	Count	44	139	183
	% within Gender	24.0%	76.0%	100.0%
Female	Count	24	189	213
	% within Gender	11.3%	88.7%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.219* shows the rate of employment of pass outs of different age groups. Differences can be seen in the rate of employment of pass outs of different age groups. 7.3% of pass outs below twenty years of age and 20.3% of pass outs above twenty years are employed. This points to the fact that the rate of employment is lower among recent pass outs. The result of the chi-square test shows a *chi-square value of 11.358 with a p-value of 0.001* at 5% significance level. Since the p-value is below 0.05, it can be concluded that there are significant differences in the rate of employment of pass outs belonging to different age groups.

Table: 6.219 Rate of Employment of Pass Outs of Different Age Groups

Age Group		Employment Status		Total
		Employed	Unemployed	
Below Twenty Years	Count	7	89	96
	% within Age Category	7.3%	92.7%	100.0%
Twenty Years and Above	Count	61	239	300
	% within Age Category	20.3%	79.7%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.220* shows the rate of employment of pass outs from private and government schools. It can be seen that 13.8% of pass outs from private

schools and 18.5% of pass outs from government schools are employed. It is clear that there is not much difference in the rate of employment of pass outs from private and government schools. The rate is slightly higher for private schools. But the result of the chi-square test shows a *chi-square value of 1.230 with a p-value of 0.267* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there is no significant difference in the rate of employment between pass outs from private and government schools.

Table: 6.220 Rate of Employment of Pass Outs from Private and Government Schools

Type of School		Employment Status		Total
		Employed	Unemployed	
Private	Count	15	94	109
	% within Type of School	13.8%	86.2%	100.0%
Government	Count	53	234	287
	% within Type of School	18.5%	81.5%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.221* shows the rate of employment of the pass outs from different districts. There is not much difference in the rate of employment of pass outs from different districts. Kozhikkode has the highest percentage of 22.2% followed by Kollam with 17.3% and Thrissur with 13.2%. The result of the chi-square test shows a *chi-square value of 3.223 with a p-value of 0.300* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of employment of pass outs from different districts.

Table: 6.221 Rate of Employment of Pass Outs from Different Districts

District		Employment Status		Total
		Employed	Unemployed	
Kollam	Count	29	139	168
	% within District	17.3%	82.7%	100.0%
Thrissur	Count	17	112	129
	% within District	13.2%	86.8%	100.0%
Kozhikkode	Count	22	77	99
	% within District	22.2%	77.8%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.222* shows the rate of employment of the pass outs residing in different localities. Some differences are seen in the rate of employment of pass outs from different localities. 5.1% of pass outs from Corporation, 17.8% of pass outs from Panchayath and 31.6% of pass outs from Municipality are employed. Municipality has the highest percentage of pass outs doing employment and Corporation has the lowest percentage. But the result of the chi-square test shows a *chi-square value of 0.545 with a p-value of 0.460* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of employment of pass outs residing in different localities.

Table: 6.222 Rate of Employment of Pass Outs Residing in Different Localities

Locality		Employment Status		Total
		Employed	Unemployed	
Panchayath	Count	60	278	338
	% within Location of Residence	17.8%	82.2%	100.0%
Municipality	Count	6	13	19
	% within Location of Residence	31.6%	68.4%	100.0%
Corporation	Count	2	37	39
	% within Location of Residence	5.1%	94.9%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.223* shows the rate of employment of the pass outs from different courses. Not much difference is seen in the rate of employment of pass outs from different courses. MLT has the highest percentage of pass outs doing employment with 20% followed by MRT with 16.5% and AAG with 13.6%. The result of the chi-square test shows a *chi-square value of 2.099 with a p-value of 0.350* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there are no significant differences in the rate of employment of pass from different courses.

Table: 6.223 Rate of Employment of Pass Outs from Different Courses

Course		Employment Status		Total
		Employed	Unemployed	
Maintenance and Repairs of Radio and Television(MRT)	Count	17	86	103
	% within Course	16.5%	83.5%	100.0%
Medical Laboratory Technician(MLT)	Count	35	140	175
	% within Course	20.0%	80.0%	100.0%
Accounting and Auditing(AAG)	Count	16	102	118
	% within Course	13.6%	86.4%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The *table: 6.224* shows the rate of employment of the pass outs with different grades in the VHSE examination. It is clear that a higher percentage of the pass outs with lower grades are doing employment when compared with pass outs with higher grades. 30.8% the pass outs from the D+ category are doing employment followed by B (20.2%), C+ (15.6%) and C (15.4%) in that order. No body from the B+ group are doing employment.

Table: 6.224 Rate of Employment of Pass Outs with Different Grades in the VHSE Examination

Grade		Employment Status		Total
		Employed	Unemployed	
D+	Count	4	9	13
	% within Grades Obtained in VHSE Examination	30.8%	69.2%	100.0%
C	Count	6	33	39
	% within Grades Obtained in the VHSE Examination	15.4%	84.6%	100.0%
C+	Count	20	108	128
	% within Grades Obtained in the VHSE Examination	15.6%	84.4%	100.0%
B	Count	38	150	188
	% within Grades Obtained in the VHSE Examination	20.2%	79.8%	100.0%
B+	Count	0	28	28
	% within Grades Obtained in the VHSE Examination	0.0%	100.0%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The sample information from the above table (*Table: 6.224*) that the proportion of pass outs employed is greater among pass outs with lower grades in the VHSE examination when compared with those with higher grades is tested below. Accordingly the following hypothesis that there is relationship between the grades of pass outs in the VHSE examination and their rate of employment is tested.

Testing of Hypothesis

H₀: *There is no relationship between the grades of pass outs in the VHSE examination and their rate of employment.*

H₁: *There is relationship between the grades of pass outs in the VHSE examination and their rate of employment.*

The above hypothesis was tested using chi-square test. *The result of the chi-square test shows a chi-square value of 0.397 with a p-value of 0.820 at 5% significance level.* Since the p-value is above 0.05, the null hypothesis that there is no relationship between the grades of pass outs in the VHSE examination and their rate of employment is accepted.

The *table: 6.225* shows the rate of employment of the pass outs belonging to various Socio-Economic Background (SEB) groups. 19.2% of pass outs from the ‘poor’ SEB group, 16.1% of pass outs from the ‘lower middle’ SEB group and 11.1% of the pass outs from the ‘upper middle’ SEB group are employed. The rate of employment decreases as one move from lower to higher SEB groups.

Table: 6.225 Rate of Employment of Pass Outs of Different Socio-economic Background Groups

SEB		Employment Status		Total
		Employed	Unemployed	
Poor	Count	32	135	167
	% within Socio-Economic Status Group	19.2%	80.8%	100.0%
Lower Middle	Count	34	177	211
	% within Socio-Economic Status Group	16.1%	83.9%	100.0%
Upper Middle	Count	2	16	18
	% within Socio-Economic Status Group	11.1%	88.9%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

The sample information from the above table (*table: 6.225*) that a lower proportion of pass outs from higher Socio-Economic Backgrounds are doing employment when compared with those from lower Socio-Economic Backgrounds is tested below. Accordingly the following hypothesis that there is no relationship between the Socio-economic Backgrounds of pass outs and their rate of employment is tested against the alternative hypothesis that there is there is relationship.

Testing of Hypothesis

H₀: There is no relationship between the Socio-economic Backgrounds of pass outs and their rate of employment

H₁: There is relationship between the Socio-economic Backgrounds of pass outs and their rate of employment

The above hypothesis was tested using chi-square test. *The result of the chi-square test shows a chi-square value of 0.487 with a p-value of 0.485 at 5% significance level.* Since the p-value is above 0.05, the null hypothesis that there is no relationship between the Socio-economic Backgrounds of pass outs and their rate of employment is accepted.

The *table: 6.226* shows the rate of employment of pass outs from schools with different training and support facility statuses. It can be seen that 14.8% of pass outs from schools with 'poor' training and support facility statuses and 17.9% of pass outs from schools with 'average' training and support facility statuses are employed. It is clear that there is not much difference in the rate of employment of pass outs from schools with different training and support facility statuses. The result of the chi-square test shows a *chi-square value of 0.458 with a p-value of 0.499* at 5% significance level. Since the p-value is above 0.05, it can be concluded that there is no significant difference in the rate of employment between pass outs from schools with

different training and support facility statuses. This shows that good training and support facility status of schools alone cannot direct VHSE pass outs to the world of employment.

Table: 6.226 Rate of Employment of Pass Outs from Schools with Different Training and Support Facility Statuses

Training and Support Facility Status		Employment Status		Total
		Employed	Unemployed	
Poor	Count	13	75	88
	% within TSF	14.8%	85.2%	100.0%
Average	Count	55	253	308
	% within TSF	17.9%	82.1%	100.0%
Total	Count	68	328	396
	% within Total	17.2%	82.8%	100.0%

But the rate of employment of pass outs in the same area as that of their VHSE trade is higher for pass outs from schools with ‘average’ training and support facilities when compared with those from ‘poor’ training and support facilities (*Table: 6.227*). Only 5.5% of the employed pass outs from schools with ‘poor’ training and support facilities are employed in the same area as against 42% from schools with ‘average’ training and support facilities. This is strong reason for improving the training and support facilities of the schools.

Table: 6.227 Rate of Employment of Pass Outs in the Same Area as that of Their VHSE Trade from Schools with Different Training and Support Facility Statuses

Training and Support Facility Status		Area of Employment		Total
		Employed in the Same Area	Employed in a Different Area	
Poor	Count	1	17	18
	% within TSF	5.5%	94.5%	100.0%
Average	Count	21	29	50
	% within TSF	42.0%	58.0%	100.0%
Total	Count	22	46	68
	% within Total	32.35%	67.65%	100.0%

The above analysis of the rate and nature of higher studies of the pass outs shows that majority of the pass outs are pursuing higher studies and majority of those who pursue higher studies do so in an area different from that of their VHSE trade which is contrary to the objective of the programme.

Gender wise analysis shows that Percentage of pass outs pursuing higher studies in the same area is very low for MRT course when compared with MLT and AAG courses. Another interesting finding is that a higher proportion of pass outs with higher grades in the VHSE examination is pursuing higher studies in the same area when compared with those with lower grades. This shows that higher academic achievements inspire students to stick to the same area for their higher studies.

As far as the courses for higher studies are concerned, majority of the pass outs doing higher studies opt for non-professional degree courses, most of which are in an area different from that of their VHSE trade. Gender wise analysis shows that a higher proportion of female pass outs pursues diploma and professional degree courses when compared with males. The percentage of pass outs doing diploma and professional degree courses is higher for pass outs from MLT courses when compared with those from MRT and AAG courses. A bigger proportion of pass outs with higher Socio-Economic Backgrounds is doing diploma and professional degree courses when compared with those from lower Socio-Economic Backgrounds. This may be due to the higher demand of funds for these courses.

No significant difference is seen in the rate of higher studies by pass outs from different localities and from different courses showing that irrespective of the locality of residence and nature of the course, majority of the pass outs go

for higher studies. Rate of higher studies is higher among females when compared to males, which is not surprising if one looks at the gender wise rate of enrolment of students to higher study courses in Kerala. Year wise analysis shows that the trend towards higher studies is increasing. The rates of higher studies of pass outs show an increasing trend year after year.

The analysis of the rate and nature of employment of the pass outs reveals that the rate of employment among the pass outs is very low. Self employment rate is even lower. The monthly income of those pass outs doing self employment is higher than that of the wage employed pass outs. This should be an element of motivation for more pass outs to do self employment.

When it comes to the area of employment, majority of the employed pass outs from MLT course are employed in the same area as that of their VHSE trade whereas none of the employed pass outs from MRT and AAG courses are employed in the same area. This is an annoying fact and an indicator of the failure of the programme, especially in the case of certain courses, in the state. Further pass outs with better awareness are eager to opt for the same area for employment when compared with those having less awareness. This once again shows the importance of creating awareness among the pass outs.

No significant difference is seen in the rate of employment of pass outs from different localities and from different courses. This is similar to that of higher studies. This may not be because of the fact that there are no differences in the employment opportunities with respect to locality and course but rather because of the fact that, pass outs generally prefer higher studies to employment.

Significant differences are seen in the rate of employment of male and female pass outs. Rate of employment is higher among males, which is also not surprising as it is already seen that the rate of higher studies is higher among females.

6.8 Conclusion

The results of the analysis of the Socio-Economic Backgrounds of the students and pass outs show that majority of the students and pass outs come from 'poor' Socio-Economic Backgrounds. This is in accordance with the general impression that VHSE is pursued mainly by students from poor Socio-Economic Backgrounds. Since the scheme of VHSE mainly targets students from lower Socio-Economic Backgrounds, this is not so discouraging.

The policy makers believe that students from lower Socio-Economic Backgrounds are more likely to enter the world of work immediately after their schooling to help their parents in income generation. The scheme of VHSE is intended to help them these students by equipping them with job related skills. But the study reveals that in the state of Kerala there is no difference in the rate of employment and higher studies of pass outs from different Socio-Economic Backgrounds and majority of the pass outs pursue higher studies irrespective of their Socio-Economic Backgrounds.

Analysis of the awareness shows that majority of the students, pass outs and principals lack proper awareness about VHSE. The low awareness of the students and pass outs is in agreement with the finding of the previous studies. Low awareness of the principals may be little bit surprising and it is due to the fact that High School Head Masters are given the charge of the principals and they do not get much opportunity to get familiar with the different aspects of VHSE. Another reason for this could be the lack proper orientation programmes for principals.

Awareness score is the least for the pass outs. Students have significantly higher awareness when compared with that pass outs. Awareness scores of the students and pass outs are significantly lower than that of the teachers and principals. Teachers have the highest awareness and the awareness score of the teachers is significantly higher than that of the principals. This presents a strong case for giving the charge of the principal to a teacher from the VHSE section. Principals with more experience have better awareness when compared those with less experience. There is urgent need to improve the awareness of the various stake holders of VHSE about the scheme of VHSE.

Analysis of the training and support facilities of the VHS schools in Kerala shows that the Training and Support Facilities in general are inadequate in majority of the schools indicating that no improvements have been made to these facilities in recent times. Different kinds of training and support facilities, viz. infrastructure facility, real life training facility and career guidance and counselling facility are inadequate in majority of the schools. As far as infrastructure facilities are concerned, the major concerns are the poor statuses of some vital facilities such as library, class room and laboratory. Teachers are available in all the schools but they lack any industrial exposure.

Comparative analysis of the training and support facilities of schools from different districts and localities shows no significant differences. Training and support facilities are slightly better in private schools when compared with government schools. This is not very surprising. A lot of funds have been pumped into the school education in government sector in the state in recent times in the form of MP fund, MLA fund and under some special schemes. But these funds do not seem to have benefited the VHSE sector in most of the government schools.

The study shows significant differences in the academic achievements of the pass outs in the VHSE examination from schools with different training and support facility statuses. Higher grades are more among pass outs from schools with better training and support facilities. This strongly supports the urgent need to improve the training and support facilities of the VHS schools.

Significant differences are also seen in the entrepreneurship scores of pass outs from schools with different training and support facility statuses. Entrepreneurship scores are higher for pass outs from schools with 'average' training and support facility when compared with those from schools with 'poor' training and support facility. Further analysis shows significant difference in the entrepreneurship scores of pass outs from schools with different infrastructure facilities and different real life training facilities, the two important dimensions of training and support facility. Entrepreneurship scores are higher for pass outs from schools with better infrastructure and real life training facilities when compared with those from schools where these facilities are lagging behind. Therefore these two facilities are more important for the development of entrepreneurial skills and improving these facilities would have a positive impact on the entrepreneurship development of those who pursue the scheme.

A strong positive correlation is seen between the training and support facility scores of the schools and the mean entrepreneurship scores of the pass outs. A strong positive correlation is also seen between the mean entrepreneurship scores of the pass outs with both the real life training facility scores and infrastructure facility scores of the schools. This once again emphasises the need to take immediate steps to improve the Training and Support Facilities of the VHS schools. This is vital for the survival of the scheme in the state.

Another finding that is little bit surprising is that the training and support facilities do not seem to have any impact on the rate of employment and higher studies of the pass outs. This may be because of the fact that the awareness level of the pass outs is very low with respect to higher studies and employment opportunities. It has been revealed that even in schools with good overall training and support facilities, the career guidance and counselling facilities are poor. This is one facility which can do a lot in creating awareness and direct the students along a perfect career path. Having said that the training and support facilities do seem to have an impact on the area of employment of pass outs with a high proportion of pass outs from schools with 'average' training and support facilities employed in the same area when compare with those from schools with 'poor' the training and support facilities.

The analysis of the academic achievements of the students and pass outs in the qualifying examinations has shown that majority of those pursuing VHSE have only lower grades in the qualifying examination indicating that those with higher grades in the qualifying examination do not prefer VHSE and those who do not get admission to the Plus Two stream seek admission to VHSE. With the number of seats available for plus-two increasing year after year, the number of students with higher grades in the qualifying examination joining VHSE is likely to decrease in the future, indication of which is already there when the grades of the students and pass outs in the qualifying examination are compared. This wouldn't have been so discouraging if the scheme was able to direct majority of its pass outs to the world of employment. That is also not happening. Majority of the students prefer higher studies immediately after VHSE. All these indicate that the efforts to popularise VHSE in the state have not yielded the desired results. There is a need to look back at the efforts of the implementing authorities in this regard.

There are significant differences in the future plans with respect to employment and higher studies of students having different grades in the qualifying examinations. A higher percentage of students with higher grades in the qualifying examination want to pursue higher studies indicating that academic achievements in the qualifying examinations do have an influence on the future course of action of the students. But the problem with VHSE in the state is that majority of those with lower grades in the qualifying are not sure about their future course of action.

The analysis of the academic achievements of the pass outs in the VHSE examination has shown that higher grades are very few among the VHSE pass outs. One of the reasons for this could be the low academic achievements of those who join the VHSE along with the added burden of additional work load. More number of pass outs with higher grades in the VHSE examination pursues higher studies when compared to those with lower grades, which is not unusual. But what is surprising is that even those with lower grades who are not pursuing higher studies are not entering employment.

Analysis of the entrepreneurship profiles of the students and pass outs shows that none of the dimensions of entrepreneurship included in this study secured a 'dominant' position for both students and pass outs. This is a matter of concern. All the dimensions of entrepreneurship showed a 'supportive' response for pass outs. VHSE pass outs from Kerala show good *decision making skills, knowledge ability, emotional stability, use of feedback and integrity and communication* while they are not very good when it comes to *risk taking, persistence and hard work, persuasive ability, managerial ability, innovativeness, personal responsibility, motivation and divergent thinking*. In the case of students, all the dimensions except *managerial ability* showed a 'supportive' response. *Managerial ability* showed a 'least emerging' response

for students. Mean entrepreneurship scores of both students and pass outs are only moderate and not high.

Comparative analysis shows no significant differences in the entrepreneurship scores of male and female students and pass outs. The incidence of low entrepreneurship among females in our state can be attributed to reasons other than lack of entrepreneurship skills.

The analysis of the rate and nature of higher studies of the pass outs shows that majority of the pass outs are pursuing higher studies and majority of those who pursue higher studies do so in an area different from that of their VHSE trade which is contrary to the objective of the programme.

Gender wise analysis shows that Percentage of pass outs pursuing higher studies in the same area is very low for MRT course when compared with MLT and AAG courses. Another interesting finding is that a higher proportion of pass outs with higher grades in the VHSE examination is pursuing higher studies in the same area when compared with those with lower grades. This shows that higher academic achievements inspire students to stick to the same area for their higher studies.

As far as the courses for higher studies are concerned, majority of the pass outs doing higher studies opt for non-professional degree courses, most of which are in an area different from that of their VHSE trade. Gender wise analysis shows that a higher proportion of female pass outs pursues diploma and professional degree courses when compared with males. The percentage of pass outs doing diploma and professional degree courses is higher for pass outs from MLT courses when compared with those from MRT and AAG courses. A bigger proportion of pass outs with higher Socio-Economic Backgrounds is

doing diploma and professional degree courses when compared with those from lower Socio-Economic Backgrounds. This may be due to the higher demand of funds for these courses.

No significant difference is seen in the rate of higher studies by pass outs from different localities and from different courses showing that irrespective of the locality of residence and nature of the course, majority of the pass outs go for higher studies. Rate of higher studies is higher among females when compared to males, which is not surprising if one looks at the gender wise rate of enrolment of students to higher study courses in Kerala. Year wise analysis shows that the trend towards higher studies is increasing. The rates of higher studies of pass outs show an increasing trend year after year.

The analysis of the rate and nature of employment of the pass outs reveals that the rate of employment among the pass outs is very low. Self employment rate is even lower. The monthly income of those pass outs doing self employment is higher than that of the wage employed pass outs. This should be an element of motivation for more pass outs to do self employment.

When it comes to the area of employment, majority of the employed pass outs from MLT course are employed in the same area as that of their VHSE trade whereas none of the employed pass outs from MRT and AAG courses are employed in the same area. This is an annoying fact and an indicator of the failure of the programme, especially in the case of certain courses, in the state. Further pass outs with better awareness are eager to opt for the same area for employment when compared with those having less awareness. This once again shows the importance of creating awareness among the pass outs.

No significant difference is seen in the rate of employment of pass outs from different localities and from different courses. This is similar to that of higher studies. This may not be because of the fact that there are no differences in the employment opportunities with respect to locality and course but rather because of the fact that, pass outs generally prefer higher studies to employment.

Significant differences are seen in the rate of employment of male and female pass outs. Rate of employment is higher among males, which is also not surprising as it is already seen that the rate of higher studies is higher among females.

Another aspect that has been mentioned in the beginning of this discussion needs to be stated once again here. Contrary to the expectations, low academic achievement and low socio-economic backgrounds do not force VHSE pass outs to enter some sort of employment straight after VHSE. Lower grades do prevent pass outs from pursuing higher studies but in such cases they either pursue some other studies of lower status or remain unemployed. Further poor socio-economic backgrounds do not prevent them from pursuing higher studies.

The above analyses have revealed the statuses of the VHSE students and pass outs of Kerala with respect to their SEB, awareness about VHSE, entrepreneurship profiles and academic achievements and have brought to light the areas of concern requiring immediate attention of the authorities. Awareness of teachers and principals about VHSE has also been studied. The study has also given a picture of the training and support facility statuses of the VHS schools and brought out the deficiencies. The study on the rate and nature of employment and higher studies among the pass outs has shown the success/failure of the scheme in Kerala with respect to its ability to direct its pursuers to the world of work.

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7.1 Introduction

In this chapter, the findings of the study are summarised along with the recommendations arrived at based on these findings. The findings provide a clear picture of the present status of the various aspects of the vocational higher secondary education in Kerala. The recommendations are expected to be useful to the policy makers, implementing authorities and management of the Vocational Higher Secondary Education in taking steps to improve the scheme in Kerala.

7.2 Findings

The findings of the study given below are based on the analysis of the data collected for the study. The findings have been categorised under different headings in accordance with the objectives of the study.

7.2.1 Socio-Economic Backgrounds (SEB) of Students and Pass Outs

- Socioeconomic backgrounds of majority of the students and pass outs are low.

- Socio-Economic Backgrounds of pass outs are slightly better than that of the students.
- None of the students or pass outs belongs to the high SEB categories.
- No significant differences are seen in the SEB of students from private and government schools, from different districts and from different localities.
- Significant differences are seen in the SEB of male and female students. Male students have better SEB when compared with females.
- There is no significant difference in the future plans of students with respect to employment and higher studies from different Socio-Economic Backgrounds.
- No significant differences are seen in the SEB of pass outs from private and government schools and from different districts.
- Significant differences are seen in the SEB of pass outs from different localities.
- Significant differences are seen in the SEB of male and female pass outs. Female pass outs have better SEB when compared with males.

7.2.2 Awareness of Students, Pass Outs, Teachers and Principals Regarding VHSE

- Majority of the students, pass outs, and principals lack proper awareness about VHSE.
- Majority of the students, pass outs and principals are not aware about the goals and objectives of VHSE, terminal option, apprenticeship training, school industry linkage, higher study and employment options

and the availability of self employment guidance and assistances for VHSE pass outs.

- Majority of the teachers are aware about the goals and objectives of VHSE, terminal option, school industry linkage, and higher study and employment options but not about apprenticeship training and availability of self employment assistances and guidance for VHSE pass outs.
- No significant differences are seen in the awareness of students from private and government schools, from different localities, from different courses and from different Socio-Economic Backgrounds.
- Significant differences are there in the awareness of male and female students and those from different districts.
- Male students have better awareness when compared with female students.
- No significant differences are seen in the awareness of male and female pass outs, pass outs from private and government schools, from different districts, from different localities and from different courses.
- Significant differences are seen in the awareness of pass outs from different Socio-Economic backgrounds.
- No significant differences are seen in the awareness of male and female teachers, teachers from private and government schools, from different districts, and from different localities and those with different years of teaching experiences. Teachers with more than ten years teaching experience show better awareness than those with lesser teaching experience but not statistically significant.
- No significant differences are seen in the awareness of male and female principals, principals from private and government schools, from

different districts and from different localities. But significant differences are there among principals with different years of experiences. Principals with more experience have better awareness when compared those with less experience.

7.2.3 Training and Support Facilities of the VHS schools in Kerala

- ‘Training and Support Facilities’ in general are inadequate in majority of the schools.
- ‘Infrastructure Facilities’ are below average in majority the schools
- Very few schools have ‘good’ Real Life Training facilities.
- There are virtually no ‘Career Guidance and Counselling Services’ in majority of the schools
- ‘Quality and Availability of Training Personnel’ is better when compared with other training facilities with majority of the schools having ‘average’ or higher statuses.
- Comparative analysis of the training and support facilities of schools from different districts shows no significant differences.
- Significant differences are seen in the training and support facilities of private and government schools and schools from different localities. Training and support facilities are slightly better in private schools when compared with government schools.
- Locality wise comparison shows that the training and support facilities are little bit lower in Corporation areas when compared with Panchayath and Municipal areas.

- Training personnel status is better in private schools when compared with government schools.

7.2.4 Academic Achievements of Students and Pass Outs

- Majority of the VHSE students have only 'C+' grade or below in the qualifying examination.
- Significant differences are seen in academic achievements of male and female students, students from private and government schools, from different districts, different localities, different courses and from different socioeconomic backgrounds.
- There are significant differences in the future plans of students with respect to employment and higher studies having different grades in the qualifying examination.
- Only a small proportion of the pass outs has 'B+' or higher grades in the VHSE examination.
- No significant differences are seen in the academic achievements in the VHSE examination by pass outs from private and government schools, from different districts and from different localities.
- Significant differences are seen in the academic achievements in the VHSE examination of male and female pass outs, pass outs from different courses, from different socioeconomic backgrounds and from schools with different training and support facility statuses.
- Students from schools with 'average' training and support facilities have higher grades in the VHSE examination when compared with those from schools with 'poor' training and support facilities.

7.2.5 Entrepreneurship Profiles of Students and Pass Outs

- None of the dimensions of entrepreneurship included in this study secured a 'dominant' position for both students and pass outs.
- All the dimensions of entrepreneurship except managerial ability of showed a 'supportive' response for students and for pass outs all the dimensions of showed a 'supportive' response.
- Mean entrepreneurship scores of students and pass outs are moderate.
- A strong positive correlation is seen between the mean entrepreneurship scores of pass outs and the training and support facility scores of the schools.
- No significant differences are seen in the entrepreneurship scores of male and female students, students from schools with different training and support facility statuses, from different socioeconomic backgrounds, from different courses and students with different grades in the qualifying examination.
- No significant differences are seen in the entrepreneurship scores of male and female pass outs, pass outs from different courses, from schools with different career guidance and counselling facilities and from schools with different training personnel status.
- Significant differences are seen in the entrepreneurship scores of pass outs from schools with different infrastructure facilities, different real life training facilities, different socioeconomic backgrounds, from different age groups and pass outs with different grades in the VHSE examination.
- Entrepreneurship scores are higher for pass outs from schools with better infrastructure and real life training facilities.

- A strong positive correlation is also seen between the mean entrepreneurship scores of the pass outs and both the real life training facility scores and infrastructure facility scores of the schools.
- Entrepreneurship score increases as one moves from lower socioeconomic background category to higher socioeconomic background category.
- Pass outs from higher age groups show higher entrepreneurship scores when compared with those from lower age groups.
- There mean entrepreneurship dimension scores of the pass outs for entrepreneurship dimensions like *risk taking, persistence and hard work, use of feedback, knowledge ability, managerial ability, innovativeness, emotional stability, motivation, decision making and divergent thinking* are higher for pass outs from schools with ‘average’ training and support facility status when compared with those from schools with ‘poor’ training and support facility status.
- No significant differences are seen in the mean dimension scores of pass outs for *personal responsibility, persuasive ability and integrity and communication* from schools with ‘poor’ and ‘average’ training and support facility statuses.

7.2.6 Nature and Rate of Employment and Higher Studies among the VHSE Pass Outs in Kerala

- Majority of the VHSE pass outs (72%) go for higher studies which is significantly higher than that of the national average of 38%.
- The rate of higher studies has shown an increasing trend from 2004 to 2008.

- Majority of the pass outs doing higher studies are doing so in an area different from that of their VHSE trade.
- A higher proportion of female pass outs is doing higher studies in the same area when compared with male pass outs.
- Percentage of pass outs pursuing higher studies in the same area is very low for MRT course.
- A higher proportion of pass outs with higher grades in the VHSE examination is pursuing higher studies in the same area when compared with those with lower grades.
- Majority of the pass outs doing higher studies opt for non-professional degree courses, most of which are in an area different from that of their VHSE trade, for their higher studies.
- A higher proportion of female pass outs pursues diploma and professional degree courses when compared with males.
- A higher proportion of MLT pass outs pursue diploma and professional degree courses for their higher studies when compared with pass outs of MRT and AAG courses.
- A bigger percentage of pass outs with higher Socio-Economic Backgrounds is doing diploma and professional degree courses when compared with those from lower Socio-Economic Backgrounds.
- No significant differences are seen in the rate of higher studies of pass outs from private and government schools, from different districts, from different localities, from different courses, from different socioeconomic backgrounds and from schools with different training and support facility statuses.

- Significant differences are seen in the rate of higher studies of male and female pass outs, pass outs from different age groups and pass outs with different grades in the VHSE examination.
- Higher percentage of female pass outs has pursued higher studies when compared with males.
- Higher percentage of pass outs belonging to lower age groups has pursued higher studies when compared with those belonging to higher age groups.
- Higher percentage of pass outs with higher grades in the VHSE examination has pursued higher studies when compared with those having lower grades.
- The rate of employment among the pass outs is only 17.2% which is significantly lower than that of the national average of 28%.
- Majority of those employed are in the private sector.
- Only 3% of the pass outs are self employed.
- Majority of the employed pass outs are employed in an area different from that of their VHSE trade.
- A higher proportion of female pass outs is doing employment in the same area when compared with male pass outs.
- None of the employed pass outs from MRT and AAG courses are employed in the same area.
- Pass outs with better awareness are eager to opt for the same area for employment when compared with those having less awareness.
- Only 1.3% of the pass outs entered employment immediately after VHSE.

- The average monthly income of the self employed pass outs is higher than that of the wage employed pass outs.
- There is no relationship between the grades of pass outs in the VHSE examination and their rate of employment.
- There is no relationship between the socioeconomic backgrounds of pass outs and their rate of employment.
- No significant differences are seen in the rate of employment of pass outs from private and government schools, from different districts, from different localities, from different courses, and from schools with different training and support facility statuses.
- A higher percentage of pass outs from schools with ‘average’ training and support facility statuses is employed in the same area as that of their VHSE trade when compared with those from ‘poor’ training and support facility statuses.
- Significant differences are seen in the rate of employment of male and female pass outs and those from different age groups.
- Higher percentage of male pass outs is employed when compared with females.
- Higher percentage of pass outs belonging to higher age groups is doing employment when compared with those belonging to lower age groups.

7.3 Recommendations

The following recommendations are made in view of the above described findings.

- Immediate measures should be taken by the VHSE department to create proper awareness about VHSE among the students, pass outs, teachers, and principals.
- Admission criteria should be revised and students with right aptitude and those who want to enter employment straight after VHSE should be given admission to the different VHSE courses.
- Students should be encouraged to pursue VHSE as a terminal course.
- Age limit for admission to VHSE should be abolished.
- Curricula of all the courses should be updated once in every three years.
- Irrelevant courses should be dropped and new courses should be started.
- Immediate steps should be taken to improve the infrastructure facilities of the schools, especially laboratory and library facilities.
- At least six months apprenticeship training should be made part of the course curriculum.
- More apprenticeship training centres should be identified and some incentives in the form of tax benefits could be given to private firms to provide apprenticeship training to VHSE pass outs.
- Centralized training centres for different trades for conducting OJT should be started in each district.
- VHSE department should take initiatives in establishing school industry linkages.
- Production cum Training Centres (PTC) should be started in all the schools in collaboration with industries or firms.

- Funds should be allocated for field visit of students.
- Permanent teachers should be appointed in government schools and preference should be given to those with teaching and industry experience.
- In-service training should be provided to all the teachers focusing on the latest developments in the concerned fields.
- Career Guidance and Counselling Cells and Placement Cells should be started in each school and teachers should be given training in Career Guidance and Counselling.
- Career Fests/Campus Interviews should be conducted with the co-operation of the Placement Cell and various industries in each school.
- A comprehensive data base of the VHSE pass outs should be maintained in each school and proper follow up actions should be taken to track the career developments of VHSE pass outs.
- Alumni Associations should be formed in each school and such associations should take active role in the career development of the VHSE pass outs.
- Separate Administrative Head should be appointed for the VHSE section in each school.
- Use of latest developments in communication and information technology should be utilized for the effective delivery of the course contents.
- Each school should be converted into a skill development centre.

- Reservations should be given to VHSE pass outs for jobs in the government sector.
- All courses should be approved by the Kerala PSC.
- Training in VHS schools should focus more on entrepreneurship development.
- Special schemes should be formulated for providing financial assistance to VHSE pass outs for starting self employment.
- Guidelines for starting self-employment should be included in the syllabus.
- Centres for providing guidance and assistance to VHSE pass outs for starting self employment should be started in each district.
- Private sector employers should be encouraged to absorb VHSE pass outs and Memorandum of Understanding (MOU) should be signed with reputed firms for this purpose.
- More reservation should be provided to VHSE pass outs for higher studies in concerned trades.
- Opportunities should be created for VHSE pass outs to pursue higher studies on a part time basis.
- More articulation arrangements should be made for higher studies.
- New certification and qualification system should be established with a national perspective for giving more credibility to the course.
- A comprehensive vocational survey should be conducted before starting new vocational courses to assess the man power requirement in the

concerned sector, demand for the vocational course, employment opportunities, local needs and, locally available resources.

7.4 Scope for Further Studies

The study can be extended by including the parents of the students and pass outs of the vocational higher secondary schools in Kerala and also the employers and potential employers of the VHSE pass outs in Kerala. Employability aspect of the VHSE pass outs in terms of their vocational competency in the concerned trades can also be studied. Another aspect that can be studied is the area wise and trade wise availability of wage and self employment opportunities for VHSE pass outs. Experimental studies can be conducted to analyse the impact of different training strategies of VHSE on the entrepreneurship development of its students.

7.5 Conclusion

The study has been able to provide a clear picture of the profiles of the students and pass outs of the Vocational Higher Secondary Education in Kerala with respect to their socioeconomic backgrounds, entrepreneurship profiles, awareness about the VHSE and academic achievements. Awareness of teachers and principals about the scheme has also been studied. The study brought to light the statuses of the training and support facilities of the VHS schools in Kerala and identified some deficiencies in this regard. The study has also been able to provide a fair idea about the nature and rate of higher studies and employment among the VHSE pass outs of Kerala.

The study identified quite a few areas of concern for the scheme of Vocational Higher Secondary Education in Kerala with respect to awareness among stakeholders, training and support facilities, employment and higher studies among pass outs and entrepreneurship development. The findings of this

study are expected to be useful to the management and policy makers of the VHSE in the State in taking measures to improve the scheme. The researcher has made some recommendations that, if implemented, could help in solving some of the problems faced by the scheme in Kerala to a certain extent.



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268. *Idem.*, reference No.26.
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APPENDIX I

QUESTIONNAIRE TO SURVEY STUDENTS (QSS)

Dear Sir/Madam

Kindly go through the instructions and questions carefully and respond accordingly. This survey is part of the data collection for a research conducted on the Vocational Higher Secondary Education in Kerala. The researcher here by assure the strict confidentiality of the data collected and promise you that the data will not be used for any other purpose.

1. Your Name :
2. Age :
3. Sex :
4. Home Address :
5. Phone Number :
6. E-mail ID :
7. Location of Residence : Panchayath Municipality Corporation
8. Name of Your School :
9. Your Course of Study :
10. Socioeconomic Background of the Respondent. There are 22 questions to be answered as part of this. Check the 'BOX' against the option of your choice using '√' mark.

Q1. Monthly per capita income from all sources (total monthly income /no. of family members)

1. > 50000
2. 20000-49999
3. 10000-19999
4. 5000-9999
5. 2500-4999
6. 1000-2499
7. < 1000

Q 2. Education of either husband or wife who is more educated among them

1. Professional qualification with technical degrees or diplomas e.g. Doctor, Eng. CA, MBA, etc.
2. Post-graduation (non-technical incl. Ph.D.)

- 3. Graduation
- 4. 10th class pass but < Graduation
- 5. Primary pass but < 10th
- 6. < Primary but attended school for at least one year
- 7. Just literate but no schooling
- 8. Illiterate

Q 3. Occupation of husband, otherwise wife.

- 1. Service in central/State/Public undertakings or Owner of a company employing > 20 persons or self employed professional viz. Doctors, CAs, Eng. Etc.
- 2. Service in Private sector or independent business employing 2-20 persons
- 3. Service at shops, home, transport, own cultivation of land
- 4. Self employed e.g. shops, Rehdies or petty business with income > 5000
- 5. Self employed with income < 5000 (labourer, house wife)
- 6. None of the family member is employed

Q 4. Family possessions (presence of each item given below will carry score of 1)

- 1. Refrigerator
- 2. TV
- 3. Radio/Transistor/Music system
- 4. AC
- 5. Washing Machine
- 6. Telephone
- 7. Mobile
- 8. Credit card
- 9. Sanitary lat.
- 10. Any newspaper subscribed throughout the month

Q 5 . Living in a type of house

1. Own house with 5 or more rooms
2. Own house with 3-4 rooms
3. Rented/Govt. house with 5 or more rooms
4. Own house with 1-2 rooms
5. Rented/Govt. house with 3-4 rooms
6. Rented/Govt. house with 1-2 rooms
7. Own jhuggi
8. Rented jhuggi
9. No place to live, pavement, mobile cart

Q 6. Possession of a vehicle or equivalent

1. 2 or more cars/Tractors/Trucks
2. 1 Car /Tractor/Truck
3. 1 or more scooter(s)/Bullock cart (s)
4. 1 or more cycles (not baby cycle)
5. None of the above

Q.7 No. of earning members in the family (Nuclear/Joint)

1. 3 or more members earning and income pooled
2. 2 or both husband and wife earning
3. Only 1 family member earning
4. No earning member

Q 8. No. of children head of the family has/had

1. 0-1
2. 2
3. 3
4. 4
5. 5
6. > 6

Q 9. Facility of some essentials in the family

1. Both tap water supply and electricity
2. Only one of above two is present
3. None is present

Q10. Education of children (in relation to head of the family)

Note: Exclude children under 5 years for this item. A child applicable here is one who is 5 yrs or above.

1. All children going/ever gone to school/college
2. > 50% children ever gone/going to school/college
3. < 50% children ever gone/going to school/college
4. No child ever gone/going to school/college

Q 11. Employment of a domestic servant at home

1. Employed > 2 full time servants on salary for domestic work
2. Employed only 1 full time servant on salary for domestic work
3. Employed > 3 part time servants on salary for domestic work
4. Employed 1-2 part time servants on salary for domestic work
5. Employed no servants for domestic work

Q 12. Type of locality the family is residing

1. Living in urban locality
2. Living in rural locality
3. Living in resettlement colony
4. Living in slums / jhuggis
5. No fixed living and mobile

Q 13. Caste of the family.

1. Upper caste
2. OBC
3. Dalits
4. Tribals

Q. 14. Members of family gone abroad in last three years (official or personal)

1. Whole family
2. Only husband and wife
3. Only 1 family member

-
4. None
- Q 15. Possession of agricultural land for cultivation
1. Own agricultural land > 100 acres
2. Own agricultural land 51-100 acres
3. Own agricultural land 21-50 acres
4. Own agricultural land 6-20 acres
5. Own agricultural land 1-5 acres
6. No agricultural land
- Q 16. Possession of non-agricultural land/land for housing or other type of land
1. Own non-agricultural land/land for housing > 1000 Sq Yards
2. Own non-agricultural land/land for housing 501-1000 Sq. Yards
3. Own non-agricultural land/land for housing 25-500 Sq. Yards
4. Own non-agricultural land/land for housing < 25 Sq. Yards –OR Does not own non-agricultural land/land for housing at all
- Q 17. Presence of milking cattle in the family for business or non-business purposes
1. Own 4 or more milking cattle
2. Own 1-3 milking cattle
3. Own 1 milking cattle
4. Does not own any milking cattle
- Q 18. Presence of non milking cattle or pet animals in the family
1. Own 2 or more
2. Own 1
- Q 19. Besides the house in which the family is living, the family owns other house or shop or shed etc. of any size whether given on rent or not
1. Owns 3 or more
2. Owns 2 or more
3. Owns 1
4. Does not own any

Q 20. Positions held (besides the positions as employee) by any one member in the family

1. Holding position of 3 or more official or non-official organizations viz. president/chairman/Secretary Treasurer etc.
2. Holding position of 1-2 official or not-official organizations viz. president/chairman/Secretary/Treasurer etc.
3. Holding position as member only of executive or other committees of official or non-official organizations.
4. Does not hold any such position

Q 21. Parental support in the form of non-movable property

1. > 50 acres of agricultural land -OR -a house/plot > 1000 sq yards -OR - Both 4
2. 21-50 acres of agricultural land -OR-a house/plot 501- 1000 sq yards -OR - Both 3
3. 1-20 acres of agricultural land -OR -a house /plot 100-500 sq yards -OR-Both 2
4. No agricultural land -BUT - a house/plot 25-100 sq yards 1
5. No parental property 0

Q22. Total amount of income tax paid by the family (include all the earning members IT)

1. 10 lacs
2. 1-10 lacs
3. > 50000 but < 1 lac
4. > 20000 - < 50000
5. > 10000- < 20000
6. > 5000- < 10000
7. < 5000
8. Nil

11. Overall Grade / Total Marks / Percentage of Marks obtained in the qualifying examination (SSLC / equivalent) :

12. Intended course of action (future plan) immediately after VHSE

- Higher Study Wage Employment Self Employment
Foreign Employment Others

13. Do you consider VHSE merely as transition stage to higher studies just like plus-two?

Yes No

14. Do you consider VHSE as a course having more employment opportunities when compared to plus- two or similar courses? Yes No

15. Awareness of the Respondent about VHSE. There are 8 questions to be answered as part of this. Check the 'YES' box using '√' mark if you are aware about the following aspects of VHSE and check the 'NO' box using '√' mark if you are not aware.

	YES	NO
1. Goals and Objectives of VHSE	<input type="checkbox"/>	<input type="checkbox"/>
2. Availability of Terminal Option to VHSE students	<input type="checkbox"/>	<input type="checkbox"/>
3. Apprenticeship Training as a post-VHSE training strategy	<input type="checkbox"/>	<input type="checkbox"/>
4. Institutions Providing Apprenticeship Training	<input type="checkbox"/>	<input type="checkbox"/>
5. School-Industry Linkage	<input type="checkbox"/>	<input type="checkbox"/>
6. Higher Study Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
7. Employment Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
8. Self Employment Guidance for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>

16. Are you willing to undergo apprenticeship training after completing VHSE?

Yes No

17. Would you have pursued VHSE as terminal course (part I and II only) without higher study options if you were aware about the terminal option? Yes No

18. Entrepreneurship Profile of the Respondent. There are 52 questions to be answered as part of this. Check the 'BOX' against the option of your choice using '√' mark.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. I believe that I can learn from errors and that it should be reflected in my behaviour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I keep an eye on the implementation of plans and remove the blockages.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I contribute in building up the image of my area/whole organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I do not give up even in the face of difficulty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I do not see the importance of reading newspaper every day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I do not get upset when I receive negative feedback for my performances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. When I am dealing with a problem, I tend to get stuck easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I like to take challenges in assignment and ensure their successful completion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I find it difficult to come up with new ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am action oriented and always meet the expected results of my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Mistakes and failures make me so depressed that I cannot learn from them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I am comfortable in tackling difficulties though my ingenuity and problem solving abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I do not get excited with the favourable results if these are not due to my own effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. During my free time (leisure period), I like discussing rumours among my friend.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I try to maintain open communication channels with everyone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

-
16. I do not find difficulty in convincing people around me to trust my capability to succeed.
17. I do not allow failures to discourage me.
18. When faced with a sudden change in plan of action. I am able to think about alternatives and decide on a new situation.
19. I believe that every challenge has an opportunity hidden in that.
20. I do not enjoy working in a team as a leader. Rather I like to be the member of the team.
21. I generally 'shoot down' the ideas of others.
22. I take a lot of initiative and I am always ready for collaborations.
23. The business I am thinking of is not really unusual.
24. It is not necessary to be scientific and rational about management technique as long as one has a will to do it.
25. I am not willing to work for more than eight hours a day.
26. I emphasize regular evaluation, measurement and review of performance.
27. My parents/friends/people around me doubt my capability to start and successfully handle the business.
28. I think new ideas lead to disagreement discussions and frictions
29. Setting a personal example of integrity and conscientiousness is not needed.
30. I am able to lead a group only when people are willing to follow me.
31. I would like to take risk in business if the chances of success lie between 30% - 40%.
32. I need not waste time and money on market research. If the product sells I will go on producing.
33. I find it difficult to perceive a need (foresee a problem) unless someone points it out.
34. I do not believe in conveying appreciations and complements.
35. I shall attempt to become an expert in the product I am selling.
36. I enjoy those activities where I get information on how good or how bad I am doing.

37. I don't want to start a business in an area in which another person was unsuccessful.
38. Thoughts about unexpected setbacks will not prevent me from starting a business.
39. I don't want to continue with a business that does not yield immediate results.
40. I think that feed backs usually lead to misunderstanding.
41. I don't like handing over my responsibilities to others.
42. I believe that the responsibility of mistakes committed by the team members falls on them only.
43. I think that the theoretical know how of an experiment is as important as the practical knowledge.
44. I am able to get the participation of the people around me in my new ventures.
45. I don't think that I am able to pursue a person to do something.
46. I can be a role model for my team members under all kinds of adverse circumstances.
47. I am not interested in following ideas conceived and successfully implemented by the others.
48. I think that pointing out mistakes will adversely affect personal relationships.
49. Becoming a business person is not my life ambition.
50. My nature is to arrive at decision immediately in any matter.
51. Business should always go ahead without taking into consideration the developments in the market.
52. I don't think that changing the business will affect the reputation of the firm.

Thank you very much for your cooperation.

Anilkumar R.

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Appendix II

QUESTIONNAIRE TO SURVEY PASS OUTS (QSP)

Dear Sir/Madam

Kindly go through the instructions and questions carefully and respond accordingly. This survey is part of the data collection for a research conducted on the Vocational Higher Secondary Education in Kerala. The researcher here by assure the strict confidentiality of the data collected and promise you that the data will not be used for any other purpose.

1. Your Name :
2. Age :
3. Sex :
4. Home Address :
5. Phone Number :
6. E-mail ID :
7. Location of Residence : Panchayath Municipality Corporation
8. Name of Your School :
9. Your Course of Study :
10. Socioeconomic Background of the Respondent. There are 22 questions to be answered as part of this. Check the 'BOX' against the option of your choice using '✓' mark.

Q 1. Monthly per capita income from all sources (total monthly income /no. of family members)

1. > 50000
2. 20000-49999
3. 10000-19999
4. 5000-9999
5. 2500-4999
6. 1000-2499
7. < 1000

Q 2. Education of either husband or wife who is more educated among them

1. Professional qualification with technical degrees or diplomas e.g. Doctor, Eng. CA, MBA, etc.
2. Post-graduation (non-technical incl. Ph.D.)
3. Graduation
4. 10th class pass but < Graduation
5. Primary pass but < 10th
6. < Primary but attended school for at least one year
7. Just literate but no schooling
8. Illiterate

Q 3. Occupation of husband, otherwise wife.

1. Service in central/State/Public undertakings or Owner of a company employing > 20 persons or self employed professional viz Doctors, CAs, Eng. Etc.
2. Service in Private sector or independent business employing 2-20 persons
3. Service at shops, home, transport, own cultivation of land
4. Self employed e.g. shops, Rehdies or petty business with income > 5000
5. Self employed with income < 5000 (labourer, house wife)
6. None of the family member is employed

Q 4. Family possessions (presence of each item given below will carry score of 1)

1. Refrigerator
2. TV
3. Radio/Transistor/Music system
4. AC
5. Washing Machine
6. Telephone
7. Mobile
8. Credit card

-
9. Sanitary latrine
10. Any newspaper subscribed throughout the month
- Q 5 . Living in a type of house
1. Own house with 5 or more rooms
2. Own house with 3-4 rooms
3. Rented/Govt. house with 5 or more rooms
4. Own house with 1-2 rooms
5. Rented/Govt. house with 3-4 rooms
6. Rented/Govt. house with 1-2 rooms
7. Own jhuggi
8. Rented jhuggi
9. No place to live, pavement, mobile cart
- Q 6. Possession of a vehicle or equivalent
1. 2 or more cars/Tractors/Trucks
2. 1 Car /Tractor/Truck
3. 1 or more scooter(s)/Bullock cart (s)
4. 1 or more cycles (not baby cycle)
5. None of the above
- Q. 7 No. of earning members in the family (Nuclear/Joint)
1. 3 or more members earning and income pooled
2. 2 or both husband and wife earning
3. Only 1 family member earning
4. No earning member
- Q 8. No. of children head of the family has/had
1. 0-1
2. 2
3. 3
4. 4
5. 5

6. > 6

Q 9. Facility of some essentials in the family

- 1. Both tap water supply and electricity
- 2. Only one of above two is present
- 3. None is present

Q10. Education of children (in relation to head of the family)

Note : Exclude children under 5 years for this item. A child applicable here is one who is 5 yrs or above.

- 1. All children going/ever gone to school/college
- 2. > 50% children ever gone/going to school/college
- 3. < 50% children ever gone/going to school/college
- 4. No child ever gone/going to school/college

Q 11. Employment of a domestic servant at home

- 1. Employed > 2 full time servants on salary for domestic work
- 2. Employed only 1 full time servant on salary for domestic work
- 3. Employed > 3 part time servants on salary for domestic work
- 4. Employed 1-2 part time servants on salary for domestic work
- 5. Employed no servants for domestic work

Q 12. Type of locality the family is residing

- 1. Living in urban locality
- 2. Living in rural locality
- 3. Living in resettlement colony
- 4. Living in slums / jhuggis
- 5. No fixed living and mobile

Q 13. Caste of the family

- 1. Upper caste
- 2. OBC

3. Dalits (SC/ST)
4. Tribals
- Q.14. Members of family gone abroad in last three years (official or personal)
1. Whole family
2. Only husband and wife
3. Only 1 family member
4. None
- Q 15. Possession of agricultural land for cultivation
1. Own agricultural land > 100 acres
2. Own agricultural land 51-100 acres
3. Own agricultural land 21-50 acres
4. Own agricultural land 6-20 acres
5. Own agricultural land 1-5 acres
6. No agricultural land
- Q 16. Possession of non-agricultural land/land for housing or other type of land
1. Own non-agricultural land/land for housing > 1000 Sq Yards
2. Own non-agricultural land/land for housing 501-1000 Sq. Yards
3. Own non-agricultural land/land for housing 25-500 Sq. Yards
4. Own non-agricultural land/land for housing < 25 Sq. Yards –OR Does not own non-agricultural land/land for housing at all
- Q 17. Presence of milking cattle in the family for business or non-business purposes
1. Own 4 or more milking cattle
2. Own 1-3 milking cattle
3. Own 1 milking cattle
4. Does not own any milking cattle
- Q 18. Presence of non milking cattle or pet animals in the family
1. Own 2 or more
2. Own 1
- Q 19. Besides the house in which the family is living, the family owns other house or shop or shed etc. of any size whether given on rent or not

1. Owns 3 or more
2. Owns 2 or more
3. Owns 1
4. Does not own any

Q 20. Positions held (besides the positions as employee) by any one member in the family

1. Holding position of 3 or more official or non-official organizations viz. president/chairman/Secretary Treasurer etc.
2. Holding position of 1-2 official or not-official organizations viz. president/chairman/Secretary/Treasurer etc.
3. Holding position as member only of executive or other committees of official or non-official organizations.
4. Does not hold any such position

Q 21. Parental support in the form of non-movable property

1. > 50 acres of agricultural land -OR -a house/plot > 1000 sq yards -OR -Both 4
2. 21-50 acres of agricultural land -OR-a house/plot 501-1000 sq yards -OR - Both 3
3. 1-20 acres of agricultural land -OR -a house /plot 100-500 sq yards -OR-Both 2
4. No agricultural land -BUT - a house/plot 25-100 sq yards 1
5. No parental property 0

Q22. Total amount of income tax paid by the family (include all the earning members IT)

1. 10 lacs
2. 1-10 lacs
3. > 50000 but < 1 lac
4. > 20000 - < 50000
5. > 10000- < 20000
6. > 5000- < 10000
7. < 5000
8. Nil

11. Overall Grade / Total Marks / Percentage of Marks obtained in the qualifying examination (SSLC / equivalent) :

12. Overall Grade / Total Marks / Percentage of Marks obtained in the VHSE examination :

13. Your current engagement

Studying Wage Employment Self Employment

Foreign Employment Unemployed and not studying Others

14. If you are studying, what are the motivating factors?

Higher Status

Better Employment

Compulsion by Others

Didn't Get a Job

Others (Specify)

15. If you are studying, mention the course of the study and subject?

16. If you are studying, is it in the same area as that of your VHSE trade?

Yes No

17. If you are studying in a different area than that of your VHSE trade, what are the reasons?

Didn't Get Admission

Not Available

Not Interested

Bleak Job Prospects

Others (Specify)

18. If you are studying, mention whether is it higher studies or some other studies?

Higher Studies Some other Studies

19. If you are not doing higher studies, what are the reasons?

Didn't Get Admission

Not Available

Not Interested

Bleak Job Prospects

Financial Difficulty

Others (Specify)

20. If you are not studying, what are the reasons?

Financial Problems

Employed

Not Interested

Not Available for the Same Trade

Others (Specify)

21.If you are employed, is it in the same area as that of your VHSE trade?

Yes No

22.If you are employed in a different area than that of your VHSE trade, what are the reasons?

Lack of Opportunities

Poor Remuneration

Lack of Interest in the Trade

Lack of Necessary Skills

Others (Specify)

23.If you are wage employed, mention your designation and monthly income?

24.If you are self employed mention your monthly income?

25.If you are not self employed, what are the reasons?

Financial Difficulties

Lack of Opportunities

Prefer Wage Employment

Lack of Lack of Necessary Skills

Others (Specify)

26.What is the sector of your employment?

Government

Semi-government

Private

27.If you are not employed, what are the reasons?

Wanted to Pursue Higher Studies

Didn't get a job

Resistance from the Family

Not Interested in Job

Others (Specify)

28.Do you consider VHSE merely as transition stage to higher studies just like plus-two?

Yes No

29. Do you consider VHSE as a course having more employment opportunities when compared to plus- two or similar courses? Yes No

30. Awareness of the Respondent about VHSE. There are 8 questions to be answered as part of this. Check the 'YES' box using '√' mark if you are aware about the following aspects of VHSE and check the 'NO' box using '√' mark if you are not aware.

	YES	NO
1. Goals and Objectives of VHSE	<input type="checkbox"/>	<input type="checkbox"/>
2. Availability of Terminal Option to VHSE students	<input type="checkbox"/>	<input type="checkbox"/>
3. Apprenticeship Training as a post-VHSE training strategy	<input type="checkbox"/>	<input type="checkbox"/>
4. Institutions Providing Apprenticeship Training	<input type="checkbox"/>	<input type="checkbox"/>
5. School-Industry Linkage	<input type="checkbox"/>	<input type="checkbox"/>
6. Higher Study Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
7. Employment Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
8. Self Employment Guidance for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
31. Have you undergone apprenticeship training?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
32. If the answer is 'No', are you willing to undergo apprenticeship training?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
33. Would you have pursued VHSE as terminal course (part I and II only) without higher study options if you were aware about the terminal option?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

34. Entrepreneurship Profile of the Respondent. There are 52 questions to be answered as part of this. Check the 'BOX' against the option of your choice using '√' mark.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. I believe that I can learn from errors and that it should be reflected in my behaviour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I keep an eye on the implementation of plans and remove the blockages.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I contribute in building up the image of my area/whole organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I do not give up even in the face of difficulty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. I do not see the importance of reading newspaper every day.
6. I do not get upset when I receive negative feedback for my performances.
7. When I am dealing with a problem, I tend to get stuck easily.
8. I like to take challenges in assignment and ensure their successful completion.
9. I find it difficult to come up with new ideas.
10. I am action oriented and always meet the expected results of my work.
11. Mistakes and failures make me so depressed that I cannot learn from them.
12. I am comfortable in tackling difficulties though my ingenuity and problem solving abilities.
13. I do not get excited with the favourable results if these are not due to my own effort.
14. During my free time (leisure period), I like discussing rumours among my friend.
15. I try to maintain open communication channels with everyone.
16. I do not find difficulty in convincing people around me to trust my capability to succeed.
17. I do not allow failures to discourage me.
18. When faced with a sudden change in plan of action. I am able to think about alternatives and decide on a new situation.
19. I believe that every challenge has an opportunity hidden in that.
20. I do not enjoy working in a team as a leader. Rather I like to be the member of the team.
21. I generally 'shoot down' the ideas of others.
22. I take a lot of initiative and I am always ready for collaborations.
23. The business I am thinking of is not really unusual.
24. It is not necessary to be scientific and rational about management technique as long as one has a will to do it.
25. I am not willing to work for more than eight hours a day.

-
26. I emphasis regular evaluation, measurement and review of performance.
27. My parents/friends/people around me doubt my capability to start and successfully handle the business.
28. I think new ideas lead to disagreement discussions and frictions
29. Setting a personal example of integrity and conscientiousness is not needed.
30. I am able to lead a group only when people are willing to follow me.
31. I would like to take risk in business if the chances of success lie between 30% - 40%.
32. I need not waste time and money on market research. If the product sells I will go on producing.
33. I find it difficult to perceive a need (foresee a problem) unless someone points it out.
34. I do not believe in conveying appreciations and complements.
35. I shall attempt to become an expert in the product I am selling.
36. I enjoy those activities where I get information on how good or how bad I am doing.
37. I don't want to start a business in an area in which another person was unsuccessful.
38. Thoughts about unexpected setbacks will not prevent me from starting a business.
39. I don't want to continue with a business that does not yield immediate results.
40. I think that feed backs usually lead to misunderstanding.
41. I don't like handing over my responsibilities to others.
42. I believe that the responsibility of mistakes committed by the team members falls on them only.
43. I think that the theoretical know how of an experiment is as important as the practical knowledge.
44. I am able to get the participation of the people around me in my new

ventures.

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 45. I don't think that I am able to pursue a person to do something. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. I can be a role model for my team members under all kinds of adverse circumstances. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. I am not interested in following ideas conceived and successfully implemented by the others. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. I think that pointing out mistakes will adversely affect personal relationships. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Becoming a business person is not my life ambition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. My nature is to arrive at decision immediately in any matter. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Business should always go ahead without taking into consideration the developments in the market. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. I don't think that changing the business will affect the reputation of the firm. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Thank you very much for your cooperation.

Anilkumar R.

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APPENDIX III

QUESTIONNAIRE TO SURVEY TEACHERS (QST)

Dear Sir/Madam

Kindly go through the instructions and questions carefully and respond accordingly. This survey is part of the data collection for a research conducted on the Vocational Higher Secondary Education in Kerala. The researcher here by assure the strict confidentiality of the data collected and promise you that the data will not be used for any other purpose.

1. Your name :
2. Age :
3. Sex :
4. Home address :
5. Phone number :
6. E-mail ID :
7. Name of your school :
8. Designation :
9. Nature of appointment :
10. Qualification :
11. Teaching experience in years :
12. Industry experience in years :
13. Awareness of the Respondent about VHSE. There are 8 questions to be answered as part of this. Check the 'YES' box using '√' mark if you are aware about the following aspects of VHSE and check the 'NO' box using '√' mark if you are not aware.

	YES	NO
--	-----	----

- | | | |
|---|--------------------------|--------------------------|
| 1. Goals and Objectives of VHSE | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Availability of Terminal Option to VHSE students | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Apprenticeship Training as a post-VHSE training strategy | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Institutions Providing Apprenticeship Training | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. School-Industry Linkage | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Higher Study Options for VHSE pass outs | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Employment Options for VHSE pass outs | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Self Employment Guidance for VHSE pass outs | <input type="checkbox"/> | <input type="checkbox"/> |
14. Do you think that your course is relevant with respect to employment opportunities?
- Yes No
15. How do you rate the demand for your course in your school?
- Poor Moderate High

16. What are the difficulties faced by you with respect to the following training strategies?

- **Field Visit**
 - Non-availability of Firms
 - Unwillingness from the part of Firms
 - Lack of proper guidelines
 - Lack of monitoring by the department
 - Financial difficulties
 - Others (Specify)
- **On-the-Job Training**
 - Non-availability of Firms
 - Unwillingness from the part of Firms
 - Lack of proper guidelines
 - Lack of monitoring by the department
 - Financial difficulties
 - Others (Specify)
- **School Industry Linkage**
 - Non-availability of Firms
 - Unwillingness from the part of Firms
 - Lack of proper guidelines
 - Lack of monitoring by the department
 - Financial difficulties
 - Others (Specify)
- **Apprenticeship Training**
 - Non-availability of Firms
 - Unwillingness from the part of Firms
 - Lack of proper guidelines
 - Lack of monitoring by the department
 - Financial difficulties
 - Others (Specify)

17. Training and Support Facility of the School. There are 20 questions to be answered as part of this. Check the 'BOX' against the option of your choice using '√' mark.

No.	Sub-dimension	Score Value Description	'√' mark
1	Class room facility	Not available at all	<input type="checkbox"/>
		Available, but not in adequate number	<input type="checkbox"/>
		Available in adequate number but without adequate furniture	<input type="checkbox"/>
		Available in adequate number with adequate furniture but not of the standard size	<input type="checkbox"/>
		Available in adequate number having the standard size and adequate furniture	<input type="checkbox"/>
2	Laboratory facility	Not available at all	<input type="checkbox"/>
		Some equipments are available, but no separate room	<input type="checkbox"/>
		Available with separate room but without adequate equipments	<input type="checkbox"/>
		Available with separate room and adequate equipments but without adequate furniture	<input type="checkbox"/>
		Available with separate room, adequate furniture and equipments	<input type="checkbox"/>
3	Library facility	Not available at all	<input type="checkbox"/>
		Some books are available, but no separate room	<input type="checkbox"/>
		Available with separate room but without sufficient books	<input type="checkbox"/>
		Available with separate room and sufficient books but without sufficient furniture	<input type="checkbox"/>
		Available with separate room, sufficient books and furniture	<input type="checkbox"/>
4	Smart room facility	Not available at all	<input type="checkbox"/>
		Some equipments are available, but no separate room	<input type="checkbox"/>
		Available with separate room but without adequate equipments	<input type="checkbox"/>
		Available with separate room and adequate equipments but without adequate furniture	<input type="checkbox"/>
		Available with separate room, adequate furniture and equipments	<input type="checkbox"/>
5	Physical	Not available at all	<input type="checkbox"/>

	training facility	Some facilities are available but without trainers	<input type="checkbox"/>
		Available with trainers but not with adequate facilities	<input type="checkbox"/>
		Available with adequate facilities but without trainers	<input type="checkbox"/>
		Available with adequate facilities and trainers	<input type="checkbox"/>
		Not available at all	<input type="checkbox"/>
6	Transportation facility	Available to about 25% of the needy students	<input type="checkbox"/>
		Available to about 50% of the needy students	<input type="checkbox"/>
		Available to about 75% of the needy students	<input type="checkbox"/>
		Available to all the needy students	<input type="checkbox"/>
		Not available at all	<input type="checkbox"/>
7	Drinking water facility	Limited availability of well/tap water with no purifier	<input type="checkbox"/>
		Sufficient availability of well/tap water with no purifier	<input type="checkbox"/>
		Sufficient availability of well/tap water with limited availability of purified water	<input type="checkbox"/>
		Sufficient availability of purified water	<input type="checkbox"/>
		Not available at all	<input type="checkbox"/>
8	Toilet facility	Available, but not in adequate number and no separate facility for boys and girls	<input type="checkbox"/>
		Available with separate facility for boys and girls but not in adequate number	<input type="checkbox"/>
		Available in adequate number with separate facility for boys and girls but not maintained well.	<input type="checkbox"/>
		Available in adequate numbers with separate facility for boys and girls and well maintained.	<input type="checkbox"/>
		Not at all available	<input type="checkbox"/>
9	Availability of Training Personnel	Available but not throughout the academic year	<input type="checkbox"/>
		Available throughout the academic year but not the same person	<input type="checkbox"/>
		The same person is available throughout the academic year but not for the two year term	<input type="checkbox"/>
		The same person is available for the two year term	<input type="checkbox"/>
10	Nature of appointment	Hourly Basis	<input type="checkbox"/>
		Guest	<input type="checkbox"/>

		Consolidated	<input type="checkbox"/>
		Employment	<input type="checkbox"/>
		Regular	<input type="checkbox"/>
		Not fully qualified with no industry experience	<input type="checkbox"/>
		Not fully qualified but with industry experience / Fully qualified with no industry experience	<input type="checkbox"/>
11	Qualification and industry experience	Fully qualified with industry experience of less than one year	<input type="checkbox"/>
		Fully qualified with industry experience of 1-5 years	<input type="checkbox"/>
		Fully qualified with industry experience of more than 5 years	<input type="checkbox"/>
		No experience	<input type="checkbox"/>
		Less than 1 year	<input type="checkbox"/>
12	Teaching experience	1-5 years	<input type="checkbox"/>
		5 -10 years	<input type="checkbox"/>
		10 years or more	<input type="checkbox"/>
		Do not exist at all	<input type="checkbox"/>
		Exists, but without any activity for the last one year	<input type="checkbox"/>
13	Production cum Training Centre (PTC)	Exists with one time activity in an academic year	<input type="checkbox"/>
		Exists with more than one activity in an academic year but not full-fledged	<input type="checkbox"/>
		Exists with full-fledged activities throughout the year	<input type="checkbox"/>
		Not done at all	<input type="checkbox"/>
		Done for second year only, but the duration is less than what is required	<input type="checkbox"/>
14	On the Job Training (OJT)	Done for second year only, but the duration as per requirement	<input type="checkbox"/>
		Done for both first and second years, but the duration less than what is required	<input type="checkbox"/>
		Done for both first and second years as per requirement	<input type="checkbox"/>
		Not done at all	<input type="checkbox"/>
15	Field Visit (FV)	Done for second year only, but the number of visits are less than what is required	<input type="checkbox"/>

		Done for second year only, but the number of visits are as per requirement	<input type="checkbox"/>
		Done for both first and second years, but the number of visits are less than what is required	<input type="checkbox"/>
		Done for both first and second years, as per requirement	<input type="checkbox"/>
		Not established	<input type="checkbox"/>
		Established, but participation limited to field visit	<input type="checkbox"/>
16	School Industry Linkage (SIL)	Established with participation in field visit and on the job training	<input type="checkbox"/>
		Established with participation in field visit, on the job training and production cum training centre	<input type="checkbox"/>
		Established with participation in field visit, on the job training, production cum training centre and apprenticeship training	<input type="checkbox"/>
		No firms contacted or procedures followed	<input type="checkbox"/>
		Procedures followed and firms contacted but no opportunities	<input type="checkbox"/>
17	Apprenticeship Training (AT)	Procedures followed and firms contacted but opportunities for less than 50% of the pass outs	<input type="checkbox"/>
		Procedures followed and firms contacted but opportunities for majority of the pass outs	<input type="checkbox"/>
		Procedures followed and firms contacted with very opportunities for all the pass outs	<input type="checkbox"/>
		Do not exist at all	<input type="checkbox"/>
		Exists, but without any activity for the last one year	<input type="checkbox"/>
18	Career Guidance and Counselling Cell (CGCC)	Exists with activities limited to counselling classes	<input type="checkbox"/>
		Exists with activities including counselling classes, career workshops and seminars	<input type="checkbox"/>
		Exists with further activities including counselling classes, career workshops, seminars and campus interviews	<input type="checkbox"/>
		Not Done at all	<input type="checkbox"/>
19	Follow-up activities	Done once a year without complete database of pass outs	<input type="checkbox"/>
		Done once a year with complete database of pass outs	<input type="checkbox"/>
		Done more than once a year with complete database of pass outs but not throughout the year	<input type="checkbox"/>

	Done throughout the year with complete database of pass outs	<input type="checkbox"/>
	Do not exist at all	<input type="checkbox"/>
	Exists, but without any activity related to career guidance and counselling	<input type="checkbox"/>
20	Old Students Association	
	Exists with activities including conduct of career guidance and counselling classes	<input type="checkbox"/>
	Exists with activities including conduct of career guidance and counselling classes and follow-up activities	<input type="checkbox"/>
	Exists with activities including conduct of career guidance and counselling classes, follow-up activities and career fests	<input type="checkbox"/>

Thank you very much for your cooperation.

Anilkumar R.



APPENDIX IV
QUESTIONNAIRE TO SURVEY PRINCIPALS (QSP)

Dear Sir/Madam

Kindly go through the instructions and questions carefully and respond accordingly. This survey is part of the data collection for a research conducted on the Vocational Higher Secondary Education in Kerala. The researcher here by assure the strict confidentiality of the data collected and promise you that the data will not be used for any other purpose.

1. Your name :
2. Age :
3. Sex :
4. Home address :
5. Phone number :
6. E-mail ID :
7. Name of your school :
8. Qualification :
9. Teaching experience in years :
10. Experience in years as principal :
11. Has there been any attempt to expand VHSE (in terms of batches) in your school?
Yes No
12. If the answer is 'No', mention the reasons for that.
13. Do you think that the VHSE in your school has adequate infrastructure facilities?
Yes No
14. If your answer is 'No', what are the reasons?
 - Lack of Funds
 - Lack of Space for Expansion
 - Lack of Guidelines from the Authorities
 - Lack of Monitoring from the Authorities
 - Others (Specify)

15. Awareness of the Respondent about VHSE. There are 8 questions to be answered as part of this. Check the 'YES' box using '√' mark if you are aware about the following aspects of VHSE and check the 'NO' box using '√' mark if you are not aware.

	YES	NO
Goals and Objectives of VHSE	<input type="checkbox"/>	<input type="checkbox"/>
Availability of Terminal Option to VHSE students	<input type="checkbox"/>	<input type="checkbox"/>
Apprenticeship Training as a post-VHSE training strategy	<input type="checkbox"/>	<input type="checkbox"/>
Institutions Providing Apprenticeship Training	<input type="checkbox"/>	<input type="checkbox"/>
School-Industry Linkage	<input type="checkbox"/>	<input type="checkbox"/>
Higher Study Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
Employment Options for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>
Self Employment Guidance for VHSE pass outs	<input type="checkbox"/>	<input type="checkbox"/>

Thank you very much for your cooperation.

Anilkumar R.

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APPENDIX V

Socioeconomic Status Scale of O.P. Aggarwal, S.K. Bhasin, A.K. Sharma, P. Chhabra, K. Aggarwal, O.P. Rajoura

Q 1. Monthly per capita income from all sources (total monthly income /no. of family members)

- | | |
|----------------|---|
| 1. > 50000 | 7 |
| 2. 20000-49999 | 6 |
| 3. 10000-19999 | 5 |
| 4. 5000-9999 | 4 |
| 5. 2500-4999 | 3 |
| 6. 1000-2499 | 2 |
| 7. < 1000 | 1 |

Q 2. Education of either husband or wife who is more educated among them

- | | |
|--|---|
| 1. Professional qualification with technical degrees or diplomas e.g. Doctor, Eng. CA, MBA, etc. | 7 |
| 2. Postgraduation (non-technical incl. Ph.D) | 6 |
| 3. Graduation | 5 |
| 4. 10th class pass but < Graduation | 4 |
| 5. Primary pass but < 10th | 3 |
| 6. < Primary but attended school for at least one year | 2 |
| 7. Just literate but no schooling | 1 |
| 8. Illiterate | 0 |

Q 3. Occupation of husband, otherwise wife.

- | | |
|---|---|
| 1. Service in central/State/Public undertakings or Owner of a company employing > 20 persons or self-employed professional viz. Doctors, CAs, Eng. Etc. | 5 |
| 2. Service in Private sector or independent business employing 2-20 persons | 4 |
| 3. Service at shops, home, transport, own cultivation of land | 3 |
| 4. Self employed e.g. shops, Rehdies or petty business with income > 5000 | 2 |
| 5. Self employed with income < 5000 (labourer, house wife) | 1 |
| 6. None of the family member is employed | 0 |

Q 4. Family possessions (presence of each item given below will carry score of 1) 10

1. Refrigerator
2. TV
3. Radio/Transistor/Music system
4. AC
5. Washing Machine
6. Telephone
7. Mobile
8. Credit card

9. Sanitary lat.	
10. Any newspaper subscribed throughout the month	
Q 5. Living in a type of house	
1. Own house with 5 or more rooms	7
2. Own house with 3-4 rooms	6
3. Rented/Govt. house with 5 or more rooms	6
4. Own house with 1-2 rooms	5
5. Rented/Govt. house with 3-4 rooms	5
6. Rented/Govt. house with 1-2 rooms	4
7. Own jhuggi	3
8. Rented jhuggi	2
9. No place to live, pavement, mobile cart	1
Q 6. Possession of a vehicle or equivalent	
1. 2 or more cars/Tractors/Trucks	4
2. 1 Car /Tractor/Truck	3
3. 1 or more scooter(s)/Bullock cart (s)	2
4. 1 or more cycles (not baby cycle)	1
5. None of the above	0
Q. 7 No. of earning members in the family (Nuclear/Joint)	
1. 3 or more members earning and income pooled	3
2. 2 or both husband and wife earning	2
3. Only 1 family member earning	1
4. No earning member	0
Q 8. No. of children head of the family has/had	
1. 0-1	5
2. 2	4
3. 3	3
4. 4	2
5. 5	1
6. > 6	0
Q 9. Facility of some essentials in the family	
1. Both tap water supply and electricity	2
2. Only one of above two is present	1
3. None is present	0
Q10. Education of children (in relation to head of the family)	
Note : Exclude under 5 children for this item. A child applicable here is one who is 5 yrs or above.	
1. All children going/ever gone to school/college	3
2. > 50% children ever gone/going to school/college	2
3. < 50% children ever gone/going to school/college	1
4. No child ever gone/going to school/college	0
Q 11. Employment of a domestic servant at home	
1. Employed > 2 full time servants on salary for domestic Work	4
2. Employed only 1 full time servant on salary for domestic work	3

3. Employed > 3 part time servants on salary for domestic work	2
4. Employed 1-2 part time servants on salary for domestic work	1
5. Employed no servants for domestic work	0
Q 12.Type of locality the family is residing	
1. Living in urban locality	5
2. Living in rural locality	4
3. Living in resettlement colony	3
4. Living in slums/jhuggis	2
5. No fixed living and mobile	1
Q 13.Caste of the family	
1. Upper caste	4
2. OBC	3
3. Dalits	2
4. Tribals	1
Q. 14. Members of family gone abroad in last three years (official or personal)	
1. Whole family	3
2. Only husband and wife	2
3. Only 1 family member	1
4. None	0
Q 15. Possession of agricultural land for cultivation	
1. Own agricultural land > 100 acres	5
2. Own agricultural land 51-100 acres	4
3. Own agricultural land 21-50 acres	3
4. Own agricultural land 6-20 acres	2
5. Own agricultural land 1-5 acres	1
6. No agricultural land	0
Q 16. Possession of non-agricultural land/land for housing or other type of land	
1. Own non-agricultural land/land for housing > 1000 Sq Yards	3
2. Own non-agricultural land/land for housing 501-1000 Sq. Yards	2
3. Own non-agricultural land/land for housing 25-500 Sq. Yards	1
4. Own non-agricultural land/land for housing < 25 Sq. Yards –OR Does not own non-agricultural land/land for housing at all	0
Q 17.Presence of milking cattle in the family for business or non-business purposes	
1. Own 4 or more milking cattle	3
2. Own 1-3 milking cattle	2
3. Own 1 milking cattle	1
4. Does not own any milking cattle	0
Q 18. Presence of non milking cattle or pet animals in the family	
1. Own 2 or more	2
2. Own 1	1
Q 19. Besides the house in which the family is living, the family owns other house or shop or shed etc. of any size whether given on rent or not	
1. Owns 3 or more	3

2. Owns 2 or more	2
3. Owns 1	1
4. Does not own any	0
Q 20. Positions held (besides the positions as employee) by any one member in the family	
1. Holding position of 3 or more official or non-official organizations viz. president/chairman/Secretary/ Treasurer etc.	4
2. Holding position of 1-2 official or not-official organizations viz. president/chairman/Secretary/ Treasurer etc.	3
3. Holding position as member only of executive or other committees of official or non-official organizations.	2
4. Does not hold any such position	1
Q 21. Parental support in the form of non-movable property	
1. > 50 acres of agricultural land -OR -a house/plot > 1000 sq yards -OR -Both	4
2. 21-50 acres of agricultural land -OR-a house/plot 501- 1000 sq yards -OR - Both	3
3. 1-20 acres of agricultural land -OR -a house /plot 100-500 sq yards -OR-Both	2
4. No agricultural land -BUT - a house/plot 25-100 sq yards	1
5. No parental property	0
Q22. Total amount of income tax paid by the family (include all the earning members IT)	
1. > 10 lacs	7
2. 1-10 lacs	6
3. > 50000 but < 1 lac	5
4. > 20000 - < 50000	4
5. > 10000- < 20000	3
6. > 5000- < 10000	2
7. < 5000	1
8. Nil	0

All the item scores are added up to get the total score.

Categorisation of Social Status Score

1. *Upper High > 76*
2. *High 61-75*
3. *Upper Middle 46-60*
4. *Lower Middle 31-45*
5. *Poor 16-30*
6. *Very Poor or Below Poverty Line < 15*

Minimum Score = 5

Maximum Score = 100



APPENDIX VI

AWARENESS SCALE

All the questions are 'Yes' or 'No' type questions. If the answer to a question is 'Yes', it will get a score of '1' and if the answer is 'No' it will get a score of '0'. All the scores are added to get the total score.

1. Goals and Objectives of VHSE
2. Availability of Terminal Option to VHSE students
3. Apprenticeship Training as a post-VHSE training strategy
4. Institutions Providing Apprenticeship Training
5. School-Industry Linkage
6. Higher Study Options for VHSE pass outs
7. Employment Options for VHSE pass outs
8. Self Employment Guidance for VHSE pass outs

Categorisation based on the Awareness Score

Awareness Score	0-2	'Poor'
Awareness Score	3-5	'Average'
Awareness Score	6-8	'Good'

Minimum Score = 0

Maximum Score = 8



APPENDIX VII

TRAINING AND SUPPORT FACILITY SCALE

No.	Sub-dimension	Score Value	Score Value Description
1	Class room facility	1	Not available at all
		2	Available, but not in adequate number
		3	Available in adequate number but without adequate furniture
		4	Available in adequate number with adequate furniture but not of the standard size
		5	Available in adequate number having the standard size and adequate furniture
2	Laboratory facility	1	Not available at all
		2	Some equipments are available, but no separate room
		3	Available with separate room but without adequate equipments
		4	Available with separate room and adequate equipments but without adequate furniture
		5	Available with separate room, adequate furniture and equipments
3	Library facility	1	Not available at all
		2	Some books are available, but no separate room
		3	Available with separate room but without sufficient books
		4	Available with separate room and sufficient books but without sufficient furniture
		5	Available with separate room, sufficient books and furniture
	Smart room facility	1	Not available at all
		2	Some equipments are available, but no separate room
		3	Available with separate room but without adequate equipments
		4	Available with separate room and adequate equipments but without adequate furniture
		5	Available with separate room, adequate furniture and equipments
5	Physical training facility	1	Not available at all
		2	Some facilities are available but without trainers
		3	Available with trainers but not with adequate facilities
		4	Available with adequate facilities but without trainers
		5	Available with adequate facilities and trainers
6	Transportation facility	1	Not available at all
		2	Available to about 25% of the needy students
		3	Available to about 50% of the needy students
		4	Available to about 75% of the needy students
		5	Available to all the needy students
7	Drinking water facility	1	Not available at all
		2	Limited availability of well/tap water with no purifier
		3	Sufficient availability of well/tap water with no purifier

		4	Sufficient availability of well/tap water with limited availability of purified water
		5	Sufficient availability of purified water
		1	Not available at all
		2	Available, but not in adequate number and no separate facility for boys and girls
8	Toilet facility	3	Available with separate facility for boys and girls but not in adequate number
		4	Available in adequate number with separate facility for boys and girls but not maintained well.
		5	Available in adequate numbers with separate facility for boys and girls and well maintained.
		1	Not at all available
		2	Available but not throughout the academic year
9	Availability of Training Personnel	3	Available throughout the academic year but not the same person
		4	The same person is available throughout the academic year but not for the two year term
		5	The same person is available for the two year term
		1	Hourly Basis
		2	Guest
10	Nature of appointment	3	Consolidated
		4	Employment
		5	Regular
		1	Not fully qualified with no industry experience
		2	Not fully qualified but with industry experience / Fully qualified with no industry experience
11	Qualification and industry experience	3	Fully qualified with industry experience of less than one year
		4	Fully qualified with industry experience of 1-5 years
		5	Fully qualified with industry experience of more than 5 years
		1	No experience
		2	Less than 1 year
12	Teaching experience	3	1-5 years
		4	5 -10 years
		5	10 years or more
		1	Do not exist
		2	Exists, but without any activity for the last one year
13	Production cum Training Centre (PTC)	3	Exists with one time activity in an academic year
		4	Exists with occasional activities in an academic year
		5	Exists with full fledged activities throughout the year
		1	Not done at all
		2	Done for second year only, but the duration is less than what is required
14	On the Job Training (OJT)	3	Done for second year only, but the duration as per requirement
		4	Done for both first and second years, but the duration less than what is required
		5	Done for both first and second years as per requirement
15	Field Visit (FV)	1	Not done at all

		2	Done for second year only, but the number of visits are less than what is required
		3	Done for second year only, but the number of visits are as per requirement
		4	Done for both first and second years, but the number of visits are less than what is required
		5	Done for both first and second years, as per requirement
16	School Industry Linkage (SIL)	1	Not established
		2	Established, but participation limited to field visit
		3	Established with participation in field visit and on the job training
		4	Established with participation in field visit, on the job training and production cum training centre
		5	Established with participation in field visit, on the job training, production cum training centre and apprenticeship training
17	Apprenticeship Training (AT)	1	No firms contacted or procedures followed
		2	Procedures followed and firms contacted but no opportunities
		3	Procedures followed and firms contacted but opportunities for less than 10% of the pass outs
		4	Procedures followed and firms contacted but opportunities for less than 50% of the pass outs
		5	Procedures followed and firms contacted with very opportunities for all the pass outs
18	Career Guidance and Counselling Cell (CGCC)	1	Do not exist
		2	Exists, but without any activity for the last one year
		3	Exists with activities limited to counselling classes
		4	Exists with activities including counselling classes, career workshops and seminars
		5	Exists with further activities including counselling classes, career workshops, seminars and campus interviews
19	Follow-up activities	1	Not Done at all
		2	Done once a year without complete database of pass outs
		3	Done once a year with complete database of pass outs
		4	Done occasionally with complete database of pass outs
		5	Done throughout the year with complete database of pass outs
20	Old Students Association	1	Do not exist
		2	Exists, but without any activity related to career guidance and counselling
		3	Exists with activities including conduct of career guidance and counselling classes
		4	Exists with activities including conduct of career guidance and counselling classes and follow-up activities
		5	Exists with activities including conduct of career guidance and counselling classes, follow-up activities and career fests

Weights Given to the Various Dimensions and Sub-dimensions of Training and Support Facility

Dimension	Weight	Sub-dimension	Weight
Infrastructure facility	0.3	Class room facility	3
		Laboratory facility	3
		Library facility	1.5
		Smart room facility	0.5
		Physical training facility	0.5
		Transportation facility	0.5
		Drinking water facility	0.5
		Toilet facility	0.5
		Total for the Sub-dimension	10
Training Personnel	0.3	Availability	4
		Nature of appointment	1
		Qualification and industry experience	3
		Teaching experience	2
		Total for the Sub-dimension	10
Real Life Training	0.2	Production cum Training Centre (PTC)	4
		On the Job Training (OJT)	3
		Field Visit (FV)	1
		School Industry Linkage (SIL)	1
		Apprenticeship Training (AT)	1
		Total for the Sub-dimension	10
Career Guidance and Counselling	0.2	Career Guidance and Counselling Cell (CGCC)	5
		Follow up activities	3
		Old Students Association	2
Total for all the Dimensions	1.0	Total for the Sub-dimension	10

First the score value obtained for each sub-dimension of a particular dimension was multiplied with the corresponding sub-dimension weight and the values thus obtained were summed up to get the total score of the corresponding dimension. The maximum score thus obtainable was 50 and the minimum score 10 with a median scale value of 30. After getting the dimension scores, they were multiplied with the corresponding dimension weights, and the values thus obtained were added together to get the total *Training and Support Facility Score*. Again the maximum score thus obtainable was 50 and the minimum score 10 with a median scale value of 30.

Categorisation of Schools

Category	Total Score
Very Poor	10-18
Poor	18-26
Average	26-34
High	34-42
Very High	42-50



APPENDIX VIII

ENTREPRENEURSHIP SCALE

Developed by DETE (1998), Small Business Organisation, Programmes and Curriculum Group, Department of Training and Employment, Adelaide, South Australia

Modified by Shipra Vaidya, Department of Education in Social Sciences and Humanities, NCERT, Sri Aurobindo Marg, New Delhi-110 016

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. I believe that I can learn from errors and that it should be reflected in my behaviour	1	2	3	4	5
2. I keep an eye on the implementation of plans and remove the blockages.	1	2	3	4	5
3. I contribute in building up the image of my area/whole organisation.	1	2	3	4	5
4. I do not give up even in the face of difficulty.	1	2	3	4	5
5. I do not see the importance of reading newspaper every day.	5	4	3	2	1
6. I do not get upset when I receive negative feedback for my performances.	1	2	3	4	5
7. When I am dealing with a problem, I tend to get stuck easily.	5	4	3	2	1
8. I like to take challenges in assignment and ensure their successful completion.	1	2	3	4	5
9. I find it difficult to come up with new ideas.	5	4	3	2	1
10. I am action oriented and always meet the expected results of my work.	1	2	3	4	5

11. Mistakes and failures make me so depressed that I cannot learn from them.	5	4	3	2	1
12. I am comfortable in tackling difficulties though my ingenuity and problem solving abilities.	1	2	3	4	5
13. I do not get excited with the favourable results if these are not due to my own effort.	1	2	3	4	5
14. During my free time (leisure period), I like discussing rumours among my friend.	5	4	3	2	1
15. I try to maintain open communication channels with everyone.	1	2	3	4	5
16. I do not find difficulty in convincing people around me to trust my capability to succeed.	1	2	3	4	5
17. I do not allow failures to discourage me.	1	2	3	4	5
18. Where faced with a sudden change in plan of action. I am able to think about alternatives and decide on a new situation.	1	2	3	4	5
19. I believe that every challenge has an opportunity hidden in that.	1	2	3	4	5
20. I do not enjoy working in a team as a leader. Rather I like to be the member of the team.	5	4	3	2	1
21. I generally 'shoot down' the ideas of others.	5	4	3	2	1
22. I have a list of initiative and I am always ready for collaborations.	1	2	3	4	5
23. The business I am thinking of is not really unusual.	5	4	3	2	1
24. It is not necessary to be scientific and rational about management technique as long as one has a will to do it.	5	4	3	2	1
25. I am not willing to work for more than eight hours a day.	5	4	3	2	1
26. I emphasis regular evaluation, measurement and review of performance.	1	2	3	4	5
27. My parents/friends/people around me doubt my capability to start and successfully handle the business.	5	4	3	2	1
28. I think new ideas lead to disagreement discussions and frictions	5	4	3	2	1
29. Setting a personal example of integrity and conscientiousness is not needed.	5	4	3	2	1
30. I am able to lead a group only when people are willing to follow me.	5	4	3	2	1

31. I would like to take risk in business if the chances of success lie between 30% - 40%.	1	2	3	4	5
32. I need not waste time and money on market research. If the product sells I will go on producing.	5	4	3	2	1
33. I find it difficult to perceive a need (foresee a problem) unless someone points it out.	5	4	3	2	1
34. I do not believe in conveying appreciations and complements.	5	4	3	2	1
35. I shall attempt to become an expert in the product I am selling.	1	2	3	4	5
36. I enjoy those activities where I get information on how good or how bad I am doing.	1	2	3	4	5
37. I don't want to start a business in an area in which another person was unsuccessful.	5	4	3	2	1
38. Thoughts about unexpected setbacks will not prevent me from starting a business.	1	2	3	4	5
39. I don't want to continue with a business that does not yield immediate results.	5	4	3	2	1
40. I think that feed backs usually lead to misunderstanding.	5	4	3	2	1
41. I don't like handing over my responsibilities to others.	1	2	3	4	5
42. I believe that the responsibility of mistakes committed by the team members falls on them only.	5	4	3	2	1
43. I think that the theoretical know how of an experiment is as important as the practical knowledge.	1	2	3	4	5
44. I am able to get the participation of the people around me in my new ventures.	1	2	3	4	5
45. I don't think that I am able to pursue a person to do something.	5	4	3	2	1
46. I can be a role model for my team members under all kinds of adverse circumstances.	1	2	3	4	5
47. I am not interested in following ideas conceived and successfully implemented by the others.	1	2	3	4	5
48. I think that pointing out mistakes will adversely affect personal relationships.	5	4	3	2	1
49. Becoming a business person is not my life ambition.	5	4	3	2	1
50. My nature is to arrive at decision immediately in any matter.	5	4	3	2	1
51. Business should always go ahead without taking into consideration the developments in the market.	5	4	3	2	1
52. I don't think that changing the business will affect the reputation of the firm.	1	2	3	4	5

A given dimension is *dominant* if its score is equal to or more than 16.

A given dimension is *supportive* if its score is equal to or more than 12 but less than 16.

A given dimension is *least emerging* if its score is equal to or more than 8 but less than 12.

A given dimension is *rejected* if its score is less than 8.

All the item scores are added up to get the total score.

Minimum Score = 52

Maximum Score = 260

Sl. No.	Dimensions	Corresponding Question (Item) Numbers			
1	Risk Taking	23	31	37	38
2	Persistence and Hard Work	4	17	25	39
3	Use of Feed Back	6	11	36	40
4	Personal Responsibility	13	20	41	42
5	Knowledge Ability	5	32	35	43
6	Persuasive Ability	16	30	44	45
7	Managerial Ability	24	27	34	46
8	Innovativeness	9	12	33	47
9	Integrity and Communication	3	14	15	29
10	Emotional Stability	1	8	28	48
11	Motivation	10	22	26	49
12	Decision Making	2	18	21	50
13	Divergent Thinking	7	19	51	52



APPENDIX IX

LIST OF SCHOOLS SELECTED FOR THE STUDY

1. GVHSS, ANCHAL, Kollam District
2. GVHSS, MUTTARA, Kollam District
3. GVHSS, KARUNAGAPPALLY, Kollam District
4. GVHSS(BOYS), KOLLAM, Kollam District
5. GVHSS, PATTAZHI, Kollam District
6. GVHSS, CHTHANNOOR, Kollam District
7. GVHSS, KADAKKAL, Kollam District
8. GVHSS, VALATHUNGAL, Kollam District
9. GVHSS, ACHANCOVIL, Kollam District
10. GRFTHS, KARUNAGAPPALLY, Kollam District
11. ST.JOHN'S VHSS, UMMANNOOR, Kollam District
12. MVHSS, MANJAPPARA, Kollam District
13. SVMHVHSS, VENDAR, Kollam District
14. BJMVHSS, MADATHIL, THAZHVA, Kollam District
15. TVHSS, THADIKKAD, PATHAPUNARAM, Kollam District
16. VVHSS, POREDAM, CHADAYAMANGALAM, Kollam District
17. VHSS, ARKANNOOR, Kollam District
18. DVVHSS, THALAVUR, KOTTARAKKARA, Kollam District
19. GVHSS, RAMAVARMAPURAM, Thrissur District
20. GVHSS, PUTHUR, Thrissur District
21. GVHSS(GIRLS), IRINJALAKKUDA, Thrissur District
22. GVHSS, VALAPPA, Thrissur District
23. GVHSS, WADAKKANCHERY, Thrissur District
24. GMVHSS(GIRLS), TRISSUR, Thrissur District

25. GVHSS, THALIKKULAM, Thrissur District
26. GVHSS, THIRUVILLAMALA, Thrissur District
27. MSRMGVHSS, SANTHIPURAM, Thrissur District
28. GVHSS, DESAMANGALAM, Thrissur District
29. RMVHSS, PERINJANAM, Thrissur District
30. SNVVHSS ALOOR, Thrissur District
31. GFRTVHSS(BOYS), MADAPPALLY, Kozhikkode District
32. GHHSS(BOYS), KOILANDY, Kozhikkode District
33. GVHSS GIRLS, NADAKKAVU, Kozhikkode District
34. GVHSS, CHERUVANNUR, Kozhikkode District
35. GVHSS, PAYYOLI, Kozhikkode District
36. GVHSS, KUTTICHIRA, Kozhikkode District
37. GVHSS, PAYAYANKKAL, Kozhikkode District
38. KOOHALI VHSS, PARAMBRA, Kozhikkode District
39. MUMVHSS, VDAKARA, Kozhikkode District



