VOCATIONAL EDUCATION COURSES IN THE GENERAL DEGREE COLLEGES UNDER GAUHATI UNIVERSITY- AN EVALUATIVE STUDY

A THESIS
SUBMITTED TO GAUHATI UNIVERSITY FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY IN EDUCATION IN THE
FACULTY OF ARTS

SABITA DEVI
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Declaration

I, Sabita Devi, research scholar in the Department of Education, Gauhati University hereby declare that this thesis entitled, **"VOCATIONAL EDUCATION COURSES IN THE GENERAL DEGREE COLLEGES UNDER GAUHATI UNIVERSITY- AN EVALUATIVE STUDY"** is my original research work undertaken and carried out under the guidance and supervision of Dr.Dulumoni Goswami, Assistant Professor, Department of Education, Gauhati University. I have duly acknowledged all the sources or quotations used in this thesis with appropriate references.

Sabita Devi

Date: 14/8/2014

Place: Guwahati

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Certificate

I hereby certify that the present thesis entitled "**VOCATIONAL EDUCATION COURSES IN THE GENERAL DEGREE COLLEGES UNDER GAUHATI UNIVERSITY – AN EVALUATIVE STUDY**" incorporates the results of the independent research work of Sabita Devi, Research Scholar, Department of Education, Gauhati University, carried out under my guidance and supervision. I also certify that this is not the basis of any work presented previously for the award of any Degree/ Diploma/ Associateship/ Fellowship of either Gauhati University or any other university.

14/08/2014

(Dr. Dulumoni Goswami)

Research Supervisor

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Sabita Devi

(Sabita Devi)

Preface

It is a general fact that quality of human resources is an important determinant of global competitiveness. Higher education is concerned with human resource development by enhancing knowledge and skills of the people in a society. A strong pool of human resource may be referred as a prerequisite for the overall development of a nation. It has been observed by the researchers engaged in education sector that in order to meet the emerging needs of different types of skilled manpower, a properly planned and effectively implemented vocational education system is a must. The rapid growth in the field of technology, finance, business, working practice has further intensifies the need of skilled manpower. The focus is gradually increasing on working skills and expertise in a particular field of one's own. Hence much emphasis has to be given on success of vocational education and training programmes which in other words can be mentioned as the double edged weapon to be used against unemployment problem and producing skilled personnel and workers for the global market.

In India therefore success of vocational education programmes can help producing huge pool of skilled personnel provided scope of such education expanded effectively to cover the general degree colleges. In fact this has already been initiated through different government agencies including UGC, MHRD, NIOS etc. In order to ensure a high level of productivity and standard of living from such programme, higher level of research work is always a dire necessity. But fewer works has been done so far as vocational education in general degree colleges are concerned and particularly in Assam apparently no such research activities are initiated. This thesis is an embodiment of such research with significant focus on various aspects of vocational education courses continuing in general degree colleges under Gauhati University. The vocational education programme should offer opportunities to all youth and adults at appropriate levels in all occupational fields. The function of vocational education is to prepare not only for an initial occupation but for the further advancement of the worker as well.

The negligence towards the vocational education has resulted in creating a large number of educated unemployment people in India. It is clear that without sound vocational education policy it may be very difficult for India to compete with the developed countries of the world so far as the quality of human resource is concerned. Vocational education is one of the most significant components of Human Resource Development Spectrum with great potential for adding value to products and services, for contributing to the national economy and for improving the quality of life of the people.

This thesis presents studies related to vocational education courses continuing in general degree colleges under Gauhati University. Various aspects incorporated in the thesis are to study the profile of various vocational education courses, student's participation and faculty strength of these courses, infrastructural facilities and availability of equipment, student's perception and choice towards these courses. Apart from that the study also covers the difficulties that are faced by the teachers and students who are associated with these courses.

With these objectives in mind, the entire thesis is divided into five chapters. Chapters are framed according to the following pattern -

Chapter-I: The first chapter includes a brief introduction to the broad area of vocational education including higher vocational education, vocational guidance, vocational teacher preparation, vocational education for disabled and so on. A clear statement of the problem, significance of the study, objectives, definition of key-terms, and delimitation of the study are also presented in this chapter.

Chapter-II: The second chapter reviews important literature related to the study which will help the researcher to develop the conceptual framework for the present study.

Chapter-III: The third chapter contains the methodology of the study. In this chapter the population, sampling design, description of the techniques and tools for data collection and statistical techniques adopted for the analysis of data are discussed.

Chapter-IV: The fourth chapter deals with the analysis and interpretation of collected data.

Chapter-V: The fifth chapter presents findings and conclusion. The educational implications of the study and some suggestions for future research are also included in this chapter. Finally this chapter concluded with a summary of the study.

It is expected that results obtained from the study will constitute a vital document for preparation of effective strategies for successful implementation of vocational education courses in the general degree colleges. Further it is hoped that the information provided by the thesis will paved the way for future research activities in this domain.

Place: Guwahati

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CONTENTS

LIST OF TABLES

LIST OF CHART AND FIGURES

Abbreviations

AICTE:	All India Council for Technical Education
AICVE:	All-India Council for Vocational Education
AVI:	Accredited Vocational Institutes
B. Voc:	Bachelor of Vocation
COC:	Career Oriented Courses
CSS:	Centrally Sponsored Scheme
GOI:	Government of India
HRD:	Human Resource Development
IGNOU:	Indira Gandhi National Open University
MHRD:	Ministry of Human Resource Development
MoLE:	Ministry of Labour and Employment
NCERT:	National Council of Educational Research and Training
NIOS:	National Institute of Open Schooling
NKC:	National Knowledge Commission
NPE:	National Policy on Education
NPSD:	National Policy on Skill Development
NSQF:	National Skill Qualification Framework
NVEQF:	National Vocational Education Qualification Framework
NVQF:	National Vocational Qualification Framework

NVSQF: National Vocational Skill Qualification Framework

ODL: Open and Distance Learning

PPP: Public Private Partnership

PSSCIVE: Pandit Sunderlal Sarma Central Institute of Vocational Education

PWDs: People with Disabilities

RMSA: Rashtriya Madhyamik Siksha Abhijan

SCVE: State Council for Vocational Education

SSCs: Sector Skill Councils

TVDE: Technical and Vocational Distance Education

UGC: University Grants Commission

UNESCO: United Nations Educational, Scientific and Cultural Organization

VE: Vocational Education

VEP: Vocational Education Programme

CHAPTER – I

INTRODUCTION

CHAPTER-I

INTRODUCTION

1.1 Introduction

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 standard of life. Thus, human development accelerates the process of development.[1] Education is the basic parameter to ascertain the status of development of a country. In other words education is the backbone of a nation. It is a tool with which the population can be transformed into human resources. Human resource development is now accepted as a major factor that explains the differential performance in economic and social spheres of the country. In an underdeveloped and educationally backward country higher education on a mass and universal scale provides the fundamental basis on which the nation can raise the future structure of national development to significant level. The great Indian scholar and philosopher Swami Vivekananda was a strong believer and propagator of value-based employable education. Explaining 'True Education', he said that "we want an education which builds character, increases strength of mind, expands the intellect and which equips a person to stand on his own feet".[2] Mahatma Gandhi had emphasized the need to develop desirable work values by harmonizing intellectual and manual work through Basic education. In India every year 12.8 million person enter into the labour market where 90% employment opportunities require vocational skills that are not usually imparted on a large scale in schools and colleges. In contrary less than 5% receives formal vocational training.[3] Therefore in order to bridge this gap a major reform in the education system is eminent to bring about necessary flexibility in the offering of vocational education courses. This fact also explains why introduction of vocational education courses along with general education system is essential. Moreover

vocational education has been recognized as a fundamental tool for human resource development and hence for country's economic growth.

According to the Delors Commission (International Commission on Education for the twenty –first Century) Report on Learning, education throughout life is based on four pillars. These pillars are- Learning to know, Learning to do, Learning to live together and Learning to be. Among the pillars the 'Learning to do' is essentially related to Vocationalization of education. This pillar implies acquiring not only an occupational skill but also more broadly, the competence to deal with many situations and work in teams.[4] But unfortunately, as per NKC (National Knowledge Commission)[5] report only 10% amongst labour force aged 15-29 in India receives vocational training (2% formal and 8% non-formal).[6] Formal vocational training is a structural education programme leading to certificate, diploma or degree from state government or central government or from some public sector enterprises. Non-formal vocational training in contrast does not have any structural education system and is being provided through hereditary and other sources. The aim of all education is developmental, cultural and vocational fulfillment. Work or vocation occupies an important place in the life of every individual because it gives independence and security. It is assumed that if the nation's economic and social vitality is to be improved and if high level of productivity and high standard of living are to be achieved within a reasonable span of time, proper Vocationalization of education particularly in higher education system is essential. Expansion of vocational education will help us to obtain more knowledgeable and skilled person for sustainable economic growth of the country.

Vocational education is a part of the total education process. In the broadest sense vocational education is that part of education which makes an individual more employable in one group of occupations than in another. So any training, which contributes to employability or preparation for work is vocational education. Vocational education is a method of integrating education with work. Vocational programmes are expected to offer a platform for all youth and adults at appropriate levels, for developing their skills for all occupational fields. The function of vocational education is to prepare one for initial occupation as well as imparting knowledge required for further

advancement in the work field. Today vocational education is considered as part of the foundation of man's creative and progressive development.

Vocational education plays a vital role in developing proper human resource of the country by creating skilled manpower, enhancing industrial productivity and improving the quality of life. Vocational education covers courses and programmes like- tourism, instrument maintenance, fashion designing, art & craft, floriculture, horticulture, computer courses, communicative skill, hotel management, functional English and many more. It is noteworthy that India's technical and specialized manpower is now significantly improved through vocationalization which renders it possible to generate sufficient manpower for effectively managing business and knowledge industries within and outside the country. This fact indicates that in order to develop a positive work culture in the country, much emphasis has to be given on vocationalization of regular education and improvement of technical education as well. D.R. Dua has rightly remarked, "The cardinal aim of Vocationalization of education, it may be asserted, is to ensure an integral development of the personality and not the development of a mere technician or mechanic".[7]

1.2 Higher Vocational Education

Education is recognized as one of the critical elements of the national development effort and higher education, in particular, is of vital importance for the nation, as it is a powerful tool to build knowledge based society of the 21st century. Higher education provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialized knowledge and skills of the people in a society .[8] Tertiary educations is a critical pillar of human development which provides not only the high-level skills necessary for every labour market but also the training essential for all profession. It is these trained individuals who develop the capacity and analytical skills that drive local economies, support civil society, teach children, lead effective governments and make important decision which affect entire society. The contribution of tertiary education is important for national innovation system and the

development of human resources. Major drawback of Indian higher education system is, it is still elitist in nature and does not provide enough weightage to vocational education. Vocational education is still looked down and therefore there is a need of paradigm shift in approach from elitist to egalitarian, from liberal to more and more skill oriented.[9]

General education system comprises of primary, secondary, higher secondary and tertiary education. Among these secondary and higher secondary education system can be referred to as important terminal stages because these are the stages which guide the youth in deciding whether to pursue higher education, opt for technical education or join the workforce. It has commonly been accepted that adequate vocational bias at this stages can help the students to adapt properly with the world of employment. Profound educationists and experts have also consistently recommending appropriate vocational bias at these stages. Vocational education in higher education sector in India is becoming highly relevant for filling up the vacuum created by the absence of appropriately skilled persons for various fields of work. People skilled in various vocations are of high demand in the world. Particularly higher vocational education is instrumental in imparting technology based knowledge to the students at undergraduate level with stronger ability to practice. Further it has been realized that for interlinking education with productivity and for meeting with the growing demand of skilled person, it is highly essential to introduce the concept even at higher educational institutions, preferably in general degree colleges.

Vocational Education refers to activities designed to contribute to occupational proficiency. The NCERT's document on 'Higher secondary education and its Vocationalization (1976), accepted the UNESCO's definition of 1974, which characterized vocational education as a comprehensive term embracing, those aspects of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in the various sectors of economic and social life. It is commonly agreed that education must be related to the needs and aspiration of the people and present day need of Indian society necessitates a link between education and productivity. To achieve this goal one of the most important

measure is to ensure sufficient vocational bias especially at the higher education level. It is also apparent that general education and vocational education could not be segregated rather the two should be galvanized. In the kind of society in which we will be leaving, increasingly in the coming years a complete separation between the two will not only be undesirable but also impossible. A strong vocational bias to secondary education towards increasing emphasis on agricultural and technological education at the college and university stage can bring into a closer relationship with productivity. This is of special significance in Indian situations where the educational system has been training young people mostly producing persons for government services, the so called 'white collared professions' and most of them lacking specific skill sets required by the market.

In order to minimize the mismatch between skilled manpower required and skilled manpower available, vocational courses should be introduced in Indian higher education system. Present system thus producing scores of unemployed graduates and causing huge shortage of skilled workers and in the long run this might hamper our economic growth. To give importance on vocational education All India Council of Technical Education (AICTE) is working on integrating formal education with vocational education. If this is implemented practically then it will be very much productive and the student would be able to choose career in school level and continue it up to the higher education level. Thus higher vocational education needs to be restructured with the dual property of both higher education and vocational education. Higher vocational education is to cultivate technology-applied talents who master necessary theoretical knowledge, possess stronger abilities in practice and can adapt to the front needs in production, construction, management and service.[10]

1.3 Vocational Education: The Concept, Meaning and Definition

Occupational knowledge and manual skill have, in one form or another, been transmitted from man to man and from generation to generation. This transmitting

process, whatever its form of organization, has developed into the educational process that has now given rise to expansions and developments of what may be termed as vocational education. The concept of vocational education has indeed started from the time when parents taught their children the skills necessary for survival in the haunting and gathering bands of primitive people. Vocational education is in fact a skill development education and aims to develop a desired level of skills and knowledge. It thus provides a pathway to employment. Vocational training provides an opportunity for students to become independent and at the same time, build a productive community. Vocational education refers to a kind of education which prepares one for a job, assist one to hold a job, or advance on a job. In India the concept of Vocationalization was initiated by the Kothari Commission for bringing education into close contact with productivity. According to the Commission, this programmed would give a strong vocational basis to Secondary Education and increase the emphasis on agricultural and technological education at the University level. Kothari Commission (1964-66) mentioned: "We visualize the future trend of school education towards a fruitful mingling of general and vocational education- general education containing some elements of pre-vocational and technical education and vocational education in turn, having an element of general education".[11]

The term vocational education is a general one and should not be used without some indication of the field to which reference is being made, for example- agricultural vocational education, trade and industrial vocational education .[12] In other words it can also be stated that vocational education centers around the idea of manual work and ability to work with hands rather than mind.

The concept of vocational education can be interpreted as the education for production, in which vocational education is contrasted with liberal education. Vocational education is designed to make a person an efficient producer and liberal education is designed to make a person an efficient consumer. In a strict utilitarian sense, "vocational education or training implies a series of organized and controlled learning experiences used to educate or train any person or persons for a given employment".[13] Several concepts were developed to define vocational education which sometimes considers it as education in certain specified subjects as a supplementary

component of general education, sometimes considers it as education for productive purposes or socially useful productive work and so on. It enables a person to earn livelihood and supports to arrange the resources for fulfilling individual needs. Whatever it may be, the basic objective of all these different concepts is to impart the desired skills among the aspirants to make them fit for different level of works. The meaning of such concept is that as the individual seeks and finds new and improved ways of working through education or training, he/she increases his/her vocational efficiency.

Vocational education becomes that part of the total experience whereby man learns to carry on a gainful occupation proficiently and efficiently. Vocational education thus refers to both organized and unorganized methods of transmitting knowledge, skills and competencies. Vocational education has for many decades assumed a key role in meeting the nation's demand for skilled workers. Historically, vocational education has been defined as those activities supported by the federal vocational education acts that provide for the development of the knowledge, skills, and attitudes needed in occupations requiring less than a baccalaureate degree. However, in a broader or generic sense, vocational education is any training program designed to impart knowledge, skills, and attitudes to increase an individual's occupational competence.[14]

The term 'vocational education' has been defined in different ways by various national and international agencies and also by different scholars. The following are some of the important definitions.

Encyclopedia Britannia (1985) states that Vocational Education is "Instructions intended to equip persons for industrial or commercial occupation. It may be obtained either formally in trade, schools and technical secondary schools or in the job training programmes or more informally by picking up the necessary skills on the job without actual supervision".

The Southern States Work Conference held at Daytona Beach, Florida, during the summers of 1944 and 1945 formulated the definition for vocational education as "In its simplest terms Vocational education is that aspect of education that aims at the development of human abilities in terms of knowledge, skills and understandings so that

the individual may serve happily and efficiently in carrying on the activities in the vocational pursuits of his choice".

The Committee on Research and Publications of the American Vocational Association in 1954 described that vocational education is education designed to develop skills, abilities, understandings, attitudes, work habits and appreciations encompassing knowledge and information needed by workers to enter and make progress in employment on a useful and productive basis. It is an integral part of the total educational program and contributes towards the development of good citizens by developing their physical, social, civic, cultural and economic competencies. According to Kazori Bacchus, the term 'Vocationalization' refers to include in the curriculum those practical subjects, likely to generate among students some basic knowledge, skills and dispositions that may prepare them to think of becoming skilled workers or take up other manual occupations .[15]

Carter V. Good in the Dictionary of Education observed, "Vocational education is a programme of education below college grade organized to prepare the learner for entrance into a particular chosen vocation or to upgrade employed workers; including such divisions as trade and industrial education, health education, agricultural education, business education and home economics education".

John F. Thompson defines vocational education as "Vocational education is any education that provides experiences, visual stimuli, affective awareness, cognitive information, or psycho-motor skills, and that enhances the vocational development, processes of exploring, establishing and maintaining oneself in the world of work".

According to R.W. Roberts, "Vocational education programmes increase the efficiency of modern industry by making available to workers opportunities to acquire additional skills and information". In order to respond to the emerging opportunities and challenges in employment arena, vocational education emerged with priority. Imparting skills that are necessary for gainful employment, self-employment and entrepreneurship, thus became the objective of vocational education.

The National Working Group (1985) constituted by the Ministry of Education, Government of India, under the chairmanship of V.C. Kulandaiswamy insisted to have a

working definition of the term 'vocational education'. Traditionally 'vocational education' has been understood as education designed to prepare skilled personnel at lower levels of qualification for one or more groups of occupations, trade or jobs. Vocational education has been usually provided at upper secondary level and includes:

i. general education
ii. Practical training for the development of skills required for the occupation;
iii. related theory

The proportion of these compounds may vary considerably but the emphasis is usually on practical training. The Working Group has however used the term vocational education in a much broader sense to cover education and skill development at all levels from post-primary to tertiary education, both through formal and non-formal programmes.[16]

So far the discussion made about vocational education elaborates the conceptual meaning and broad objectives associated with it. Apart from these Evans and Herr[17] mentioned about three basic objectives of vocational education. They are-

i. Meeting society's needs for workers.
ii. Increasing the options available to each student.
iii. Serving as a motivating force to enhance all types of learning.

1.4 UGC Initiatives on Vocational Education

What usually observed is that professionally qualified graduates with deep knowledge about core subjects and with proper expertise in concerned skills have more potential job opportunities than others. Apart from that globalization of education has expanded the job market and to exploit the advantages of this expansion one really has to acquire adequate knowledge and appropriate skills. These facts lead University Grants Commission (UGC) to initiate effective measures through introduction of vocational education courses to eliminate the existing mismatch between knowledge imparted and skills required in the job field. In fact the concept of introducing Vocational education at senior secondary level was part of the attempts to restructure

India's education system, with the objective of converting senior secondary level education into terminal stage of education.

Of course, as stated above the level of success of Vocationalization of senior secondary education is discouraging for various reasons. Mismatch between skills training and knowledge imparted, inability of government agencies to create sufficient number of jobs as per the demand, shortage of trained faculties are some of the reasons behind the failure.

These prompted University Grants Commission to initiate some programmes during V^{th} Five year plan, to impart knowledge based skills among the students undertaking vocational education courses in general degree colleges. Apart from this the National Policy on Education (NPE) (1986, revised on 1992) of Ministry of Human Resource Development, Government of India and the subsequent plans drawn thereof emphasized the mere necessity of application oriented courses for college and university students. Later on to review the scenario of implementation at degree level and hence to draft out possible recommendations, a core committee was constructed by UGC under the chairmanship of Dr. T.N. Dhar. The committee proposed that there is no necessity of changing the existing three year degree course and a student should take at least one vocational subject during their undergraduate study.[18]

Following the recommendations from T.N. Dhar committee, University Grants Commission adopted the scheme of vocational education in the academic year 1994-95 i.e. during VIII Five year plan to modify existing Indian education system through Vocationalization of education at the degree level. Under the scheme UGC provide funds to the 3383 colleges and 43 universities for introducing vocational courses in four discipline areas (i) Arts, Humanities and Social Science (ii) Commerce, Economics and Managements (iii) Science and (iv) Engineering and Technology.[19]

Apparently the scheme implemented with the objectives like filling up of intermediate job positions created by new academic policy, ensure the production of sufficient skilled person to meet the demand in various fields, enhancement of students capability to establish their own enterprises with outsourcing financial support, assurance of vertical mobility in addition to horizontal, enhancement of scope of employability and

to encourage employment in the rural and agro based sectors so that rural to urban migration could be checked. Additional emphasis was given on providing vocational education to women as per the demand in the job sector. Different courses were offered in various disciplines including Arts & Humanities, Commerce, Science and Engineering & Technology.

Under this programme UGC has supported as many as 143 career oriented courses in Arts and social science stream, 133 courses in Science faculty and 78 courses in commerce stream.[20] A student can simultaneously continue such courses along with their undergraduate course and a college or a university can opt for a maximum of three such courses. The maximum duration of such courses is of three years duration and usually a student completing such courses receives a separate certificate from the college or university after successful completion.

Of course initially the response to these were not as per expectations because of which UGC during its X^{th} plan restructured the process of vocationalization at under graduate level with addition of some flexible system of advanced diploma programme for empowering students and enhancement of manpower. Wide range of career oriented courses introduced in all streams viz. Arts, Science and Commerce. In the last year of the X^{th} plan UGC provided special assistance to 39 Universities and 3086 colleges for introducing vocational courses which amounts total to Rs. 270 crores.[21]

Again during XI^{th} Five year Plan, UGC incorporated some value added and skill oriented courses in colleges and universities. Other additional courses having relevant for the need of rural, hilly and tribal areas with specific reference to the North Eastern Region and empowerment of women were also introduced. Of course the program for vocationalization of higher secondary education was initiated in 1976 and since then it has been implemented in 10 states and 5 Union Territories.[22]

Taking into consideration the lack of competency of university graduates to contribute effectively to development activities of the states and society, UGC during XII^{th} plan emphasized more on galvanizing general education with vocational education. XII^{th} plan insisted on the point that a holistic and creative approach should be framed for higher education with relevant flavor of vocational education. Several issues were raised

among which maintenance of high quality and competency standard by NVEQF, Vocationalization of general education according to the demand of job market, suitable credit for vocational courses in UG degree level etc. were the primary ones.[23]

UGC time to time allocates additional financial support to central and state universities for introducing and strengthening job oriented courses in Bioinformatics, Biotechnology, Health Sciences, Engineering, Management, Information Technology etc. UGC has constantly emphasising on the points that the courses offered should be of the capacity that the knowledge imparted to the student and skills learned should enable him to obtain a gainful employment in wage sector and self-employment in particular. The intention behind such motive is to reduce the pressure on institutions of higher learning for Master degree and to increase the popularity of such courses. Presently, University Grants Commission (UGC) has made some attempts to vocationalize UG courses in Arts, Commerce & Science faculties by providing funds for the so called COC (Career oriented Courses) Programmes. But its implementation is not up to the mark. For success of these career oriented courses it must be imaginative, rigorous and relevant to the local needs.UGC also gives liberty to the respective college or university to identify their own 'need based' career oriented courses.

Based on the MHRD's decision, the UGC has recently launched (from the session 2014) a scheme on skills development based higher education as part of college/University education, leading to Bachelor of vocation (B.Voc) Degree with multiple exits and Community colleges under NVSQF/NSQF. This scheme would enable the graduates completing B.Voc to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and acquiring appropriate knowledge. To promote the programme the UGC has planned to provide additional grants to colleges apart from the allocation under the 12th Five year plan general development assistance.[24]

1.5 Initiatives at Ministries level on Vocational Education

Ministries of Human Resource Development and Ministry of Labour and Employment (MHRD & MoLE) are primarily active in decision making for vocational education and training in india. In fact at present there are at least 17 different ministries/departments under the government of India that are involved in vocational education and training programmes which include more than 2.8 million students. MHRD is further assisted by All Indian Council for Technical Education (AICTE) and National Council of Educational Research and Training (NCERT). These ministries initiated many action plan and made many proposals to accelerate the process of vocationalization. AICTE prepares curriculum and impart vocational education through polytechnic while NCERT imparts vocational education through open school, at school level. Millions of people are receiving vocational education and training at various technical and industrial training institutes under the active leadership of these two ministries.

Both the ministries are developing separate frameworks called National Vocational Qualification Framework (NVQF) and National Vocational Educational Qualification Framework (NVEQF) for curriculum design, standardization and certification. The NVEQF is expected to bring changes in vocational education system of India by providing multiple pathways both within the vocational education and between general and vocational education by linking one level of learning to another higher level of learning. The National Policy on Skill Development (NPSD), which is a prime minister's initiatives, is targeting 500 million people to provide skills training by 2022.[25] A Public Private Partnership (PPP) has been setup to provide funding, facilitation through 21 Sector Skill Councils (SSCs). All these policies are framed at the Centre and implemented at State government/department levels. AICTE is working on integrating formal education with vocational education. If this is implemented practically then it will be very much productive and the student would be able to choose career in school level and continue it up to the higher education level.

In this regard it is also worth mentioning that centrally sponsored scheme of "Vocationalization of Higher Secondary Education" now has been revised to

"Vocationalization of Secondary and Higher Secondary Education". The scheme already been subsumed under the Rastriya Madhyamik Siksha Abhiyan Scheme from 1st April 2013 onwards.[26]

In spite of all these efforts the scheme of vocationalisation of education has not yet been picked up effectively, especially in North Eastern states including Assam. One major reason behind this is undermining of the term Vocational education which is unable to attract sufficient respect in line with general education. But gradually encouraged by the government initiatives nowadays different vocational courses are being introduced in many degree colleges of Assam and effective implementation of the same will certainly improve the unemployment scenario in Assam.

India requires technical and skilled manpower particularly in view of the liberalization of the economy in recent years. There are immense opportunities for trained manpower in a developing economy like India's, especially in the agriculture, manufacturing and social service sector. A properly planned and effectively implemented vocational education system will enable the unemployed youth to take up some useful employment. Our education system should try to prepare the youths with adequate knowledge and skills to face the challenges of 21st century.

1.6 Vocational education and General education

The term vocational education is used to mean the education that should prepare persons to work more efficiently. Efficient vocational education implies specific education and training in the usable knowledge, skills and competencies for the occupation in question. On the other hand the term general education is used to mean the education that should prepare persons to live more intelligently as citizens and to understand and enjoy life. To that sense, general education implies the knowledge, skills and attitudes needed by persons for successful and purposeful living.

In present situation, general education and vocational education are major divisions of the total education process. Each of them is of equal importance, and both of them are necessary in the education of the workers. So both general and vocational

educators should, therefore, strive to achieve the proper co-ordination of these two divisions of education within the total education process. The relation between vocational education and general education is better understood with the Report on Vocational Training in India by A. Abbot and S.H. Wood. They observed that "Vocational education is emphatically not on a lower plan than other forms of education. It is complementary to them." Their argument is that "there is nothing ignoble in this work, and the task of preparing pupils to do it energetically and with goodwill cannot be regarded as intrinsically less worthy than the study of great literature".[27]

According to B.D. Bhatia, vocational education is differentiated from general education. He states that liberal education or general education advocates a curriculum, which includes a wide range of subjects as opposed to the study of one or two branches of learning. It implies a training that prepares individuals for every future occupation rather than a specific one. But vocational education, with its emphasis on practical works and arts 'can unlock the finer energies of the learner'. He further explains that vocational education liberalizes the mind by setting it free for greater and more creative activities. It awakens the constructive impulses and curiosity of the learner. Though there is difference between general education and vocational education, both are interdependent and are related.[28] Again for Roy. W. Roberts, "Vocational education is designed to make a person an efficient producer, and liberal education is designed to make a person an efficient consumer".[29]

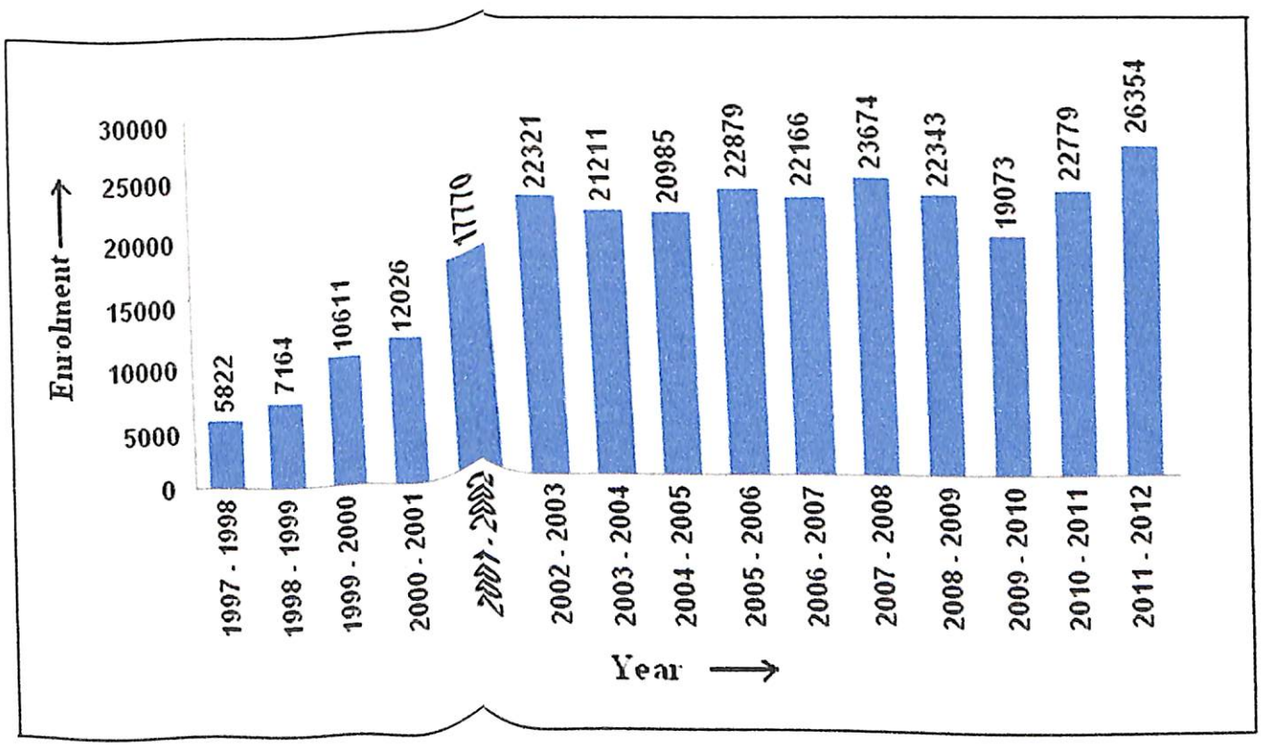
1.7 Vocational Education in India

In India, vocational education was introduced even during Upanishad period and abundant elements and indications were there to relate material welfare and importance of vocational and professional education in life. There has been loud cry from days of the Wood's Despatch (1854), for the introduction of vocational education endorsed subsequently by several commissions and committees of both British and Independent India. The concept of vocational education was introduced in India just after independence and since then number of reforms has been implemented to improve

the production of required skilled persons for various fields of work. Development of vocational education in India after independence is marked for its emphasis by the various commissions especially set up for its promotion such as- Radhakrishnan Commission of 1948, Mudaliar commission of 1952, Secondary Education commission of 1953. The Vocationalization of education was very strongly recommended by the Kothari Commission of 1964-66 and after that Adiseshiah Committee (Learning to do 1978), National Policy on Education, 1986 and Programme of Action, 1992 etc. The National policy on Education states that "The introduction of systematic, well-planned and rigorously implemented programme of vocational education is crucial in the proposed educational reorganization..... vocational education will be a distinct stream intended to prepare students for identified vocations spanning several areas of activity".[30] The basic objective was to improve the quality of human life and education through Vocationalization of education, as it empowers and enhances basic knowledge, skills, abilities, aptitudes, interests and dispositions. Thus the concept of vocational education received due attention but has always needed a renewed thrust keeping in tune with the changing labour market trends. Till today the popularity of vocational education system among the Indian students is quite discouraging because of many reasons. Vocational education in India refers to the courses offered at secondary level under the scheme 'Vocationalization of Secondary Education'. The vocational education program was initiated in 1976-77 under the programme of Vocationalization of Higher Secondary Education in general education institutions. The National Working Group on Vocationalization of Education (Kulandaiswamy committee) formed in 1985 after reviewing the Vocational Education Programme in the country, prepared some guidelines for expansion of the programme.[31] Following its recommendations, Centrally Sponsored Scheme (CSS) on Vocationalization of Secondary Education were developed which was implemented from 1988. The recommendations speculated on enhancement of individual employability and production of skilled manpower based on market demand and thus appeared as an alternative for those pursuing higher education without particular interest or purpose. National Institute of Open Schooling (NIOS) was set up by Ministry of Human Resource Development (MHRD) in 1989 as an autonomous organization for providing relevant continuing education at school level, up to pre-degree level through Open and Distance Learning (ODL) mode. Its activity was

basically started in 1992 and its operational area was also extended to offer vocational education at post senior secondary level and in other areas like Agriculture, Engineering & Technology, Health & Paramedical, Home Science and Hospitality, Computer and Informational Technology etc. NIOS also functions with the broad objective of fulfilling the need of skilled manpower for the growing sectors of the economy, both organized and unorganized. It functions through a network of Accredited Vocational Institutes (AVI) for imparting skill based training to its learner. Up to 2012, the number of AVIs was 1538.[32] Enrolment at various vocational courses, for the period from 1997-1998 to 2011-2012 are depicted in Figure - 1. From figure - 1 it can be ascertained that MHRD's initiatives to attract student's response for vocational courses indeed attained a state of stagnation and rather it is declining since 2007-08 till 2010. Beyond 2010 some significant improvement was noticed in the enrolment prospect which is of course a positive observation.

Figure - 1 Year wise enrolment of students in vocational streams presented from NIOS Annual report 2011 - 2012



Reason for the declination during 2007 to 2010 was mainly due to lake of proper emphasis on vocational education as well as ill designed courses. Without proper

restructuring enrolment ratio in vocational education is unlikely to improve. Government initiated different policies to restructure the education system so that more number of students can be attracted for vocational education and training. It was an outcome of those government initiatives which was able to counter the declining trend since 2010 and from 2010 to 2012 a substantial increase in the enrolment ratio was observed in figure - 1. Projected enrolment in vocational education during XIth plan is shown in Table-1 along with the projected enrolment in General Education. Data presented in the table are collected from UGC Report published in the year 2008 on 'Higher Education in India, Issues related to Expansion, Inclusiveness, Quality and Finance'. [33]

Table - 1 Projected enrolment (in thousands) in General education and vocational education during 11th Plan

Year	Projected enrolment	
	In General Education	In Vocational Education
2007-2008	10893	1292
2008-2009	11387	1320
2009-2010	11880	1349
2010-2011	12372	1379
2011-2012	12865	1410

Source: UGC Report 2008 computed using SES data

Ministry of Human Resources Development (MHRD) monitors the vocational education programme and All-India Council for Vocational Education (AICVE), working under MHRD, manifests the planning and prepares guideline for coordinating the program at the national level. At the state level, State Council for Vocational Education (SCVE) performs analogous functions. Usually The Pandit Sunderlal Sarma Central Institute for Vocational Education (PSSCIVE) developed many such courses,

and also developed course materials for some of these courses. Courses offered in various disciplines at undergraduate level are given below:

- Agriculture (for example: veterinary pharmacist/technician, watershed management)
- Business and commerce (for example: taxation practices, stenography)
- Humanities (for example: classical dance, entrepreneurship)
- Engineering and technology (for example: lineman, cost effective building technology)
- Home science (for example: textile design, gerontology)
- Health and para-medical skills (for example: x-ray technician, health/sanitary inspector)

It has been estimated that by 2016 roughly there will be 500 million people having less than five years of schooling and another 300 million people will not complete high school.[34] This reflects that a huge section of the population will not have minimum level of education. Definitely it would not be possible to create employment opportunity for those people. NSS estimate carried out during 2005 indicated that there were almost 57% unemployed in rural areas and 65% in urban areas. For rural areas total skilled labour force is only 8.3% while the same in urban area is 15.6%.[35]

MHRD through AICTE has initiated National Vocational Education Qualification Framework (NVEQF) which provides seven level modulated approaches for intensive Vocationalization of education from class IX onwards up to graduation. MHRD has also funded a good number of schools and colleges for vocationalization of education, and Assam being a part of India cannot be an exception. Apart from that Assam has been selected by Central government along with other two states Haryana and West-Bengal for implementation of NVEQF at High School and Higher Secondary level. The students' response for such courses is still not good despite the fact that these courses have sufficient potential to create employment opportunities.

In India, the vocationalisation of education at +2 stage is not catching up as fast as envisaged by the Kothari Commission because very little attention seems to have been paid by the state administrations in promoting and organizing vocational courses on right lines. The curricula are not designed to make the courses practice-oriented

keeping in view the needs of employment market. Even the course structures framed are not flexible enough to allow the students to prepare for entrance to first degree classes in colleges or universities or to polytechnics .[36] Vocational education aims at the production of 'specific human capital' with an advantage of imbibing specific job relevant skills that can make the students more readily suitable for a given job or a self-employment and would make them thus more productive .[37]

1.8 Vocational Education in Assam

The main objective of introduction of vocational education programme in India is to prepare skilled and middle level manpower for the growing sector of economy, to reduce overcrowding in the general and higher education system, and to prepare students for self-reliance and gainful employment. Apart from that vocational education reduces the mismatch between demand and supply of manpower and link education with productivity, economic development and individual's prosperity.

The scheme of vocationalisation of secondary education was introduced in Assam in 1989-1990 and since then it is propagating at various levels under complete guidance of the government. In Assam vocational education and training programmes are maintained by Directorate of Technical Education and also by private sector component and NGOs. But till now the response of the students towards these courses are not encouraging. Vocational education programme (VEP) in Assam is not satisfactory. Due to the poor growth of industries in the state, pass outs are reportedly having a tough time to get jobs. Again a student who has passed the 10+2 level in any vocational stream in Assam does not have the opportunity to pursue further studies. Considered from this point of view vocational education has been in a state of collapse in the state. Apart from that the general acceptance of vocational course is less in the society or community, as students generally prefer higher education in academic or professional courses expecting a Government job in future. Inadequate organizational structure, resources and facilities, vertical and horizontal linkages are some of the important constraints responsible for the unsatisfactory progress of VEP in Assam at +2 level.

The Government of Assam took out some pilot projects in association with India Can and Pearson Education to roll out vocational education in government schools. This Public Private Partnership (PPP) Project is aimed to introduce National Vocational Education Qualifications Framework (NVEQF), a national program and to find out the standards and qualifications for skills trainings. Curriculum are designed for standard IX students and emphasized on skills that helps student better manage the challenges in the work field as well as efficiently helps in personality development, equip them with the capacity to spoke English well. Well-equipped schools are chosen for the courses. Projects are operational till now and have been able to acquire better response from students, school principals and parents which is indicated in the feedback collected. Of course since the timing for the project are fixed after school hour therefore sometimes maintaining students interest in classes is a challenging task. Such type of schemes will help young people to develop exciting career in multiple fields in our expanding economy and that in turn will help the growth of the state.[38]

National Vocational Education Qualification Framework (NVEQF) is introduced for proper integration of general academic education, vocational education and vocational training. Government of Assam is keen to implement NVEQF so that youths of Assam become well equipped with educational and technical skills. For that purpose government has drafted out special guidelines for implementation of NVEQF in secondary schools of the state. The Department of Education (Secondary), Government of Assam will be the Nodal Department for NVEQF implementation in the secondary schools of Assam and will involve in preparation of budget, disbursement of fund and will frame the policy matters as and when needed. Rashtriya Madhyamik Sikhsa Abhijan (RMSA), Assam shall be the Implementing agency for the NVEQF scheme. RMSA may partner with a private agency for implementation of this NVEQF programme which will act as per the guidelines framed for implementation. Arrangement of appropriate infrastructure for technical courses is also an added responsibility of RMSA. Board of Secondary Education (SEBA) and Assam Higher Secondary Education Council (AHSEC) also plays a significant role in implementation of NVEQF in coordination with RMSA.[39]

Apart from these initiatives number of colleges under direct initiatives of University Grants Commission has introduced various vocational education courses in

their curriculum. Initially although these courses attracted moderate response, but with repeated restructuring of course structures and improvement of infrastructure more number of students are attracted for such courses. In a recent development, Assam Government has taken up a new project to establish five community colleges. This initiative has a strong vision to generate 500 million skilled people by 2020 through quality teaching and vocational education. This kind of initiatives expected to foster economic development of the country through inclusive growth. During this pilot project necessary skill development program will be introduced through vocational education.[40] These courses are able to create ample opportunities for the young job aspirants either to find out a job or to be self-employed. UGC under the purview of the new scheme has approved Bachelor of vocation (B.Voc) degree to some of the general degree colleges of Assam from the session 2014.[41]

1.9 Preparation of Vocational Teacher

Lack of adequate number of competent teachers is the most challenging problems for successful implementation of vocational education. Teacher's quality greatly determines the level of success of vocational education. Preparation of vocational teachers is also considered as a difficult job because of many reasons. Vocational teachers must design and teach programmes that fit the special conditions under which they operate. They have greater individual responsibility in deciding what to teach, when to teach and what materials to use in the teaching process. The vocational teacher has to convert the classroom climate in such a manner that a competitive, co-operative and a mutually helping atmosphere prevails. While evaluating skills, the vocational teacher must take into account the various types of component skills involved. During the instructional process, these component skills will have to be developed in proper sequence.

The importance of the preparation of vocational teachers has been recognized since the beginning of Federal support for vocational education. The Commission on National Aid to Vocational Education, appointed in 1914, reported "that the development of vocational education along right lines will depend largely upon the

ability to secure and retain well-trained teachers who have a thorough and practical knowledge of subjects."[42] Ways and means need to be developed whereby vocational and technical teachers will have the opportunity to secure appropriate experience and training. In some more advanced countries the national policies for professional development of teachers focus on modular and distance/open learning units of study, accreditation of staff development programmes, computer-based learning, mentorship and integrated learning.[43] Proper coordination between academia and industry create opportunities for present and future teachers to inculcate practical experience which otherwise will enrich them with appropriate knowledge and skills for their teaching.

In developing countries, there is a general shortage of suitably qualified staff, many teachers lack relevant industrial or commercial experience. These countries also suffer from a chronic shortage of adequately trained technical manpower and fail to attract competent and experienced specialists for their educational establishments, due to the low financial incentives in the education sector. All countries recognize the need of qualified teaching staff, possessing adequate academic and pedagogical qualifications, coupled with practical experience for proper teaching of vocational courses. In Bangladesh, The Vocational Teachers Training Institute provides training for the teachers in the vocational stream and for workshop instructors. In Pakistan the Ministry of Education has established a National Technical Teachers Training College in Islamabad providing comprehensive teacher training and upgrading programmes, producing teaching/learning resources and assisting the government in the planning and management of technical and vocational programmes .[44] The vocational teacher besides being an effective communicator in a classroom, he/she is also required to undertake many management functions, like arranging collaboration with industry and organizations, guiding students for placement, seeking community involvement, ensuring optimum utilization of available resources, installation and storage of tools and arranging materials and equipment.

Regarding the preparation of vocational teacher, National documents and Reports have stated various suggestions. The National document "Higher Secondary Education and its Vocationalisation" recommended that teachers for the vocational subjects should possess basic vocational qualifications and expertise.[45] The Centrally

Sponsored Scheme (CSS) of Vocationalisation of Secondary Education launched in 1988 maintained that vocational courses are to be conducted "with the help of full-time as well as part-time teachers." [46] The CSS further suggested measures for training of vocational teachers. The Programme of Action (1992) categorically declares that "It is the teacher who interprets and implements the educational policy in actual classroom situation and as such he/she is the most crucial input. Presently, pre-service training for vocational teachers is practically non-existent; and in-service training is not adequate. Competent vocational teachers are often not available in desired numbers. Teacher training, therefore, requires priority attention".[47]

So the vocational teacher, apart from occupation- specific competencies, he/she also require a set of occupation neutral general competencies to properly discharge their multi-faceted duties and responsibilities. In India, The Pandit Sunderlal Sarma Central Institute of Vocational Education (PSSCIVE), has developed in consultation with national level experts, a well-structured pre-service teacher training curriculam for vocational teachers, which would lead to the degree of B. Voc. Ed. Regarding in-service training programmes, every states have to be organized on a regular basis on the basis of guidelines developed by the PSSCIVE.[48] State Institute of Vocational Education should be the nodal agencies at the state level for coordinating the in-service teacher training programmes. Thus, vocational teacher preparation has to be seen in a holistic perspective. It will encompass pre-service courses for fresher's, short time training programmes in content and pedagogy in plant training for in-service teachers, package training programme for part-timers and periodical refresher courses in specialized institutions on a regular basis.

1.10 Vocational Guidance

Guidance is referred to as a process of assisting or helping the students by properly trained teachers, career masters or special guidance personnel in planning their own future wisely and developing their potentialities to the maximum for them to solve their immediate or future problems and to lead a successful and social life .[49] If we try to analyze the problems faced by the students, we may categorize them into three heads

viz. educational problems, vocational problems and personal and psychological problems. Therefore students need proper guidance in these three areas. Guidance in which students are assisted to choose a better career and to solve their vocational problems is called vocational guidance. International Labour Conference in 1949 described vocational guidance as "assistance given to an individual in solving problems related to occupational choice and progress with due regard for the individual's characteristics and their relation to occupational opportunity".[50]

Vocational guidance assists students to acquire knowledge, attitudes, strategies, and skills; help one to develop life and career plans. Vocational guidance should empower students beyond the narrow confines of academic grades. According to the principles adopted by the National Vocational Guidance Association in 1921, revised in 1924, in 1930, and again in 1937, vocational guidance is the process of assisting the individual to choose an occupation, prepare for it, enter upon and progress in it. It is concerned primarily with helping individuals make decisions and choices involved in planning a future and building a career- decisions and choices necessary in effecting satisfactory vocational adjustments.[51] Vocational guidance involves complete and comprehensive knowledge of each pupil, nature of jobs, achievement and job satisfaction, relevant data about vocational opportunities, type of training needed, opportunities of advancing in the field. Vocational guidance involves five main phases. They are- a) the study of occupational fields b) exploratory experiences c) vocational preparation d) placement and e) job adjustment.[52] Therefore, vocational education must be recognized as a phase of vocational guidance.

Vocational guidance at college level enhances students' awareness about the expanded field of works and about the unlimited opportunities available to them for their earning so that they can engage themselves in socially beneficial works and other creative works based on private enterprise. This also makes them more self-reliant. Super in 1949 in his words says, "Vocational guidance is, therefore, a dual process of helping the individual to understand and accept himself, and of helping him to understand and adjust to society; it is both psychological and socio-economic". Thus vocational guidance is not only achievement but also adjustment.[53]

1.10.1 Relation of Vocational Guidance to Vocational Education

Vocational education means preparation for a vocation after it has been chosen in some manner, wisely or unwisely. But vocational guidance involves assistance in choosing both the vocation and a plan of preparation for it before the preparation begins. Vocational guidance serves to bring the individual into vocational preparation under the most favorable conditions possible. Vocational guidance will not only be incomplete but a meaningless attempt, if it is not followed by an adequate programme of vocational education. Vocational education without vocational guidance is much like trying to make an automobile crankshaft out of any bar of metal that comes handy without first determining whether it is suitable for the purpose. Vocational guidance without vocational education is like selecting with great care a bar of steel suitable for a crankshaft without providing proper facilities for subjecting it to the processes of forming, tempering and gauging necessary for the purpose. Both vocational guidance and vocational education are necessary to a successful transfer from school to working life .[54] The relationship of vocational guidance to the efficiency of work stimulated vocational educators to acquire some proficiency in vocational guidance to enable them to counsel more intelligently with vocational students.

1.11 Vocational Education for Disabled

There are more than 100 million disabled people in India out of which only about 5% are receiving basic education, which is a very pathetic situation for the country. The statistics is still worse when we talk about vocational training for such people. Less than 1% people are able to get access to such type of education. Although arrangement of vocational education to People with Disabilities (PWDs) might improve their livelihood and will enable them to contribute to society, but providing vocational education to them is not an easy task. The process can be accomplished with the help of highly devoted, committed and trained teachers.[55] Framing of systematic guidelines for such peoples will help to generate an organized approach to achieve such

training from school to vocational training and employment. Thousands of such people are currently receiving such training at vocational rehabilitation centers and non-government organization in India. These institutions provide either pre vocational or vocational training of non-remunerative nature. Of course the National Policy on Education has laid emphasis on using the technical training facilities for improvement of PWDs long back in 1986. PWD act 1995 has initiated the process of integration of PWDs into the main stream of life and the consequence scheme launched by MHRD, Government of India for upgrading polytechnics to include PWDs in technical and vocational education.

Vocational education for PWDs shall be based on four pillars: [56] They are-

Ability assessment
Basic vocational training
Skill development
Ergonomics

The fundamental objective behind all these is to ensure economic independence and decent social life to PWDs. Education system of PWDs can be academic oriented but it should be linked and related to the future employment prospects. This implies that vocational system of PWDs should mainly focus on skill development aspect and attainment of practical training to prepare them for world of works.

Several initiatives have been taken by government agencies such as The Department of Higher Education, University Grants Commission (UGC) and All India Council for Technical Education to promote higher/professional education among the persons with disabilities. UGC has integrated schemes such as Teacher Preparation in Special Education (TEPSE) and Higher Education for Persons with Disabilities (HEPSN) to provide support for them in education. All India Council for Technical Education (AICTE) also initiated scheme for tuition fee waiver for physically challenged. Further to this UGC has issued several guidelines to the universities including 3 percent reservation for PWDs, relaxation of marks etc. Schemes were suggested to upgrade existing polytechnics for integrating physically disabled in the mainstream of Technical and Vocational Education and 50 existing Polytechnics in

different locations of the country have been selected for the purpose. The Scheme is targeted to benefit around 1250 disabled students every year in formal diploma level courses and 5000 students in short duration technical / vocational courses.[57]

1.12 Vocational Education through Distance Mode

Globalization and the increased growth of knowledge economy has increased the need of quality skilled manpower having adequate in-hand knowledge and work experience and vocational education can be described as an useful tool for producing skilled personnel. Therefore, the biggest challenge is to design and implement vocational education programme in such a manner that is socially relevant, meaningful and provide self-employment. Curriculum must be restructured to keep track with the rapid and continuous changes in technology or situations. However a flexible and open system of education in terms of age, course programme, time, place and pace is required for success of such programmes. In many cases distance education can be the most suitable and successful means of education.

Distance and open learning has emerged as a most viable option in higher education sector and vocational education at tertiary level through distance education has become a focus of government, policy planners, educational advisors, as well as for mainstream educators. The Technical and Vocational Distance Education (TVDE) has all the requirements and potential to meet the different problems related to vocational education. TVDE has consistently used a wide range of teaching learning strategies, delivery media and interaction technologies beyond those of traditional face to face institutions. It is also perceived as cost effective method of reaching a wide variety of target groups .[58] The National Institute of Open Schooling (NIOS) started offering vocational education programme through open and distance learning mode in 1992. In recent years distance education institutions have been able to create a space for themselves in vocational education as they cater to a different clientele. A major component of vocational education curriculum is hands-on training and practical. Recently, Open and Distance Learning (ODL) has become more innovative and has found ways to blend hands-on training and practical with theoretical knowledge.

Compulsory participation in short duration intensive contact programme or practical classes spread-out over the weekends has become an essential feature of vocational courses offered through ODL.[59] The inadequacy of conventional education system in meeting the demand for skilled personnel has further accentuated the importance of ODL in vocational education.

In Assam we have two dual mode universities, one state open university and other is IGNOU (Indira Gandhi National Open University) beside some private institutions. With the establishment of IGNOU Regional Centre at Shillong, Distance education took a formal shape. In Assam, IGNOU established its first Regional Centre at Guwahati in 1996. Starting off with a small number of students, IGNOU has become one of the most sought destinations for the distance learners. The Guwahati Regional Centre of IGNOU has launched a short term based competency development programme for the youth section of the society. Apart from that IGNOU has introduced some need based courses like- mobile repairing, soft skill development programme, interior design, handmade paper item etc. for the benefit of the society.

1.13 Significance of the Study

Acceptance of vocational education has a marked influence on the economic and social growth of a country. Especially in countries like India where the educated youngsters mostly failed to arrange one job for their livelihood, creation of enough facilities for technological learning along with their general education, would definitely be a great relief for them. Because that will enhance their capability to face the challenges in the world of works. Vocational education can thus be considered as a valuable option for such approaches. The growing economic crisis and the increasing threat of unemployment remind us about the dire necessity of the implementation of such programmes. Throughout the world vocational education and training is perceived 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 globalization. Every year we churn out millions of our graduates without any specific skills required by the market and thus adding fuel to the burning

problem of unemployment. One of the significant steps to improve the situation is that vocational training programs should be promoted in a big way, which also signifies the importance of the study. The findings of the study will give us a precise idea about the present status of the vocational education courses continuing in general degree colleges under Gauhati University. From the results one can clearly understand how far the objectives of the courses have been full filled and what are the major difficulties faced by the respective colleges in implementing the courses. Study carried out also incorporates the faculty status of the existing vocational education courses continuing in the degree colleges. One can evaluate whether the colleges are having appropriately trained and experienced teachers for successful implementation of the courses and whether the courses offered are succeeding in attaining increasing students interest and teachers motivation as well. The study will also help the policy makers and the colleges to adopt appropriate strategy for effective implementation of the vocational education courses in the general degree colleges under Gauhati University.

Unemployment is more often the result of a lack of proper education and skill acquisition rather than of a shortage of job opportunities. As discussed in foregoing section our education system can produce educated boys and girls with fewer skills required for job market. Vocational education provides the diversity and practicability that our education system lacks so much. An efficient work force is the country's best resource and vocational education is the best guarantee to workers that they will always be qualified for a job. The need for vocational education for young people today is probably greater than it has ever been in the history of our country.

According to a recent study conducted by the Associated Chambers of Commerce and Industry of India (ASSOCHAM), there will be a deficit of 40 million working professionals by the year 2020 and about 41% of the employers are faced with the difficulty of filling positions because of the dearth of suitable talent and skill in their industry .[60] This fact indicates that if India wants to make up this huge deficit of working professionals, Vocationalization of general education system with careful introduction of vocational education courses and training will be must.

Vocational education aims at helping an individual in finding a rewarding place in the world of works and enables him/her to advance economically and socially. The

competency of an individual can significantly be enhanced by vocational education through release and exercise of the creative impulses within them. It is also an effective tool for checking imbalances in the world of works. Vocational education is thus a contributor towards the growth of local, state and national level economies and can boost up the national wealth and national progress.

In order to respond to the emerging opportunities and challenges in employment arena, extensive research work in the field of vocational education has to be carried out with priority. Imparting skills that are necessary for gainful employment, self-employment and entrepreneurship, thus became the key objective of vocational education. The introduction of systematic, well planned and rigorously implemented programmes of vocational education is crucial in the Indian educational reorganization. The elements of vocational courses are meant to enhance individual employability, to reduce the mismatch between education and work, and to provide an alternative for those pursuing higher education without particular interest or purpose.

The technical and vocational education should also include appropriate societal values and attitudes, new technologies, and local and regional concerns. Emphasis should be given to the changing demands of the labour market and the consequent changes. In order to accommodate with the new demands of the society, it is necessary to reshape the existing policies of the technical and vocational education.[61]

From the reviews analyzed by the investigator, it has been found that lot of studies were carried out on Vocational education in India and abroad. In case of India, most of the studies were carried out on Vocationalization of education at +2 stage and on other aspects of vocational education at higher secondary level. Very few studies were found on vocational education at undergraduate level in India. Thimmaiah et al. (1982) studied the problems and prospects of vocational education in Karnataka state. Vocational interest of arts, science & commerce students were investigated by Kureshi 1990 & Reddy et al. (2011). Prakash & Gupta (2002) studied about restructuring the vocational courses for ITI graduates. In one of the significant study, Institute of Applied Manpower Research (IAMR) (2001) studied about the evaluation of the vocational education scheme at degree level and investigator has found this study somewhat similar with the present study.

It has been observed from the reviews of related literature that very few studies were carried out in Assam. In this regard the investigator found Barooah (1986) studied the status of polytechnic vocational education in Assam during the period 1948 - 1978. Bhagabati (2006) investigated on vocational education among ST / SC in ITIs of Assam. Lahkar & Kakati (2008) carried out research on Vocationalization of secondary education. Lama (2012) studied on vocational education through distance mode. Investigator did not find any studies carried out on vocational education at general degree colleges under Gauhati University. Since vocational education is considered as the key parameter for initiating the growth of local, state and national level economy therefore investigator has found it significant to study about different aspects of vocational education courses continuing in general degree colleges under Gauhati university. The basic objective of the study is to contribute towards human resource development. The investigator has selected the present problem with the vision of qualitative evaluation of pros and cons associated with various vocational education courses continuing in the general degree colleges under Gauhati University.

1.14 Statement of the Problem

Realizing the dire necessity of quality research in the field of vocational education the present problem has been stated as- **"Vocational Education Courses in the General Degree Colleges under Gauhati University: An Evaluative Study".**

The study evaluates the status of various vocational courses that are introduced in the general degree colleges under Gauhati University from the view point of implementation, students perception, infrastructural facilities, availability of equipment, teacher's opinion, student's participation, satisfaction of the students and teachers towards these courses and also the difficulties faced by them.

1.15 Objectives of the Study

The study has been conducted with the following objectives.

1. To study the profile of the vocational education courses provided by the general degree colleges under Gauhati University.
2. To study the infrastructural facilities and equipment available for mobilization of the vocational education courses in the general degree colleges under Gauhati University
3. To study student's participation and faculty strength in various vocational education courses in the general degree colleges under Gauhati University.
4. To study the vocational choice of the students pursuing vocational education courses in the general degree colleges under Gauhati University.
5. To understand the perception of the students and the teachers towards vocational education courses in the general degree colleges under Gauhati University.
6. To study the satisfaction of the students on existing facilities, content and duration of vocational education courses in the general degree colleges under Gauhati University
7. To study the satisfaction of the teachers on the way of implementation of the vocational education courses in the general degree colleges under Gauhati University.
8. To find out the difficulties faced by students and teachers of vocational education courses in the general degree colleges under Gauhati University.

1.16 Delimitations of the Study

The study undertaken by the investigator has the following delimitations-

1. The study is confined to the general degree colleges affiliated to Gauhati University where vocational education courses are introduced.
2. The study is confined to the undergraduate students in the general degree colleges pursuing vocational education courses during the period of 2009-

2011.Therefore the study is not confined to the students who are not undertaking vocational education courses and also the students pursuing vocation education courses before and after the study period.

3. The study is concerned with the teachers teaching vocational education courses in the general degree colleges. Therefore the study is not related to the teachers who are not teaching vocational education courses.

1.17 Operational Definition of the Key-terms

For the purpose of clarity and proper understanding some of the concepts adopted in the study have been operationally defined.

i. **Vocational Education:** Courses of study that prepare students for a range of occupations that do not require baccalaureate or higher degrees, in areas such as agriculture, business, trades, industry, health services, home economics, and various technical fields. Instruction takes place in high schools, trade schools, community colleges and correspondence schools and through formal apprenticeship programmes and on the job training.[62]

Again, Vocational Education can also be interpreted as any form of education that prepares a student to acquire skills and qualifications related to a specific occupation; it may include elements of general education.[63]

ii. **General Degree Colleges:** An institution providing post-secondary education and conferred the first degree is usually a bachelor's degree (carrying the right to such designatory letters as B.A, B. Sc, B. Com) and may be either an honors degree or a pass degree.

iii. **Gauhati University:** A higher Educational Institution situated in Jalukbari, Guwahati imparting various degrees like Bachelor Degree, Master Degree, Doctoral Degree etc. in more than fifty disciplines. All the general degree colleges undertaken for the study are affiliated to Gauhati University.

iv. **Vocational Teacher:** The term 'Teacher' used in this study refers to the teachers who are teaching vocational education courses in the general degree colleges.

It is expected that the study will reflect the scenario of various vocational education courses that are introduced in the general degree colleges under Gauhati University. In the light of the findings, suggestions and recommendations of the study, it will be possible to improve the status of vocational education courses in the general degree colleges and introduce more vocational subjects by keeping in view of the students need as well as the need of the society.

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CHAPTER – II

REVIEW OF RELATED LITERATURE

CHAPTER-II

REVIEW OF RELATED LITERATURE

Knowledge of related literature enables the researcher to define the limits of her field and allowing the researcher to acquaint herself with current knowledge in the field of her research which the investigator is going to conduct the research. It brings to the investigator up-to-date information on the work which others have done and thus helps to study clearly and concisely her own problem. The essentiality of the review of related literature remains in the fact that it provides the researcher with an indication of the direction, update information relating to researcher's own problem, avoids replication of the study of findings. An analysis of the previous research works eliminates the risk of duplications of what has been done and provides a basis for formulating the problem more clearly. The reviews of related literature give suggestions on good ways to classify data, to discuss and to interpret findings and finally report these conclusions properly. The task of review of literature is highly creative and tedious because researcher has to synthesis the available knowledge of the field in a unique way to provide the rational for her study. So, review of literature may be instrumental in giving a final shape of the research proposed to be conducted.

It is a valuable guide to defining the problem, recognizing its significance, suggesting promising data- gathering devices, appropriate study design, and sources of data. The review of literatures was collected from thesis, journals, reports and various other sources. The investigator therefore, classified the related literature into two broad categories namely- Indian Studies and Studies done at International level.

2.1 Indian Studies

Bhatt, K.C. (1972)[1] conducted a study on "A Critical Study of the vocational education in West Germany vis-a-vis the vocational education in India".

From the study the investigator found that the situation of part time vocational schools in the 10 states of federal Republic of Germany was far from satisfactory. Although more than 10 hours per week of general and related instructions are to be considered necessary for training skilled workers under today's technological condition. In Germany vocational education has become a part and parcel of the educational system. Public education is given in two types of schools in Germany. They are- general school and vocational school. But in India the education system is mostly a 'single track' education which is purely academic and bookish.

Vocational education in Germany involves certain rights and corresponding duties both for the pupils as well as the employers. But in India vocational schools are still considered as substitutes for educationally backward pupils.

Vocational education of girls is not neglected in Germany whereas in India we shall have to strive hard to bring enough number of girls for apprenticeship training programme.

Thimmaiah et. al. (1982)[2] conducted a study on "Vocational education- problems and prospects".

The study was done with the following objectives-

1. To evaluate the overall demand for vocational skills in Karnataka State in relation to the vocational courses offered.
2. To review the programme of vocational education in the state with respect to enrolment trends, selection procedure, resource position etc.
3. To focus the problems of vocational education and highlight its prospects.
4. To make policy recommendations on the future programme of Vocationalization.

All the 45 colleges offering vocational courses in Karnataka were considered for the study. Data from all the principals were collected through a schedule and interviews were held for intensive information. Such information was also collected from same principals through a questionnaire. The teachers teaching the vocational courses and the

The main objectives of the study were-

I) To study the financial, administrative and academic difficulties faced by the institutions in conducting vocational education at +2 level.

II) To record reactions of the students, teachers and parents in the matter of undergoing vocational education.

III) To study whether proper facilities were available for vocational courses at +2 stage of Marathwada.

Out of 75 Colleges (Arts, Science and Commerce) vocational subjects were introduced in 38 Colleges. Interviews and Questionnaire were used as tools by the investigator.

The conclusions drawn were-

a) The majority of Institutions introducing vocational education were in Aurangabad district and the lowest in Jalna and Osmanabad.

b) 5 schools had introduced Animal science and 3 schools introduced Crop science in Marathwada which was basically agricultural. 7 institutions have introduced courses in small scale industries, 3 institutions introduced Banking and 4 institutions introduced Scooter repairing. 8 colleges introduced Salesmanship, 4 introduced Electronics and 4 Women's colleges introduced Home science.

c) No proper facilities were received by both students and teachers of vocational education courses.

d) Needs orientation in teaching.

Barooah, T. N. (1986)[4] reviewed the polytechnic vocational education in Assam during the period 1948 to 1978. He found that demand for technical manpower far exceeded supply. Some of the problems that affected polytechnics were defective selection procedures, outmoded syllabi, poor ration, inept management of examinations, improper

utilization of available facilities and dissatisfaction among teachers. The socio-economic status of successful polytechnic graduates as compared to that of their parents remained more or less the same.

Mohanty, G. (1986)[5] made a study on the topic "A Survey of Vocational Education in the State of Orissa since independence (1947-1981)

The major objectives of the study were-

I) To make a status survey of vocational education in the state of Orissa from 1947 -1981.

II) To list the types of training cum activities being conducted under vocational and technical education schemes.

III) To know the views of the heads of the vocational institutions regarding the efficacy of such programmes.

IV) To suggest ways and means for further improvement.

The major findings of the study were-

I) Study reveals that very few schools imparted vocational and technical education in 1947.

II) More men were attracted towards vocational and technical education courses than women.

III) Typewriting, music, dance & drama and tailoring had attracted women.

IV) There was shortage of skilled personnel and it leads to unemployment problems from 1961 to 1981. There was no feedback between training institutions and fields of work. Since the employment prospect was bleak, many dropped out.

Robert (1988)[6] made a study on the title "A study of the socio-economic status and vocational choice of students".

The study carried out with the following objectives:

I) To study the socio economic status of students in H.S. schools and their vocational choices.

II) To study the relationship between the vocational choices of the students and the vocational aspirations of their parents.

In the study, 199 H.S. students from various schools in Madurai and Awa district formed the sample. 63 parents of the students were also interviewed to ascertain their vocational aspirations for their children.

Socio Economic Status Scale (SESS), The Vocational Interest Record & The Parental Aspiration on Children's Vocation questionnaire were used. The Mean, S.D.,'t' test and Chi-square tests were used.

The findings reported were as follows:

I) The vocational choice of the H.S. students was independent of their socio-economic status and vocational aspiration of their parents.

II) Both boys and girls had similar vocational choice as regards Agriculture, Arts, Literature, Executive work, Commerce, Science and Social work. However contrary to boys, most of the girls preferred the vocation involving house hold works.

Sungoh, S. M. (1989)[7] conducted a study on "A study of vocational education and attitudes towards vocationalisation of education in East Khasi Hills".

The study was carried out with the following objectives-

1) To find out the nature and extent of educated unemployment in East Khasi Hills.

2) To study the present status of vocational education existing in various institutions in East Khasi Hills.

3) To measure the current attitudes of preuniversity students in East Khasi Hills towards vocationalisation of education by constructing an attitude scale.

4) To identify the problem of vocationalisation of education in East Khasi Hills.

5) Suggest measures for effective implementation of vocationalisation of education in East Khasi Hills.

The major findings were-

1. There has been an imbalance in the demand and supply of manpower in the District and the State as a whole. There is an acute shortage of manpower in certain areas, and on the other hand there are also a large number of unemployed persons who do not find jobs.

2. In Meghalaya, three institutions are involved regarding vocational education. They are- a) Shillong Polytechnic b) The Industrial Training Institute c) The Don Bosco Technical Institute.

3. It has been found that current status of vocational education is not very attractive. One of the reason is that the admission are given not on merit basis and a large number of applicants are having only the minimum required qualification.

4. In East khasi Hills, vocational courses are not popular, since most of the students usually rush for general courses. There are very few skilled people in various areas. But some of the courses are of great demand. Such as- Computer Technology, Electronics, Stenography, Electrician, Cutting & Tailoring, Dairy farming etc.

5. The results indicated that the student's attitude towards Vocationalization of education was favourable. The findings of the study clearly indicate that students are receptive to Vocationalization of education.

6. The study revealed that the problems faced by students are - Lack of infrastructural & equipment facilities, administrative problem, financial support, problem of unemployment, course content, diversified curriculam etc.

Vaid, D.K. and SenGupta, M. (1990)[8] undertook a quick appraisal study of the implementation of Centrally Sponsored Scheme in Goa.

The study found that about 11.2% of all the higher secondary students had been diverted to the vocational stream. No systematic vocational survey was conducted. About 62% of the heads of institutions felt that the practical training given 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. No vocational guidance was provided to students.

Sacheti, A.K. and Raizada, P. (1990)[9] made a study on quick appraisal of the implementation of Centrally Sponsored Scheme (CSS) in the state of Rajasthan.

The study covered about 11% of the higher secondary schools offering vocational courses. These courses have been mostly introduced in government run schools. Most of the teachers were post- graduates or graduates in the concerned vocational areas. About 68% of the sample students reported non-availability of workshops, laboratories and libraries for vocational courses. Of the vocational entrants, 6.42% obtained the first division, 41.79% second division and remaining third division. After completing their course 36.39% were government servants, 27.22% were engaged in agriculture and related occupations and 20.14% were doing business. With regard to employment after the course only isolated cases of gainful employment were reported by teachers.

Emmanuel, M.A.K.J. (1990)[10] made a study on "Vocationalization of education at the +2 stage- A study of some major problems of Vocationalization of education in Andhra Pradesh".

The study attempts to identify some of the major problems related to the implementation of the programme of Vocationalization of education at the +2 stage in Andhra Pradesh.

The objective of the study was to highlight the main problems in the way of successful implementation of the Vocationalization of education programme at the +2 stage in Andhra Pradesh.

The study used the survey method for collecting data which were then subjected to normal statistical treatment.

The major findings of the study were-

I) There is a felt need for vocational education.

II) The NCERT guidelines were not followed by the State. The State did not have a separate directorate for vocational education to systematically take up curriculum development, training of teachers and curriculum transaction.

III) The scheme suffers due to dual control in respect of academic and administrative matters.

IV) The facilities, both in terms of man power and infrastructure are disorganised and meager.

V) The teaching faculty is drawn from coordinating institution on an adhoc basis.

Gupta, V. (1990)[11] conducted a study on "Vocationalization of education at the +2 stage in the Union Territory of Delhi".

The study centers round the development of vocational education and its implementation in the Union Territory of Delhi.

The study had undertaken with the following objectives-

I) To study the emergence of vocational education.

II) To study the implementation of the scheme of Vocationalization of education in the higher secondary schools of Delhi.

III) To study in depth the problems of implementation

The purposive sampling method was used for collecting data.

The major findings were-

I) Courses are introduced in schools based on the availability of teachers and infrastructural facilities.
II) Most of the school has part time teachers.
III) The schools did not have adequate facilities for practicals.
IV) Vocational courses were started without taking into consideration the need of the community.
V) However, enrolment to these vocational courses was found to be increasing as passed out students were being absorbed in the employment market

Kureshi, J. A. (1990)[12] made a study on the title "A critical study of the vocational interest of the students of Arts, Science and Commerce studying at graduation level in senior colleges in the rural areas".

The study probes the vocational interest of students (Arts, Science and Commerce) at graduate level and makes a comparative study of the interest of male and female students. All students studying in colleges in the rural areas form the population for the study and the sample comprise 600 students. 'The Vocational Interest Inventory' was used.

The major findings of the study were –

I) Rural students had less interest in agriculture and more interest in vocations connected with science.
II) Students from Arts and Commerce faculties expressed high interest in persuasive and executive vocations.
III) Students of all the three categories showed little interest in social vocation.
IV) White collar vocations were preferred by students. They showed less interest in vocations involving physical labour.

Mohan, S. and Gupta, N. (1990)[13] studied on the topic "Factors related to choice of vocational courses".

The authors have attempted to review researches conducted both in India and abroad on the factors leading to choice of vocational and technical programmes by children.

The objectives of the study were as follows –

I) To identify the factors that determines the choice of career by children.

II) To compare the attitude of children who join vocational and technical courses with those who opt for academic courses.

III) To determine the socio-educational background of children attending vocational courses.

The study was based on review of official documents and research studies on different aspects of vocational and technical education conducted both within and outside India from 1970 to 1987.

The major findings of the study were –

I) Some of the significant factors for joining vocational and technical courses were identified as

   a) Interest and motivation for a particular kind of activity.
   b) Personnel concern, assets, set of values cherished.
   c) Level of self-concept
   d) Attitudinal aspects
   e) Career maturity
   f) Future prospects

II) These factors varied in degree from child to child and no generalization could be made about their relative importance for a child.

Nagar, R. (1991)[14] investigated on "Vocational Aspiration of educated girls in Gorakhpur Division and facilities available to them".

From the study she found that the apparent difference in vocational aspiration amongst various socio-economic status group at the three education levels may be a result of maturing realistic choice taking into account both vocational information and personal abilities as well as the social prestige and financial requirement of vocational training. Vocational aspiration found only in areas like- scientific, artistic household, executive and literacy. This is because lack of vocational information as well as facilities available for girls in that part of the country. Solution to this problem can be formed through educational and vocational guidance programme.

Bhargava, R. (1991)[15] made an independent study on the topic "A study on the Interest and difficulties faced by the students studying in the vocational education stream".

The study investigated the interest of the students' in vocational education, society and employment and their anxiety for employment. It also identified the difficulties faced by the students and their possible solutions.

The study had designed with the following objectives-

I) To ascertain the selection procedure and criteria for admission to vocational courses.

II) To list the efforts made by the schools to enrol students in the vocational stream.

III) To judge the interest of students in vocational education.

IV) To evaluate the efficacy of the vocational education programme.

V) To know the physical resources available in vocational schools and offer suggestions for further improvement.

The investigator had randomly selected 34 schools having vocational streams. Separate questionnaire were administered to 33 principals, 34 vice- principals, 32 vocational teachers, 224 students and 193 concerned parents. Collected data were treated with percentages.

The major findings were-

I) 83% of students choose vocational education out of their own interest, while a small section joined it as they could not get admission in the academic stream.

II) The majority of the students felt that vocational education was purposive, interesting and important for enhancing employability and national development.

III) The majority of the parents opined that their wards were interested in vocational education and that it was better than academic education as it prepares them for employment and self- dependence.

IV) Only 34% schools have trained staff.

V) The number of students in the vocational stream was decreasing progressively because of non- availability of trained teachers. Lack of proper guidance and inadequate physical facilities.

VI) The criterion of admission was the interest of students and their parents.

VII) In most of the schools, there was lack of space, teaching aids and subject teachers.

VIII) 97% of the vice- principals considered vocational education useful and an answer to the unemployment problem.

IX) Budget is not allotted in proper time.

X) The majority of the teachers felt that their students could not get employment or become self-employed after passing out from the +2 stage.

Dhote, A.K. (1991)[16] made an on the spot study of the implementation of the Vocationalization of education programme in the State of Maharashtra.

The study reveals that –

Lack of suitable instructional materials, inadequacy of on the job training, non-recognition of the vocational courses for employment were some of the weaknesses that

identified in the study done by Dhote. If the situation remains without change the very spirit of Vocationalization will go in vain.

Das, R.S. (1991)[17] had conducted a study titled "An analytical study of the vocational interest of primary teachers".

The study tries to find out the areas of interest of teachers and whether they have taken up the teaching vocation out of interest or were compelled by other reasons.

The objective of this study was to study the professional interest of primary teachers.

Two hundred primary school teachers were selected randomly to form the sample. Out of these, 50 males and 50 females were from the urban areas and another 100 were from rural areas. The tool used was the Vocational Interest Record of S.P. Kulshreshha. The data was statistically treated to calculate mean, S.D and critical ratio. Significance levels were tested and interest in different vocations analysed and compared.

The major findings were-

I) The vocational interests of urban primary teachers (male & female) differ significantly from that of rural teachers.

II) The female primary teachers had higher vocational interest than the male primary teachers.

III) The male primary teachers had more commercial vocational interest than the female teachers.

IV) The female teachers had more vocational interest in family functions and aesthetic functions than the male teachers.

Biswal, Premananda (1992)[18] made a study on "Vocationalization of education at the +2 stage in the State of Himachal Pradesh: An evaluative study".

The study evaluates the implementation of the programme of Vocationalization of education at the +2 stage in the state of Himachal Pradesh.

The study had the following objectives-

I) To study the development of the Vocationalization of education in India in a historical perspective.

II) To study the functioning of the programme of Vocationalization of education at the +2 stage in Himachal Pradesh with respect to various implementation aspects

III) To suggest measures for better implementation of the programme in the state.

A cluster sample of govt. senior secondary schools which responded to the questionnaires was chosen for the study. The total sample consisted of 22 principals, 65 teachers and 30% of the students in vocational courses at the +2 stage in 12 govt. senior secondary schools of six districts. Data were collected from pass-outs of the stream, from policy resource agencies and from 100 persons from the nearly community. The tools used were questionnaire and interview schedules. Analysis of variance was used for the purpose of analysing the data.

The major findings of the study were-

I) Admission to vocational courses was done on the basis of merit and an increasing trend of enrolment in the vocational stream was noticed from 1988-89 to 1990-1991 in the state.

II) The implementation was deficient in term of infrastructure, teaching and non-teaching staff, funds, proper management staff, supervision, need based curriculum development, publicity, linkage between SUPW activities & vocational courses, coordination and cooperation among various departments collaboration with employing agencies, on the job training facilities, placement facilities, incentives & textbooks.

III) The teaching strategies used by the teachers were largely traditional.

IV) There was no special arrangement to train vocational teachers.

V) Vocational students were not interested in self-employment.

VI) Lack of adequate knowledge and understanding of the scheme was noticed among personnel involved in the process of implementation.

Guru, G., Dhote, A.K. and Ray, S. (1992)[19] made an on the spot study of the implementation of the vocationalisation of education programme in the state of Andhra Pradesh.

The findings of the study indicated that although the programme received a boost with the introduction of the Centrally Sponsored Scheme, it suffered from many deficiencies at the state level. Such as- delay in creation of the management structure at different levels, lack of monitoring, inadequate linkages, infrastructure and on the – job training. No modification in the recruitment rules, non-recognition of vocational courses for employment and absence of follow-up of vocational graduates were other major lacunae adversely affecting the programme. 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, L. N. (1992)[20] conducted a independent study on "Vocational achievements and problems faced by students who had passed the +2 vocational education examination".

The study investigated the achievements and problems faced by the students who had passed their +2 examinations in vocational education from the Rajasthan Board of Secondary Education (RBSE).

The study was designed with the following objectives –

I) To get information about the vocational achievements of students who had passed the +2 examination in vocational education from RBSE.

II) To obtain information about the loans taken by them.

III) To gather the opinion of the guardians of the students about vocational education.

IV) To identify the problems faced by these students.

The criterion for selection of the sample was purposive sampling. Interview schedules for students / teachers / guardians were used. Percentages were calculated for analysis and interpretation of data.

The major finding were as follows –

I) Theory portion of their vocational courses were very difficult.

II) The students faced problems in doing practical due to lack of equipment, tools, and materials.

III) Schools faced lot of trouble in arranging on the job training for students due to lake of cooperation from the concerned agencies.

IV) The students who got jobs, too, were not satisfied because of meagre salaries, lake of sufficient skill on their part and job insecurity.

Sundararajan, S. (1993)[21] made a study on "vocational preferences of the higher secondary students".

The investigator examined the relative importance given by the higher secondary students to vocational opportunities. 560 students of higher secondary stage from 8 higher secondary schools were randomly selected in Chidambaram district. It was found that the boys and girls did not differ significantly with regard to their preference on three vocations namely the medical, engineering and administration. No significant difference was found in respect of first two vocations but significant difference was seen in respect of third vocation. In respect of the other categories of students, significant differences in the percentage were found with regard to all the three vocations. There was no association between the gender and most preferred vocations.

Government of Tamil Nadu (1994)[22] made an independent study on Vocational education in Tamil Nadu.

Government of Tamil Nadu constituted a high level committee on vocational education to suggest ways and means to make the vocational education programme effective. Data was collected through personal interaction, group conference, discussion, study of reports and recommendations of committees and commissions.

Findings from questionnaires and written statements of parents, teachers and public, the committee found that the total number of vocational students was generally increasing year after year while the percentage of vocational students was decreasing. The percentage of diversion of students to vocational courses during the 1993-1994 was 17. The committee also found that there was no separate administrative structure at any level to concentrate on this important aspect of education. The committee was in favour of a separate management structure in order to regulate the drawbacks like- 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.

Misra, A.K. (1994)[23] argued that when compared to general education, technical and vocational education has lower status in public mind in a large number of countries, including India. Hence, it is necessary to promote self-employment through industry linkage at a greater level, and articulation between vocational education and the first degree level education. Curriculum improvement, teacher competency, entrepreneurship development, better theoretical base were suggested for the status enhancement of the vocational education.

Rao, P.H.S. (1996)[24] analysed vocational education at school level and the continuance of it at the first degree level and concluded that unfortunately in many states of India the vocational programme could not take off for a variety of reasons such as non-availability of trained and qualified personnel, lack of instructional facilities, equipments, and above all, on-the-job training and apprenticeship which in turn would affect the student's vertical mobility. All such drawbacks in the +2 vocational courses did not make the learners of it neither for jobs and self-employment, nor could they get admission in the colleges. He suggested that to minimise this disastrous situation the existing vocational programme should be given weightage to improve self-employment or might lead them for the search of new insights through continuing tertiary education in the respective fields.

Archana et. al. (1997)[25] have shown that vocational education is not up to the mark due to the absence of properly trained teachers, inadequate facilities, and the courses

provided under vocational stream do not match with the local needs of employment and consequently failed to prepare the students for any jobs or self-employment.

Prakash, O. (1998)[26] pointed out that in spite of already having been so accepted in policy, vocational education has not gained any momentum yet. It was found that the manner in which vocational education is generally being dispensed made it look like an inferior alternative for the weaker students who are not meritorious or competent or able, on academic or economic considerations, to go for higher education; avenues for vertical and horizontal movement are yet not readily available in this stream. Vocational education, therefore, being important component of higher secondary education it would be more relevant if it makes the students keen to refine their skills and receptive to innovations in technique.

Government of Himachal Pradesh (1998), [27] **planning Department** conducted a study to evaluate the implementation of the CSS (Centrally Sponsored Scheme) in Himachal Pradesh.

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 proportion. The study revealed that enrolment is steadily increasing. Computer and electronics courses attract largest number of students as compared to other courses. It also revealed that the staffs for teaching vocational courses is adequate in number but the number 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% were pursuing further studies. The study 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 equipment is available in the school. The intake capacity of each course should be increased to make better utilization of the available teachers. Another significant recommendation was related to arrangement of pre-service

programme for fresh teachers, training programmes and periodic refresher courses for in-service teachers and package programme for part time teachers and new courses should be offered only after prior assessment of local available job opportunities.

Dangi, K.L. and Intodia, S.L. (1999)[28] conducted a study on "The agro- based vocational education of youth for better employment generation in southern Rajasthan".

The investigator made the study to find out the choice of the youth regarding different agricultural vocations. 350 youth covering 175 tribal and 175 non-tribal schools constituted the sample.

The study revealed that there was a highly significant correlation between overall tribal and non-tribal youth regarding their assignment of ranks to different vocations under agriculture aspects for developing vocational curriculam at the school level. There existed a significant relationship between the groups of tribal and non-tribal educated rural youth in ranking the different areas of agriculture vocation. The agriculture – based vocational courses suggested by the tribal respondents were- crop production, dairying, seed production technology, plant production techniques, maintenance of agricultural machineries and establishment of agro-service centres. The prioritisation of agricultural vocation for new vocational syllabi suggested by non-tribal educated rural youth were crop production, dairying, establishment of agro service centres, seed production technology, fruit and vegetable preservation technology and horticulture. Sericulture was the least preferred vocation.

Arora, S. (1999)[29] reveals that despite of the goals and objectives of vocational education at +2 level, there were many issues and problems responsible for the very slow progress of it. It was suggested that to achieve the objectives of vocational education the identified hindrances like the mismatch between the offered course and the need and demand of the society, the selection of students for vocational education is not based on their ability, aptitude, and interest, the absence of uniform pattern in selecting them into vocational stream, insufficient availability of textbooks and instructional materials in all regional languages, shortage of qualified and trained teachers, inadequate allotment of financial assistance and limited facilities for study tour, on- the- job training and apprenticeship should be removed.

Pandya, R. (2000)[30] has found that in the developing countries like India the net returns of vocational schooling has been comparably low than general education because of the complexity of pedagogy which requires specialised equipment and materials, lack of commitment in implementing the programmes, inability to vocationalise the curriculum through the stage of secondary schooling and cost effectiveness of enterprise and skills training centers.

Desai, G. and Whiteside, T. (2000)[31] conducted a study on Vocational higher secondary education graduates in the state of Gujarat.

The investigators analysed the views of the limited number of graduates from secondary vocational courses who have entered the world of work and reported that commerce and technical courses attract more students, (40% and 48% respectively) with first class secondary school certificates than home science(27%) and agriculture (26%). On the question of socio-economic background of the students and ex-students, it was found that the students from poorer and less privileged background like to enter vocational stream. With regard to variation in choices of courses in relation to the income of the family, it was found that lower family income backgrounds were over represented in the home science courses, while those with highest family income backgrounds were not represented in commerce courses and over represented in the technical courses. On family background, it was found that 37% of vocational students come from family backgrounds that have reported income below Rs 1500 per month, compared with 78% of ex-students now in work. On the question of job search, the ex-students reported that the waiting period has been lengthy and difficult. Only 1% of the ex-students had found a job before the end of the course, 15% up to 6 months after the course and 44% between 6-12 months, with 40% taking over 12 months after completing the course. In conclusion, it confirmed the findings of other states which have shown that the provision of vocational secondary education does not mean that students will automatically get work after completion of a vocational course.

The Institute of Applied Manpower research (IAMR), [32] **New Delhi** undertook a survey in the year **2001** to evaluate the vocational education at the degree level in four different universities in four different states.

The four universities were – Gujrat University, Karnataka University, Devi Ahilya University and Madurai Kamraj University. Four colleges from each university that is 16 colleges were chosen. For the Evaluation of Vocational Education survey students, teachers, head of the institutions, pass-outs and experts/key informants were covered, through structured questionnaire.

In the course of the survey, it was noted that the vocational courses have instilled among the students a yearning for jobs in which the skills they have acquired could be useful. More than 96% of the students undergoing the course indicated that they wanted to work either in an organisation, or start their own enterprise or join the family enterprise.

It was noticed that vocational courses had failed to detract student from aspiring for a government job and promote self-employment, one of the key objectives of the vocational courses at the rural level. This was evident from the fact that 60% of the total students contacted rated a government job as their first priority and only 25% opted for private jobs.

The enrichment of the course content according to local needs and conditions was not observed in any of the four universities covered even though the UGC allows universities to modify the courses accordingly. In fact, lack of vision of the university and college authorities in designing suitable courses act as a major handicap in their efforts to equip students with the requisite knowledge needed for local advancement. Furthermore, the dearth of infrastructural facilities and absence of teachers trained especially for conducting the vocational course act as a major bottle neck in the success of the course in serving its intending purpose. The study team could not find a single college where students used laboratories/workshop of other institutions as per the UGC guidelines. Field visit, reading materials and library facilities were not available.

As regards employability, the study team found that vocational courses had practically failed to achieve this objective. Campus recruitment was almost totally absent.

Singh, D.P. (2001)[33] made a study on "Value Inculcation through Work-Experience and Vocational Education". He made a rational judgement on the teaching learning of

vocational courses. He asserted that apart from imparting knowledge and skills about a particular vocation, teaching learning of such courses also helps the learner to inculcate certain human values which even can help him to attain success in life. Therefore value based vocational programmes are very important for national productivity and sustainable development.

Prasanthakumer, P.V. (2002)[34] analysed vocational education with its meaning, aims, and components and observed that it gives undue importance to memory and theoretical aspects of knowledge thereby narrowing down the scope for job either in private or public sector. Therefore, it is suggested to make job-oriented vocational education relevant so as to equip young men for self-employment.

Prakash, B.S. & Gupta, K.P. (2002)[35] advocated for reorienting and restructuring the courses and training facilities given to ITI graduates in order to enhance the scope of employability of ITI graduates. He analysed the popularity on the basis of various factors like 'admission demand', 'campus recruitment' and others and later corroborated by the industry response since campus recruitment by important industrial establishments is an index of popularity. He argued that in most possible cases the training facilities in those institutions should be in line with the latest technological advancement. Government policies should equally emphasise on impartment of adequate skills so that enhancement of the scope of self-employment can be achieved.

Chhikara, M.S. & Singh, J. (2002)[36] in a case study evaluated the role of human and non-human in planning, executing and managing the vocational training programme activities. They analysed the impact of various activities related to the core objectives and short coming of the policies of *Avinashilingam Jan Shikshan Sansthan (AJSS),* Coimbatore, Tamilnadu and helped in improving the performances of the organization. A detailed analysis was presented highlighting factors like 'Human resource management', 'Scope and Methodology', 'Management of Non-Human Inouts' etc. They evaluated the impact of the role of AJSS in providing knowledge, imparting skills and developing confidence and worked out suggestive measures for better performances.

Tilak, J.B.G. (2003)[37] made a study on vocational education and training in Asia. The study revealed that in the developing countries of Asian region, the progress of vocational and technical education and training has been influenced by social, economic and political factors which mutually interact with each other. He found that the uneven progress in the enrolment into vocational programmes was largely due to the negative attitudes towards manual work which in turn dampen the demand for vocational education, the low prestige attached on such type of programmes, expensive generally than academic education, lagness in the industrial development and absence of an unique policy towards vocational education and training.

Bhagabati, D. (2006)[38] conducted a study on the topic "Vocational education among scheduled caste and scheduled tribes in Industrial Training Institutes (ITI) in Assam".

The study revealed that –

There had been quantitative expansion of ITIs from 23 with seating capacity of 4772. In the meantime the number of ITIs has gone up to 28 without any marked change of intake capacity. This reveals that the ratio of intake capacity per ITI in Assam has got reduced. The admission trend of the Scheduled group as a whole is governed by the market forces rather than their ethnic characteristics. Out of the total allotted seats for Scheduled group, 51.3% in Nalbari, 18.33% in Barpeta and 39.66% in Guwahati remained unutilized. No significant difference in seat utilization between Scheduled group and Non Scheduled group students was noticed in the total enrolment of selected ITIs in Assam. The Scheduled group students which divided into SC & ST revealed significant difference in utilization of seats. In this context, SC students were found better than their ST counterpart. More dropout rate was found registered among SC students (8.91%) than ST students (5.50%). Non Scheduled group students registered 11.92% drop out. Multiple variations were observed in stagnation rate in terms of sex, category and place.

Bengeri, V. N. (2007)[39] conducted a study on "Vocational Education and Women: A sociological study"

In her study she found that-

Out of total 260 respondents, 96 (36.9%) were motivated by their fathers to take up vocational education, 123 (47.3%) respondents said that they were motivated by their mothers, 07 (2.7%) respondents were motivated by their husband and 34 (13.1%) respondents were motivated by other persons like- friends, teachers, grandparents, brothers and sisters etc. The results show that the number of respondents who are motivated by their mother is more. It indicates that in present days mothers are encouraging their daughters more & more to take up vocational education as they have clearly understood the importance and usefulness of vocational education. Again 99.2% respondents were of the opinion that employability is more in vocational education than general education.

Lahkar, L. and Kakati, G.R. (2008)[40] conducted a study on " Vocationalization of secondary education- A case study of secondary and higher secondary schools of Kamrup District: Assam"

The study was made with the objective to study about the present condition of the secondary and higher secondary institutions regarding vocational education. The study was carried out exclusively among the vocationalised higher secondary schools in Kamrup District. Sample contains 9 vocationalised higher secondary schools.

From the study the investigators observed the following points-

1. Limited numbers of vocational courses are introduced in these H.S schools.
2. All the teachers post are not regularized. In some courses the part time teachers rendering their services without salary.
3. The equipment for different courses are not as per requirement.
4. From the study it is found that the enrolment in vocational education is very less in comparison to the general education.
5. Vocational teacher's reported that proper course content, textbooks are not available. Most of the teachers translated the course content into vernacular language from English.
6. Lack of School-Industry linkages makes the courses theory oriented.

7. The practical facilities to demonstrate the on job training is inadequate.

8. It is also to be noted that the guardians are not aware of the importance of the vocational education. The agro base vocational subjects are neglected by the institutions. Because it is considered inferior to the general education.

9. Lacks of awareness among the key functionaries, parents, employers are the major extrinsic factor responsible for low enrolment of students in vocational courses.

Oberoi, R. (2009)[41] described about the growing need of restructuring vocational education and improving the skill development strategies in India through enhancement of the competency. It is indeed being practiced worldwide. Investment in education and training is investment in human capital. Job shortage and unprepared workers are the two important workforce issues faced by India. This realization has led the Indian government to introduce detailed strategy and set of recommendations for revamping, expanding and reorienting the existing education system and to go with the skill development programmes. He analysed the key policy issues related with interlinking the need of the labour market and education and training strategies. Accordingly he proposed new framework for expanding and revamping the existing education and training policy for effective execution at all levels through public – private partnership. He suggested some essential steps for comprehensive reforms of the technical and vocational education system.

Boruah, K. and Phukan, M. (2010)[42] conducted a study on "Gender differences in parental aspirations in the choice of vocation of their children".

The objective was to study the gender differences in parental aspirations in the choice of vocation of their children. The study was carried out in the municipality area of Jorhat district of Assam. 6 numbers of wards were purposively selected to carry out the study. From each ward, 20 households having children from IX to XII and both parents being alive with educational qualification of not below higher secondary level were purposively selected. Thus a total of 120 parents and their children were selected as sample. The gender breakup was 70 boys and 50 girls.

A check list was prepared for collection of relevant data from the respondents. An occupational list was also prepared consisting of 208 occupational titles based on the Holland's theory of six occupational types based on interest. Survey method was adopted.

The major findings of the study were-

1. There was a significant gender difference in the choice of types of vocations by the father. Fathers of male respondents showed a strong tendency to expect their sons to choose investigate type of vocations and for daughter's conventional type of vocations. Social and realistic jobs were least preferred by the parents as future vocation of their sons and daughters.

2. Similarly a significant gender difference in choice of vocation by the mothers for their children existed. Artistic vocations were frequently chosen as future vocation for the daughter whereas investigative jobs were chosen for sons.

3. There was no significant gender differences existed in parental aspirations on choice of vocation of their children. This indicates that parents recognize the fact that children, irrespective of their sex, possess equal skills and competencies to work and excel in a career.

Nagpal, V. (2010)[43] in a study advocated for alternate training modalities for the 'out of school' youth population who remain mostly unemployment due to lack of required literary qualification and adequate technical skills. Vocational skills acquired by such candidates through vocational training courses, thus become a mean of their survival in the world of work. Non formal education plays an important role in improving vocational skills in various fields. Formal vocational training programmes are not designed to cater to the needs of a highly increasing number of ill –and/or uneducated youths in developing countries. Vocational training programmes implemented by the voluntary organizations required to be improved appropriately to achieve the expected goal and proper linkage between non-government organizations and governmental institutions is quite necessary to implement the placement strategies.

Sanjay, B. (2010)[44] described about the need of restructuring the training programmes through regular up gradation and formulation of detailed policy to train the abundant human resources in India in order to capitalize the growing international market of outsourcing. India need to strengthen its professional and vocational education system to generate enough skilled manpower for the international job market so that it can compete equally well with other developing countries like China. China has already attained commendable success in the field of out souring business.

Goel, V.P. (2010)[45] discussed about contribution of Technical and vocational Education and Training in India towards sustainable development. Although India has a large pool of technical manpower but compared to population this is not significant at all. In India more emphasis has been given on general education than in vocational education and the result is that large number of educated people remain unemployed. Again now number of engineering graduates is more than diploma holders which creates a sort of imbalance with respect to work force required at lower level. So all these reflects that there is a greater thrust for Vocationalization. Technical and Vocational Education has to contribute a lot towards this. So more funds are being allocated by the government for vocationalization.

Barik, K. (2010)[46] conducted a study on "Enrolment trend of Vocational education programmes in Open Schooling: A Study of NIOS, India".

The main objective of this study was to analyse the enrolment trend of students in vocational education programmes of NIOS for the period 1997-98 to 2009-2010.

The major findings were-

Enrolment in vocational courses of NIOS has shown a sharp increase up to 2002-03 after which a declining trend is observed. The number of students increased at a rapid rate from 5822 in 1997-98 to 22321 in 2002-03. The enrolment during the subsequent period (2003-04 to 2009-10) is quite discouraging. It has not seen a positive growth except for 2005-06 and 2007-08. It has been observed that enrolment in academic courses is much higher than that in vocational courses. The number of students enrolled in vocational courses is much less compared to total enrolment of

NIOS. In the session 2009-10 vocational courses had a share of only 4.35% in total enrolment. This could be because of the perception among people that vocational education is somewhat inferior compared to general education. Studies also revealed that other possible causes for low enrolment could be lack of emphasis on vocational education, non-revision of courses and ill-designed courses.

Again studies observed that there is regional variation in enrolment trend in vocational education. Vocational students of NIOS are attached to an AVI (Accredited vocational institute) where they avail facilities such as contact classes and hands on training. The highest numbers of AVI are present in Delhi followed by Uttar Pradesh. There are certain states mostly in the North –East where no AVI is present. It is worth mentioning that the North eastern states have no enrolment at all except Assam where 130 students are enrolled in 2009-10. The number of female students enrolled in vocational courses of NIOS however is much higher than that of male students.

Reddy, P.A., Devi, D.V. & Reddy, E.M. (2011)[47] in their study attempted to evaluate the priorities of vocational education courses and interests of the Indian undergraduate students. The study was confined to S.V. University area covering 300 undergraduate students of Arts, Commerce and Science stream. They identified the more prominent and less prominent vocational education courses. They analysed these aspect based on vocational interests and background of the students and thus provided a suggested list of vocational education courses for undergraduate students for enhancing their employability. They ratified their judgement based on different background including sex, caste etc. and discipline wise analysis.

Gandhi, E.A. (2012)[48] conducted a study on "Evaluation of vocational education offered at Higher Secondary Schools in Tirunelveli District, Tamil Nadu". The study revealed that all the schools offering vocational education since higher secondary up gradation and none of vocational subjects found to be self-supported. Vocational education mostly managed by part-time teachers in government-aided schools. Most of the students are pursuing vocational education in government-aided schools. The infrastructures for vocational education as well as in general are poor in all the schools, irrespective of type. Most of the interviewed teachers working in government schools are males while females found more in government-aided. All the teachers possess

academic qualification to teach the vocational education but none of them have any vocational or industrial experience.

The investigator suggested making full use of the resources and facilities available in Tirunelveli District for the benefit of vocational students- to be received of firsthand experience in their respective vocations, through a linkage between the higher secondary schools and industries.

Lama, S. (2012)[49] in her study attempted to evaluate the status of vocational education and training provided through distant mode by the distance educational institutes, a kind of different study. She observed that vocational education still remains out of the purview of the formal mode of education which keeps it apart from mainstream education curriculum. Several social and economic factors are responsible for this. Vocational education through distance and open learning process has yet to attract sufficient response from the students. She therefore put forward some suggestive measures so as to attract more number of students for the vocational courses offered through distant learning method. Because distance and open learning methods has several good points which makes it a viable option for economically backward people as well as for others.

Sindhi, S. (2013)[50] studied about strengthening vocational education in India and bridging the skill gaps. She highlighted the skill gaps that existed between the industry requirement and higher number technical and Vocational education (TVE) graduates. She discussed about the possible causes of failure of vocational education courses in India and the growing need of strengthening vocational education programmes for enhancement of employability of VET graduates.

2.2 Studies carried out at International level

Bender, R.E. (1964)[51] stated that implementation of Vocational education is greatly dependent on the quality and quantity of teachers and therefore teacher preparation for vocational education is a challenging problem. He made a rational analysis on teacher preparation for vocational education. Proper understanding of the subject matter and

acquirement of adequate skills are very much essential for a vocational teacher and that will impart occupational competence. According to him vocational teachers must design and teach programs that fit the special conditions under which they operate. Lack of understanding and appreciation of vocational education by teachers generates different types of problems in implementing vocational education. Teachers required having the ability to demonstrate the skills of the trade and to develop safe work habits. Appropriate instructional materials should be supplied to teachers and students. Development of appropriate learning materials is also equally important.

Blaug, M. (1973)[52] have found the unfavourable attitude towards the vocational and technical education was caused by the general notion that vocationalisation would not be a remedy for educated unemployment; it would not prepare students for specific occupations and would not reduce the mismatch between education and the labour market; it would not promise for higher wages when compared to academic streams; furthermore, vocational schooling might create a sense of second class citizenship among both teachers and taught, and would track some individuals away from academic education and access to jobs of the highest pay and status.

Centre for Educational Research, Innovation and Development (CERID), [53] **1979** conducted an evaluation study of vocational secondary education in Nepal. The study noted that the vocational graduates of a secondary school seldom found a job in their field of training and in reality only a negligible numbers were finally employed in a job. At the same time, there was an extreme dearth of competent teachers to teach vocational courses effectively in the secondary schools. The study reported that the curricula of many vocational courses were not generally framed in the light of the requirements for most of the common occupations in the country. Again there were a number of obvious flaws in the curricula of most of the vocational courses.

Belbase, L. N. & Jung, L.B. (1984)[54] studied about the issues influencing the planning and implementation of vocational education in Nepal. They reviewed the relevant literature and research works carried out on the issue and prepared a questionnaire to distribute among the administrators, experts and headmasters involved with vocational education. Based on the response against the questionnaire and nature of their work, they segregated the respondents into two groups namely 'planners' and 'implementors'

and then interpreted the responses using the analysis of variance statistical test (ANOVA). Their findings indicated that the issues are basically influenced by the factors like characteristics of students, employment prospect and financial aspects of the courses. Most of the planners and implementers were of the view that vocational education courses should be designed for less intelligent students. Major proportion of implementers felt that students should be able to make their vocational choice at the age of 14 or 15. They also felt that vocational education was too expensive in Nepal.

Thongpleae, C. (1985)[55] studied the non-formal vocational education programme in Thailand and found that the administrators were trained graduates with a certificate in Vocationalization. About 50% of the instructors also have such certificates. Most of the learners were in the age group of 15 to 35 years and were women. They took 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 Vocationalization in Thailand, except that successful non-formal graduates remained unemployed.

Thomas and Lowell (1985)[56] have observed that vocational teachers who did not possess traditional certificate were often narrowly specialised in their occupational area whereas the most traditionally certified vocational teachers were away from the up-to-date changes and its impact on the workplace. To improve the quality, in-service training in their technical specialities and alternative credentialing of teachers has to be practiced.

Grubb, W.N (1985)[57] believed that vocational education would be an answer to the problem of enrolment in higher education as it would promise to resolve the problem by providing more interesting and job-relevant curriculum suitable for students, especially lower class students who drop-out of schools without any occupational skills. It would also be helpful in developing "skill-culture" and attitude towards manual work. In contrast to pure academic culture which prefers mostly white collar jobs, vocational education creates the atmosphere for interaction of the 'hand' and the 'mind'.

Qiu, Y. (1988)[58] studied about the vocational education of young people in the people's republic of China. The article contains a brief account of vocational aspects of students

in china since 1949. According to him vocational education in china rather possessess complicated structure. Article also describes about the wide range of vocational programs established in china including the Secondary Professional Schools (SPS). Function of Vocational Technical Senior Middle School (VTSMS) which was engaged in vocational schooling of young people at a level equivalent to Senior Secondary Schools, has been elaborated in the article along with other similar programs including Adult Training Programmes (ATP). Vocational training through VTSMS has been described as successful approach for generating good number of skilled persons for industry.

Mustapha, Ramlee bin (1990)[59] conducted a research on the role of vocational and technical education in the industrialization of Malaysia as perceived by educators and employers. The purpose of this study was to identify the perceptions of educators and employers regarding the role of vocational and technical education in the industrialization of Malaysia. The first population was all vocational and technical educators (N = 4,316) in public vocational and technical schools and polytechnics in Peninsular Malaysia. A random sample of 300 educators was selected. The second population was employers from large and medium-size manufacturing companies in Mang Valley and Selangor. The sample consisted of 120 employers. A total of 276 educator instruments and 53 employer instruments were returned which yielded final response rates of 92% and 44% respectively. Several conclusions were drawn from the findings of the study: (a) both educators and employers believed that vocational and technical education has assumed a major role in the economic development of Malaysia and that a substantial financial investment in vocational and technical education and training was justified, (b) employers and educators were less certain regarding the employability skills of vocational and technical graduates, (c) educators and employers differed with regard to the factors that facilitated or inhibited the restructuring of vocational and technical education. However, both groups agreed that input from the private sector and technical exchanges between vocational institutions and business/industry were mutually beneficial, (d) educators and employers believed that the public sector did an inadequate job in satisfying the human resource needs of the industrial sector, (e) both groups were unclear regarding the factors that led to shortages of skilled workers, and (f) educators and employers differed regarding the government's

role in satisfying the needs of vocational and technical education and the needs of business and industry.

Rumble, G. and Olivera, J. (1992)[60] reveals that vocational education has been received a great deal of attention lately throughout the world and the distance learning is being increasingly used for vocational and professional studies in several countries, including India.

Hull, Glynda (1993)[61] conducted a study on student's experiences in a community college vocational program in banking and finance and the jobs the student got and lost in the data center of a bank. The study consisted in analysing the literacy problems of North American workers and relationship between skills and competitiveness in the global economy and correlation of the situation of the vocational students in these contexts. The study revealed that although newer technologies developed helped in availing more organized work, but american workers were poorly educated and even illiterate and therefore business and industry were facing shortage of skilled labour. Vocational education programmes were the one which practically arranged opportunity to nurture literate skills for the American workers. Employment prospects associated with such courses attracted many students in the banking and finance sector. These courses helped the students to learn many entry level works for those sectors and even helped them to build up enough confidence to face the global competitiveness.

Keith, Watson (1994)[62] made a comparative study on Technical and Vocational Education in Developing countries to analyse the influence of western paradigms. He ascertained that 'Technical/Vocational Education and Training (TVET) has considerably influenced the education system in least developed countries to boost the economic growth and development through most effective utilisation of modern technologies. The major difficulties appear is that TVET has proved to be expensive and frequently irrelevant for individual needs of many least developed countries. Most development plans and programmes have also been influenced by western paradigms and the same trend was observed at TVET levels. In this article he advocated justifiable arguments for TVET/VOCED quoting references from noted personalities. Apart from these he also described the crisis faced by least developed countries at socio-economic level and implementation level. Socio-economic crisis include financial crisis brought

about by world's economic recession, population growth, rising employment problems, rapid urbanization and falling output. He advocated for proper government initiatives and identified few reasons for failure of VOCED/TVET programmes. He stated that there is no relationship whatsoever between the intensity of Vocationalization and the share of labour force in manual occupations. Base on comparative study he argued that TVET should be introduced at primary level alone and outside the school system or at the end of schooling in specialised institutions closely linked to the employment needs and changing markets.

Lewis, M.V (2000)[63] asserted that the purpose of offering vocational education is the society's attempt in assisting each student to realise his/her maximum potential for future occupational roles. However, he found that vocational students were not developmentally ready to make informed career because vocational education always being the second choice for those who cannot meet the requirements of the college preparatory curriculum.

Bragg, Debra. D. (2001)[64] discussed the changing nature of vocational education in the community colleges and offered models and strategies for organizing and delivering vocational education effectively.

Maldonado - Feliciano, Leslie E., Rivera-Alicea and Blanca, E. (2002)[65] studied about the Vocational interest and Vocational Satisfaction of Licensed psychologists in Puerto Rico and found a moderate correlation between vocational interests and vocational satisfaction. Social interaction and social interests was significant contributor of vocational satisfaction.

Mupinga, D.M. and Livesay, K. (2004)[66] has precisely explained the importance of considering vocational and technical education for post-secondary education. They provided a elaborative description about both the forms of education. According to them it is very much essential for each student to speculate and judge the relevance of vocational and technical education for their career. Because besides being a cost effective, such education programmes have geographic accessibility and program variety and also enables a student to train in a specific career field and earn significant salary. Furthermore the option will always open for them to pursue higher education

while working in their chosen career. Vocational education and technical education help students to get started in life and career faster, easier and cheaper than conventional university system.

Low, K. S., Yoon, M., Roberts, B. W. and Rounds, J. (2005)[67] in their study entitled as "The Stability of Vocational Interests from Early Adolescence to middle Adulthood: A Quantitative Review of Longitudinal Studies" revealed that the consistency of vocational interests remained unchanged during much of adolescence and increased dramatically during the college years (age 18-21 years) where it remained for the next two decades. Furthermore interests reflecting hands on physical activities and self-expressive/artistic activities were more stable than scientific, social, enterprising and clerical interests.

Collier, K. and Mcmanus, J. (2005)[68] carried out research programmes to evaluate whether learning partnership could be used in workplace training and they ascertained that despite the differences between higher education (HE) and Vocational Education and Training (VET), learning partnership can effectively be used in VET. They conducted developmental research on how to setup successful learning partnership in a VET programme. Their research hinted out that learning partnership can be valuable VET resource and this can substantially improve learning in VET. It is essential to structure properly the learning partnership so that participants can get the best out of it. Of course participants should be made aware of the skills and attributes of partners that are necessary for success of learning partnership process and these have to be accomplished during induction process. Their research also identified some of the desirable qualities of learning partnerships. In all these process the role of facilitator mainly controls the success of such programmes.

Weigel, T., Mulder, M. and Collins, K. (2007)[69] reviewed how the concept of competence is used in the process of developing Vocational Education and Training (VET) by selected European Union member states. The primary objective was to make out a comparison of how the concept of meaning of competence was interpreted by those countries. In England the concept of competence was set in the context of National Vocational Qualifications (NVQ) which was again based on National Occupational Standards (NOS). In Germany the concept was set within action

competence and the approach to learning areas while in France the concept was used within the *Emploi Type Etudie dans sa Dynamique* (ETED) meaning Typical Employment Studies in its Dynamics. In Netherland the concept was strongly linked to the development of competence based qualification structure for Senior Secondary vocational Education. Still some conceptual convergence was found to exist among those countries as can be seen from some common principles of competence and competence based VET in those countries. In fact the first experiment with competence based reforms in higher education were conducted during 1970. Since then the concept has attracted worldwide popularity because of the commendable success and now even the concept has crossed to other areas like Corporate strategy development, Human resource management and others. Of course still there is considerable variation in the meaning of the competence concept, among various countries.

Armstrong, P.I., Rounds J., and Hubert, L. (2008)[70] in a study tried to reconceptualise the past historical data related to vocational interest research. Past historical datasets showed development of several statistical models for evaluating the structure of vocational interest. These structural models were reanalyzed using modern circumplex and hierarchical clustering techniques. For example J.L. Holand's RIASEC model, which represents a set of vocational personality types and working environments with six broad categories: Realistic(R), Investigative (I), Artistic (A), Social(S), Enterprising (E) and Conventional (C). This model can be used to classify an individual's interest and to classify occupations. By matching the individual's interest with occupational characteristics, it is possible to evaluate potential career choice for an individual. Several other hierarchical models were proposed to represent interest structure as an alternative to Holland's circumplex. Author in this article has tried to discuss through reconceptualization to find out which structural model would be more useful in career counseling. He pointed out about the shift in research focus away from such prototype model for interest measures towards more general issues of interest structure using measures, such as basic interests. That led to a wider range of interest constructs.

Alam, G. (2008)[71] describes the contribution of vocational and technical education towards development in third world countries with special reference to Bangladesh. He

mentioned that despite having a large pool of educated people, development in many third world countries is sluggish. Quality of education was a factor in many of these and therefore he argued for well diversified education system for sustainable development. According to him by proper utilising the great pool of labour force, it might be possible to achieve significant development in Bangladesh, provided people are trained in modern professional – based and job oriented technical, technological and vocational programs. Even Bangladesh's economy and human development might have grown faster than its usual rate. High quality education in different technical and vocational field can do wonder. Technical and vocational education has a much wider roll in nation's development.

Azizi, N. (2008)[72] made an attempt to analyze teacher's and student's view on the ways of narrowing the gap between secondary education and labour market in Iran and he found that secondary education system need to increase the career abilities of the students in order to meet the requirement of labour market. In order to achieve this goal curriculum of the courses should emphasise on the implementation of technical vocational courses which might ensure adequate number of skilled person for job market and simultaneously reduce the growing unemployment ratio.

Zhang, Xiaomin (2008)[73] conducted a study on Developing Higher vocational education at Undergraduate course level in Shandong province. Development of higher vocational education at undergraduate level is a dire necessity for modern economic development and also for popularising vocational education. He analysed these aspect with reference to china and with special reference to Shandong province. He put forward some tactics and ways to develop higher vocational education at undergraduate level. China of course has expedited the development of higher education since 1999 which in turn helped faster development of higher vocational education. Shandong province had eventually gained fast development in higher education and higher vocational education.

Raisanen, A. and Rakkolainen, M. (2009)[74] in an article has narrated about the evaluation of social and communication skills in vocational education and training. The evaluation concentrates on key competencies such as learning to learn skills, communication skills, social skills and entrepreneurship. These competencies are

included in all vocational study programmes as a part of accompanying with other key competencies. The approach made by the author was accepted by the European Commission for the quality management and quality assurance framework for vocational education and training in Europe for implementation of the programmes.

Velde, C. (2009)[75] studied about employer's perception of graduate competencies and tried to correlate it with future trends in higher vocational education in China. The rapidly growing economy of China always under pressure to produce skilled individuals. Keeping in view the critical dual system in China which consists in market economy as well as typical bureaucratic control, he conducted the research to align graduate outcome better with employer demand and also to find out employers perception about future trend. Employers perceived positive behavior, strong communication skills, commitment and ability to work in cooperative environment. This kind of study greatly helps in exploring the link between higher vocational education and employers demand.

Curtin, P., Stanwick, J., and Beddie, F. (2011)[76] in their article entitled as "Fostering Enterprise: the Innovation and Skills Nexus – Research readings" described the importance of innovation to productivity with reference to vocational education and training. He also mentioned about some challenges in the development of skills for innovation and the role of vocational education and training in it.

McLaughlin, P. and Mills, A.(2011)[77] in an Australian case study tried to bring about a effective collaboration between vocational and higher education studies for providing a dual parallel qualifications to students. They carried out a pilot project in construction management at a Melbourne university which aimed at finding out a better way to meet growing need of skilled persons by Industry sector. They attained overwhelming success in the project in which they were able to produce students with both theoretical and practical qualification. Because industry sector always prefer such skilled person and that attracts long term implication of such efforts.

Amu, Komla, M.E. & Offei-Ansah, C (2011)[78] studied about the difficulties associated with interlinking of Vocational and Technical Education with Industries with special reference to Vocational and Technical Education in University of Cape Coast,

Ghana. On the basis of responses obtained from 60 respondents from industry and university, they found that although most of them are aware of the dire necessity to interlink the both, but major hindrance is appearing from the existing curriculum structure which is not prepared to include practices in industries. Results from this study can be considered as very significant as this has greater implication for policy making and curriculum development for Vocational and Technical Education. Majority of respondent were of the view that work experience leads to higher probability of getting a job and so individual student's benefits most from this interlinking.

Farooq, G., Ajmal, M., Rahman, F. and Nafees, M. (2011)[79] in a special study emphasised on evaluation of curriculum for vocational subjects for hearing impaired children at secondary school level in Pakistan. They conducted the study by taking 100 vocational teachers, ten subject specialists in the field of vocational education and sixty hearing impaired students as sample and collecting data through questionnaires. They found that although the curriculum content of the vocational courses were not as per the physical and mental maturity of the hearing impaired children but these were helpful in making them self-reliant and supportive member of family and society. They suggested up gradation and modernization of vocational curriculum of those subjects to meet the market and future needs.

Boateng, C. (2012)[80] studied about restructuring Vocational and Technical Education in Ghana and the role of leadership development. Vocational and Technical Education in Ghana underwent restructuring through many reforms which were aimed at improving the quality of vocational education and learning outcomes to make it more attractive and accessible to the world of works. She pointed out that the potential success of these reforms depends largely on the administrators and managers responsible for policy formulation and implementation. Therefore effective leadership is a key requirement for success of such reforms. She suggested Ghana government to pay due attention to that fact in the emerging vocational education environment. Attainment of adequate leadership behaviour through leadership development programs can create great promise for vocational educational programs.

Eichhorst, W., Rodriguez-Planas, N., Schmidl, R. and Zimmermann, K. F. (2012)[81] described about Roadmap to Vocational Education and Training Systems around the

world. Vocational Education and Training programme is a prominent tool to address the problem of unemployment. They tried to provide a better understanding of VET around the world dealing with three types of vocational systems: school-based education, a dual system in which school-based education is combined with firm-based training, and informal training. They discussed about motivation for these types of training and highlighted the key elements for each such system. They made a comparison of VET with general education system and tried to explore the relative strength compared to other forms of vocational education. They also discussed effectiveness of all the three types of VET.

Attaochu, E.U. (2013)[82] had carried out a study to ascertain the quality of teachers involved in implementation of Technical and Vocational Education in Colleges of Education (Technical) in North Central Nigeria. His assessment was appeared in the form of answers for two research questions set by him. The research questions consists in 18 cluster item questionnaire and 35 psycho-productive multiple choice test items. He asserted that TVE courses should be based on well-equipped workshop for skill development, short courses, seminars and workshops. Such type of course structure will help improving the quality of teachers. In order to ensure providing of good quality teachers, the concerned teacher should have better professional competence, sound communication skills, right knowledge about the subject matter and self-reliant.

Ngure, S.W. (2013)[83] examined training and development (T&D) systems in the technical, vocational education and training (TVET) in Kenya. The study indicated that Kenya Vision 2030 document identifies TVET as the anchor of its economic pillars through science, technology and innovation to boost up countries industrial status. Basic aim of his work was to make a correct assessment of training needs in order to meet the mismatch between skills imparted by training institutions and industrial needs. For that he scrutinized previous research papers and government document and collected information from senior education officers, Kenya Institute of Curriculum Development (KICD) as well as student trainee. He found that rigid and unresponsive curriculum, inadequate methods of training, inadequate number of staffs were the major drawbacks associated with Technical and Vocationa Education and Training in Kenya which need to be improved for better results. Of course additional factors like right equipment,

qualified teachers, and a conductive economic, social and political environment are also aiding to the issue.

Rufai, A., Obeta, I.C., and Onoh, C.E.C. (2013)[84] has studied about the human capital development in Technical Vocational Education for sustainable national development. Human capital development is an intriguing factor for sustainable development. Their study therefore particularly analysed the scope of human capital development in Technical and Vocational Education (TVE) in Nigeria and how it is related to sustainable national development. They emphasised on better infrastructure and quality teacher at all levels of TVE to enable production of required skilled labour force for sustainable development.

2.3 Trends in Reviewed Literature

Vocational education courses are considered as most vital component for human value development and hence for national development. Different researchers have explored many important aspects of vocational education and outcome of such research works are gainfully exploited by the policy makers. Although different researchers have studied many important aspects of vocational education as established by the review of literature, but to the knowledge of the investigator very few works are carried out so far on the status of vocational education courses in general degree colleges and most of the studies were carried out at higher secondary level.

Available literature on various aspects of vocational education carried out by different researchers / organizations have been collected and presented under different heads. At national level studies were found on implementation of Centrally Sponsored Scheme (CSS) Vaid & Sengupta (1990), Sacheti & Raizada (1990), Govt. Of Himachal Pradesh (1998) etc. Studies found on vocationalization of education at +2 stage by Advant (1985), Emannual (1990), Gupta (1990), Biswal (1992), Guru, Dhote & Ray (1992), Desai & Whiteside (2000), Gandhi (2012) and many more. Problems of vocational education were studied by Thimmaiah et. al. (1982), Bhargava (1991), Joshi (1992), Archana et. al. (1997), Prakash (1998), Arora (1999), Pandya (2000) etc.

Similarly Attitude and choice of vocational course by students were found to be studied by Robert (1998), Sungoh (1999), Kureshi (1990), Mohan & Gupta (1990) and Nagar (1991).

Evaluation of Vocational Education and Training was conducted by Government of TamilNadu (1994), IAMR (2001), Prasantha Kumar (2002), Tilak (2003), Bengeri (2007), Nagpal (2010), Barik (2010), Reddy, Devi and Reddy (2011) and few more. Another important aspect, planning and restructuring of vocational education was studied by Prakash & Gupta (2002), Chhikara & Singh (2002), Oberoi (2009), Sanjay (2010) and Sindhi (2013). Vocational Education Training through distance mode was studied by Lama (2012). Vocational interests of primary teachers were studied by Das (1991). Contribution of TVE towards sustainable development done by Goel (2010) and a comparative study was carried out by Bhatt (1972) and Misra (1994).

Analogous studies were also found to be carried out at international level. Studies on assessment of quality of teachers for vocational education was done by Bender (1964), Thomas & Lowell (1985) and Attaochu (2013), importance of vocational education and training by Mupinga (2004), Eichhorst, Rodriguez, Schmidi, Zimmermann (2012) and Ngure (2013) and few more. Studies on Vocational education for sustainable national development was carried out by Rufai, Obete & Onoh (2013) and studies on planning, implementation, nature, attitude and interest of vocational education courses was done by Blaug (1973), Belbase & Jung (1984) ,Maldonado, Leslie, Rivera and Blanca (2002), Low, Yoon, Roberts & Rounds (2005), Armstrong, Rounds & Hubert (2008) etc. Evaluative study on vocational education carried out by CERID (1979), Grubb (1985,) Qiu (1988), Collier & Mcmanus (2005), Raisanen & Rakkolainen (2009), Farooq, Ajmal and Rahman & Nafees (2011). Restructuring of VTE was studied by Boateng (2012).

Contribution and development of vocational education found to be analysed in the studies of Mustapha (1990), Weigel, Mulder & Collins (2007), Alam (2008), Zhang (2008), Curtin, Stanwick & Beddie (2011). Mclaughlin & Mills (2011) has investigated the issues related to Collaboration between Vocational education and Higher education. Difficulties associated with interlinking of VTE with industries were studied by Amu, Komla & Offei- Ansah (2011). Studies on employer's perception and teachers and

students views on vocational education were carried out by Azizi (2008) and Velde (2009).

It is evident from the review of literature that limited research works on vocationalization of general degree courses in degree colleges are performed. Particularly in Assam such type of research works are still in infant stage. Investigator has found only few studies carried out so far on the topic of vocational education. Studies were carried on polytechnic vocational education (Barooah, 1986), Vocationalization of secondary education (Lahkar & Kakati, 2008) vocational education in ITIs (Bhagawati, 2006), gender difference in choice of vocation by parents (Boruah & Phukan, 2010) and the like. But no studies were found on the vocational education courses at general degree colleges, which is a matter of grave concern for exploiting the real fruit of such programmes. This is because effective implementation of vocational education courses at tertiary level will pave the way for solving the issue of gross unemployment and will induce countries economic growth. Therefore it seems quite appropriate on the part of the investigator to study on the topic **"Vocational education courses in the general degree colleges under Gauhati University - An Evaluative Study"** for a more realistic approach, specifically for the state of Assam.

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CHAPTER – III

METHODOLOGY

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3.1 Research method

Research is a systematic study which demands a clearly chalked out methodology. Perfection of the methodology ensures the objectivity of findings leading to draw logical conclusion of the study. Research methods may be understood as all those methods or techniques that are used for conducting the research. In other words, all the methods which are used by the researcher during the course of studying his/her research problem are termed as research methods.[1] Research methods are of utmost importance in research process. They describe the various steps needed for having a research problem, the definition of the terms and the choice of subjects for investigation, the validation of data gathering tools, the collection of data, analysis and interpretation of data and drawing out inferences and generalizations.

All the educational research methods can be classified into three basic categories considering that all studies in the field of education fall under one or a combination of these three methods. These methods are:-

i) **Historical method:** It describes what was. The process involves investigating, recording, analyzing and interpreting the events of the past for the purpose of discovering generalizations that are helpful in understanding the past and the present.

ii) **Descriptive method:** It describes what is, describing, recording, analyzing and interpreting conditions that exist. It involves some type of comparison or contrast and attempts to discover relationships between existing non-manipulated variables.

iii) **Experimental method:** It describes what will be, when certain variables are carefully controlled or manipulated. The focus is on variable relationships. Deliberate manipulation is always a part of experimental method.

The present study falls under "Descriptive Survey Method". This is the most widely used research method in education. Descriptive research describes and interprets 'what is'. It is concerned with conditions or relationships that exist; practices that prevail; beliefs, point of view, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. A descriptive research is carried out with specific objectives and hence it results in definite conclusion. This research tries to describe the characteristics of the respondents in relation to a particular product or a practice of importance. Descriptive study would apply information on the current status of the problem in education.

Descriptive research includes surveys and fact- finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists present. The main characteristics of this method is that the researcher has no control over the variables; he/she can only report what has happened or what is happening.[2] Studies concerned with specific predictions, with narration of facts and characteristics concerning individual, institution, group or situation are all examples of descriptive research studies.

Descriptive studies may be classified into following three categories:-

a) Survey studies

b) Interrelationship studies

c) Developmental studies

(a) Survey studies:

The term survey has two constituents; sur which means over and veeir or vor which means to see. Accordingly, the word survey means 'to look over' or 'to oversee' and this is precisely what we understand by survey in social context.[3] Survey studies are conducted to collect detailed descriptions of existing phenomena with the intent of employing data to justify current conditions and practices or to make more intelligent plans for improving them. Survey studies may take different forms depending upon the scope, nature and purpose of the problem under investigation.

(b) Interrelationship studies

Some researchers in the field of education do not merely gather facts to obtain an accurate description of existing phenomena; they attempt to trace relationships between facts that will provide deeper insight into the phenomena. The studies that endeavour to discover relationship between various facts of the existing phenomena are called as interrelationship studies. This type of study includes - case study, casual- comparative study, cross- cultural and comparative studies etc.[4]

(c) Developmental studies

Developmental studies are used for investigating the characteristics of children and the ways in which these characteristics change with growth and development. Such studies are concerned not only with the present status and interrelationships of phenomena but also with changes that take place as a function of time. Developmental studies are also called as genetic studies .[5]

From the above discussion it is apparent that the present problem **"Vocational education courses in the general degree colleges under Gauhati University - An evaluative study"** needs Descriptive survey method of study as it is aimed to assess the present status of the various vocational education courses continued in different general degree colleges under Gauhati university in terms of students response, infrastructural facilities, faculty strength and other relevant parameters.

3.2 Research Design

Research design can be said to be the plan of action, the strategy and the structure of the overall procedure by which we intend to inculcate more knowledge of a specific problem or a specific aspect of the society. According to Jahoda and Selltiz, "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".[6]

In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. Research design in needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money.[7] Preparation of the research design should be done with great care as any error in it may upset the entire project. Research design, in fact, has a great bearing on the reliability of the results arrived at and as such constitutes the firm foundation of the entire edifice of the research work.

In the present research problem the population of the study represents all the affiliated general degree colleges under Gauhati University where vocational education courses are introduced. The colleges considered for the study are spanning over eleven districts of Assam. Investigator has visited all those colleges for obtaining data pertaining to the study. For the entire study individual opinion of the students pursuing vocational education courses and respective teachers were collected through different set of questionnaires supplied to them. An information schedule was also provided to the principal of the colleges. Questionnaires supplied to the students and teachers engaged in vocational education courses contained different pros and cons related to different objectives of the study. Students and teachers are selected on the basis of purposive sampling under non probability sampling plan. For the sake of convenience the investigator has considered the period from the year 2009 to 2011 for data collection.

3.3 Population of the Study

In order to make a proper understanding of any research work, it is highly necessary to define properly the population of the study. In simple words population can be defined as the basic requirement of any research work. If population of the research work is well defined then adoption of proper sampling procedure and selection of representative sample becomes quite easy. The population of the present study includes the principals, teachers and students of general degree colleges affiliated to Gauhati

University where vocational education courses are introduced. There are 191 colleges (As on 01-04-2011 G.U Affiliation List) affiliated to Gauhati University covering 14 districts namely- Kamrup (Rural/Metro), Dhubri, Bongaigaon ,Barpeta, Kokrajhar, Chirang, Darrang, Sonitpur, Morigaon, Nagaon, Goalpara, Nalbari, Baksa and Udalguri. Table – 2 provides the name of Districts and no of colleges affiliated to each district along with no of colleges where vocational education courses are introduced.

Table - 2 List of no of colleges where vocational education courses are introduced along with name of districts during 2009-2011.

Name of Districts	No of Affiliated general degree Colleges under Gauhati University	No of colleges where vocational education courses are introduced
Kamrup (Rural/Metro)	48	11
Darrang	05	Nil
Nalbari	11	1
Barpeta	24	2
Bongaigaon	08	2
Goalpara	09	2
Kokrajhar	10	2
Chirang	04	1
Udalguri	05	Nil
Baksa	07	Nil
Dhubri	15	2
Sonitpur	11	4

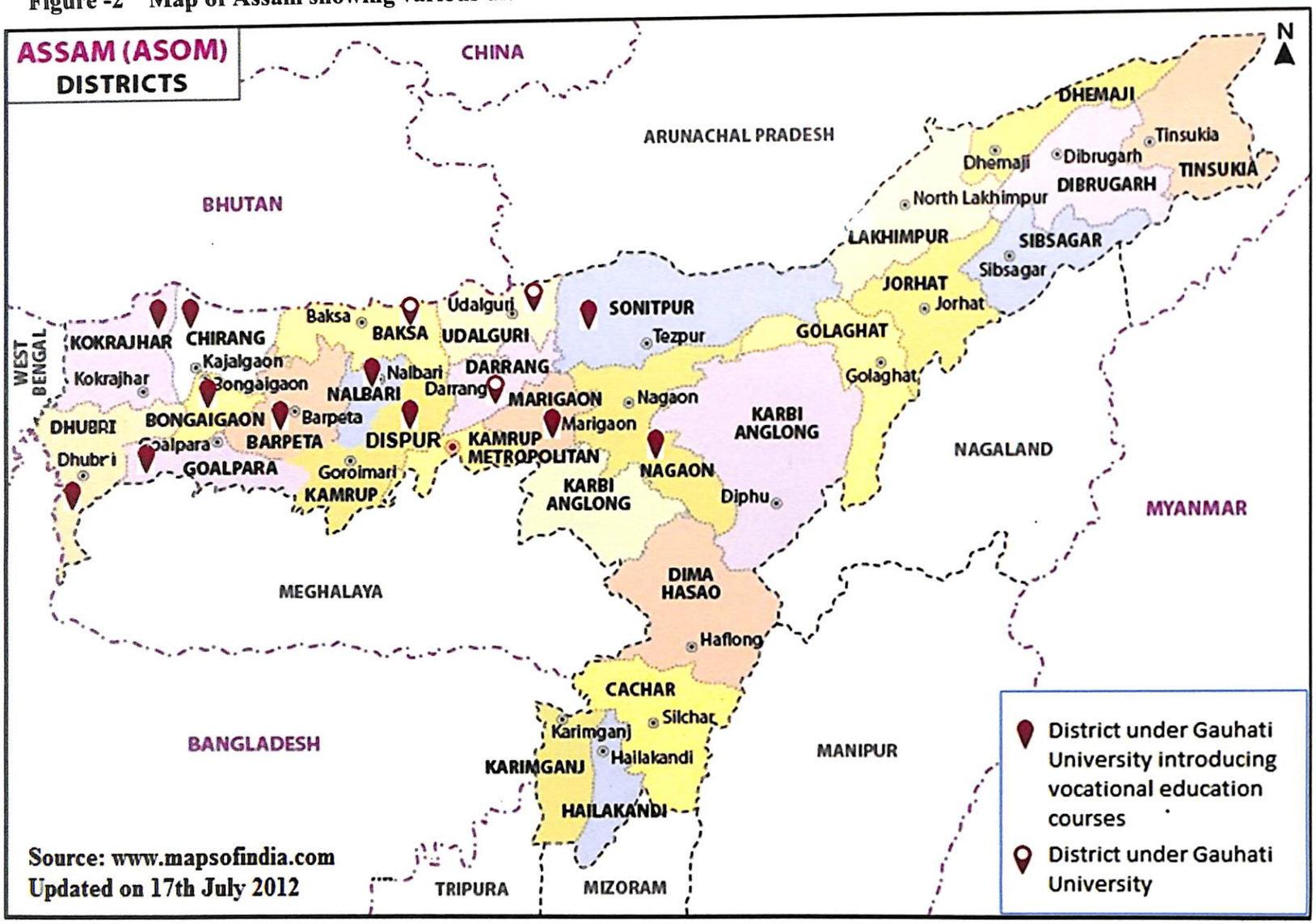
Morigaon	08	2
Nagaon	26	7
	Total: 191	**Total: 36**

Table - 2 contains the number of affiliated general degree colleges under Gauhati University which is 191 spreading over fourteen districts, as on 01.04.2011 according to the GU affiliation list. Investigator has found that out of 191 general degree colleges, only 36 colleges in eleven districts introduced vocational education courses during 2009 – 2011. Therefore the population of the study consists of all these 36 colleges affiliated to Gauhati University where vocational education courses are offered. The principals of these colleges, the teachers engaged in vocational education courses and the students pursuing vocational education courses are the population of the study. However the volume of student population pursuing vocational education courses and the teachers engaged in vocational education courses was not known to the researcher before starting the field survey.

Student's population for the study covers only those students who are pursuing vocational education courses during 2009 – 2010 & 2010 – 2011. After conducting the field survey for the 36 colleges under study, investigator has found a total of 1724 students during 2009 – 2010 and 1751 students during 2010 – 2011 pursuing vocational education courses. Similarly teacher's population for the study has been found 212 which include only those teachers who are engaged in teaching of vocational education courses during the period mentioned above. The study also includes the principals of all the 36 colleges.

The map presented in figure - 2 shows the location of the Districts under Gauhati University and the Districts where vocational education courses are introduced.

Figure -2 Map of Assam showing various districts under Gauhati University



3.4 The Sample and Sampling Design

After defining the population, the immediate task appears before the researcher is to draw an appropriate representative sample from the population which is indispensable. Usually the time, money and effort involved in the work do not permit a researcher to study all possible members of a population. Furthermore, it is generally not necessary to study all possible cases to understand the phenomenon under consideration. Sampling comes to the researcher's aid by enabling her to study a portion of the population rather than the entire population. Thus, sample is a smaller representative proportion of the population.

A sampling plan is a mechanism by which the sampling units of a study are selected from the sampling frame of the population. The selection of the sampling plan in a study in turn affects the cost and time to conduct the study, and the reliability of inferences of the study. Hence, it should be selected with utmost care.

The sampling plan can be classified into probability sampling plan and non-probability sampling plan.

In probability sampling plan each unit of the population has a probability of being selected as a unit of the sample. But this probability varies from one method to another method of probability sampling. This type of sampling is more rigorous and free from biases. Probability sampling are-

a) Simple random sampling

b) Systematic sampling

c) Stratified sampling

d) Cluster sampling

e) Multi-stage sampling

In non-probability sampling there may be instances that certain units of the population will have zero probability of selection, because judgement, biases and convenience of the interviewers are considered to be the criterion for the selection of sample units of such sampling. In non-probability sampling, members are selected from the population in some non-random manner. Non-probability sampling are-

a) Convenient sampling

b) Judgement sampling

c) Quota sampling

d) Snowball sampling

e) Purposive sampling

In the present study sampling has been done only in case of students and teachers because as already mentioned above, the number of colleges introducing vocational education courses are few in number i.e. only 36. So all the 36 colleges have been selected as sample college on the basis of saturated sampling method. Similarly all the 36 principals were also taken into consideration for the study. However the sample of student population are selected on the basis of purposive sampling method under non-probability sampling plan as the actual volume of population was not clearly known to the investigator. After the field survey it was found that 1751 students were pursuing vocational education courses in the 36 colleges during 2010-2011. Since it is virtually not possible to approach each and every student for data collection therefore investigator has decided to consider from each colleges approximately 20% (or more in few cases wherever the investigator finds it more convenient) of total students enrolled in vocational education courses. Another important point is that since among the 36 colleges there are few colleges where only either boys student or girls student are found in the vocational education courses, therefore the approximate 20% or more referred above does not consider boys and girls separately and considers only the total students enrolled in vocational education courses. Thus boys' and girls' students are selected on the basis of convenient sampling. In this way the investigator has found 380 students

out of 1751 students in all the 36 colleges and these 380 students are taken as sample for the study. Sample structure of the students in each college is presented in table – 3.

Table – 3 Sample structure of the students

Sl. No.	Name of the college	Total number of students pursuing vocational education courses	Approx. 20% of total students	Boys	Girls
1	Pandu college	78	16	10	6
2	Dimoria college	35	7	4	3
3	Pragjyotish college	27	5	2	3
4	Sonapur college	51	10	4	6
5	Cotton college	15	3	2	1
6	Arya Vidyapeeth college	51	10	4	6
7	Dispur college	81	16	5	11
8	Pachim Guwahati Mahavidyalaya	26	5	2	3
9	K.R.B.Girls'college	24	5	0	5
10	Suren Das college	61	12	5	7
11	D.K. college	92	18	11	7
12	Nowgong college	74	15	10	5
13	Nowgong Girls' college	66	13	0	13
14	Kaliabor college	26	5	2	3
15	Dr. B.K.B. college	12	2	0	2
16 *	A.D.P. college	128	39	27	12

17	Dhing college	81	16	8	8
18	Khagarijan college	30	6	4	2
19	Morigaon college	11	2	1	1
20	Jagiroad college	84	17	12	5
21	Tezpur college	16	3	2	1
22	Darrang college	33	7	3	4
23	THB college	56	11	7	4
24	Biswanath college	50	10	7	3
25	Dudhnoi college	21	4	3	1
26	Goalpara college	15	3	1	2
27	Chilarai college	38	8	6	2
28	Ratnapith college	16	3	2	1
29 *	MNC Balika Mahavidyalaya	188	56	0	56
30	Birjhora Mahavidyalaya	25	5	2	3
31	Bongaigaon college	98	20	14	6
32	Bajali college	60	12	8	4
33	N.H. college	31	6	4	2
34	Fakiragram college	11	2	1	1
35	Girls' college Kokrajhar	19	4	0	4

36	Bijni college	21	4	2	2
		Total 1751	**380**	**175**	**205**

* indicates the colleges where 30% students taken as sample because their total enrolment in vocational education courses is beyond 100 and the investigator found more number of students during the time of data collection.

Similarly same purposive sampling method has been followed for selection of the sample teachers. After the field survey the investigator found 212 teachers engaged in teaching vocational education courses in 36 general degree colleges. Taking approximately 60% of total teachers teaching vocational education courses in each college, the present study consists of 135 teachers as sample. The sample structure of teachers in each college is tabulated in table - 4.

Table - 4 Sample structure of the teachers

Serial No	Name of the college	Total teachers engaged in vocational education courses	Approx. 60% of total teachers
1	Pandu college	8	5
2	Dimoria college	3	2
3	Pragjyotish college	11	7
4	Sonapur college	3	2
5	Cotton college	4	3
6	Arya Vidyapeeth college	6	4
7	Dispur college	21	13
8	Pachim Guwahati Mahavidyalaya	1	1
9	K.R.B.Girls'college	4	3
10	Suren Das college	5	3

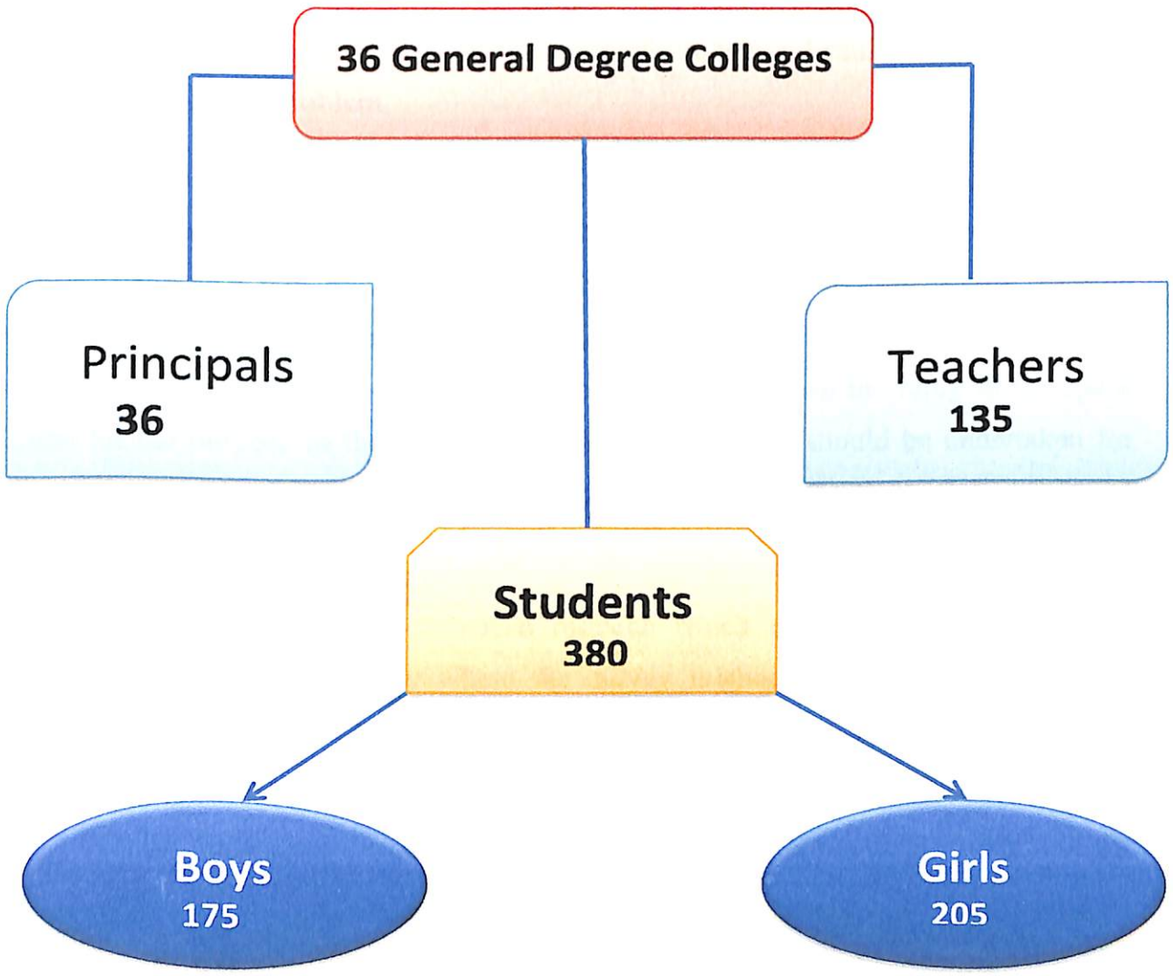
11	D.K. college	14	9
12	Nowgong college	5	3
13	Nowgong Girls' college	1	1
14	Kaliabor college	4	3
15	Dr. B.K.B. college	4	3
16	A.D.P. college	5	3
17	Dhing college	11	7
18	Khagarijan college	3	2
19	Morigaon college	2	1
20	Jagiroad college	9	6
21	Tezpur college	2	1
22	Darrang college	7	4
23	THB college	13	8
24	Biswanath college	8	5
25	Dudhnoi college	3	2
26	Goalpara college	7	4
27	Chilarai college	3	2
28	Ratnapith college	3	2
29	MNC Balika Mahavidyalaya	8	5
30	Birjhora Mahavidyalaya	3	2
31	Bongaigaon college	12	7
32	Bajali college	7	4
33	N.H. college	2	1
34	Fakiragram college	1	1

35	Girls' college Kokrajhar	5	3
36	Bijni college	4	3
		Total 212	**135**

In this way the present study consists of 380 students (175 boys and 205 girls), 135 teachers and 36 principals as final sample for the study.

Pictorial representation of the sample lay out is shown in Chart-1.

Chart-1 Sample lay out



3.5 Tools

For each and every type of research certain instruments are needed to gather new facts or to explore new fields. The instruments thus employed are called tools. The selection of suitable tools is of vital importance for successful research. A researcher will require many data- gathering tools or techniques which may vary in their complexity, design, administration and interpretation. From the available tools the investigator has to select the appropriate one which will provide data. For this the researcher should familiarize with the nature, merits and limitations of the research tools and should develop skill in the construction and use of each of these research tools.

For the present study the investigator has to select inquiry forms of tools. Among the inquiry forms questionnaire and information schedule are considered as suitable tools for the problem.

Questionnaire is meant a set of questions developed in an organised and ordered manner for gaining information from the people in relation to a given problem. Questionnaire as a tool of data collection is more frequently used in survey research than any other method. Generally the questionnaire is mailed to respondents who are expected to read and understood the questions and write down the reply in the space meant for the purpose in the questions itself .[8] Pilot studies should be undertaken for pre-testing the questionnaire. The question may be edited in the light of the results of the pilot study.

Schedule is a device in social research which is most frequently used in collecting field data especially where the survey method is employed. It contains questions and blank tables which are to be filled in by the investigators themselves after getting information from the respondents. According to goode and Hall, "Schedule is the name usually applied to a set of questions which are asked and filled in by an interviewer in a face to face situation with another person.''[9]

3.6 Description of Tools

For the present study the investigator prepared two self-structured questionnaire one for the students and other for the teachers. An information schedule was also constructed for the principals. The description of the tools is as follows -

1) A self-structured questionnaire was administered to the undergraduate students undertaking vocational education courses. The questionnaire consisted of two parts 'A' & 'B'. Part 'A' included some general information about the students and part 'B' included statements related to the objectives of the study. The questionnaire consisted of both close ended and open ended questions.

2) A self-structured questionnaire was administered to the teachers involving in teaching vocational education courses. In this case also the questionnaire consisted of two parts 'A' & 'B'. Part 'A' included some general information about the teachers and part 'B' included statements related to the objectives of the study. The questionnaire consisted of both close ended and open ended questions.

3) An information schedule was prepared for the principals of the colleges. It consisted of blank tables seeking information related to various aspects of vocational education courses.

Relevant secondary data for the study have been collected from the various sources like office records, reports and books etc.

3.7 Validity and Reliability of Tools

Validity of each tool is inherent and therefore it can be assumed that content wise it is capable of serving the purpose for which it was designed. It can also be stated that Content validity is embedded in each research tool. It was further confirmed by taking experts opinion in the concerned field as well as from the research supervisor. For further clarification cross verification of each tool was done on the basis of tryout of

the same on the representative sample. However, no statistical analysis was entertained to prove the validity of the tools.

3.8 Procedure for collection of Data

Data are the basic input to any decision-making process. Data are of two types- primary data and secondary data. The data which are collected from the field under the control and supervision of an investigator is known as primary data. If data collected from journals, magazines, govt. publication, annual reports etc. then such data are called secondary data.

For the present study the investigator went personally to all the colleges where vocational education courses are introduced. In the first phase of visit a total of twelve colleges belonging to Nagaon, Morigaon, Sonitpur and Kamrup districts were covered. During each visit principal of the college was approached first seeking his/her permission for collecting data from students and teachers engaged in vocational education courses. Teachers and students were provided with a self -structured questionnaire containing various queries pertaining to the vocational education courses. Procedures for filling up of the questionnaire were properly explained to them as the questionnaire contained both close ended and open ended questions. Additionally they were requested to provide their own opinion wherever they feel necessary and it has been ascertained to them that the information provided by them will be kept confidential. Most of the students and teachers took couple of days and even couple of weeks in some cases to fill up the questionnaire.

In the second phase remaining twenty-four colleges were visited and the same procedure was followed to collect data. The filled up questionnaires were collected and data obtained from those questionnaires were organized sequentially for thorough analysis.

In this way at the first phase 130 students (66 girls and 64 boys), 55 teachers and 12 Principals were considered. Again at the second phase using similar procedure necessary data were collected from 250 students (139 girls and 111 boys), 80 teachers

and 24 Principals. Therefore considering both the phases altogether 36 principals, 135 teachers and 380 students were taken for the study.

3.9 Statistical Techniques used

In the present study data have been analysed quantitatively using the following methods:

i) Tabulation of data

ii) Graphical representation

iii) Percentage calculation

Table: A table is a systematic method of presenting statistical data in vertical columns and horizontal rows, according to some classification of subject matter. Tables enable the reader to comprehend and interpret masses of data rapidly and to grasp significant details and relationships at a glance .[10]

Figure: A figure is a device that presents statistical data in graphic form. The term figure is applied to a wide variety of graphs, charts, maps, sketches, diagrams and drawings. When skillfully used, figures present aspects of data in a visualized form that may be clearly and easily understood. Figures should be intended as substitutes for textual description, but included to emphasize certain relationships.[11]

Diagrammatic and Graphical representation: Diagrams and graphs are vital aids that represent the data in simple and readily comprehensible form. They were usually more attractive and impressive than the numerical data. If well drawn, they are usually easier to read and interpret.

For the present study Bar diagram, Pie diagram, Line graph were used to present data on different occasion.

The Line graph: The line graph is useful in showing change in data relationships over a period of time. The horizontal axis usually measures the independent variable; the

vertical axis measures the characteristics. Graphical arrangement should proceed from left to right on the horizontal axis, and from bottom to top on the vertical axis.[12.]

Bar graph: The bar graph, which can be arranged either horizontally or vertically, represent data by bars of equal width, drawn to scale length. The numerical data may be lettered within the bar or outside it. A grid may be used to help quantify the graphic representation. In bar graphs, the bars are usually separated by space. Horizontal bar graphs are usually used to compare components at a particular time. Vertical bars are used when making comparisons at different times. [13]

Pie diagram: Pie charts show the division of a unit into its component parts. The radius is drawn vertically, and components are arranged in a clockwise direction in descending order of magnitude. The proportion of data is indicated by the number of degrees in each section of the 360- degree circle. This kind of data should be typed within the segment, if there is insufficient room for identification, a small arrow should point from the identification term to the segment.[14]

Present study considers data collected from the principals, students and teachers who are constantly associated with various vocational education courses. Data analysis were performed using appropriate statistical methods such as preparation of appropriate table and interpretation, calculation of percentages and using graphical diagrams for better representation of observed data. Depending on the objectives of the study, data collected are systematically organized and analyzed so as to make a proper understanding of the research work.

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CHAPTER – IV

ANALYSIS AND INTERPRETATION OF DATA

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter consists of analysis and interpretation of data, collected during the course of the study. Data collected from various sources are organized for obtaining a simplified view of the research topic and to analyze the status of vocational education courses continuing in the general degree colleges under Gauhati University. The data has been carefully analyzed in the light of the objectives with the help of tables and figures. Interpretation and analysis of data with respect to various objectives are presented below.

Objective -1: ***To study the profile of the vocational education courses provided by the general degree colleges under Gauhati University.***

To understand this objective an information schedule was given to all the principals of the 36 general degree colleges to elicit the responses towards the profile of vocational education courses continuing in their colleges. The investigator has collected the data for the period from 2009 to 2011. Prior to analysis of the objective, it is very much essential to present a concise statistical view about the study for clear perception, which is manifested in table - 5.

Data presented in table - 5 tells us about how many districts are covered under Gauhati University and how many of the districts introduced vocational education courses during the study period. In addition, total number of affiliated colleges under Gauhati University as on 01-04-2011 can also be known from the table along with the number of colleges introducing vocational education courses and number of courses found by the investigator. This compilation provides a glimpse of the entire study for systematic approach.

Table – 5 Concise statistical view of vocational education courses in different colleges under Gauhati University during 2009 – 2011

Districts under G.U	Districts where VE courses introduced	Districts where VE courses not introduced	General degree colleges under G.U (As on 01-04-2011)	colleges where VE courses introduced from 2009 to 2011	% of colleges where VE courses introduced	No of VE courses found during 2009 to 2011
14	11	03	191	36	18.84%	45

VE: Vocational Education

From the table - 5 it has been observed that district wise preference for vocational education courses is found almost satisfactory. However, if we look at the number of affiliated colleges under Gauhati University, the investigator found that few colleges have introduced vocational education courses during 2009 -2011. This is only 18.84% of total colleges. Therefore it can be stated that adequate measures need to be taken to popularize the vocational education courses so as to involve more number of colleges. From the table it has been observed that 45 different vocational education courses were continuing in 36 general degree colleges during the period from 2009 – 2011.

The investigator found a total of 36 general degree colleges where different vocational education courses are introduced. To analyse the profile of such a large number of colleges, it is not advantageous to accommodate the data in a single table. Therefore in order to provide a more simplified analysis, investigator has sub-divided the 36 number of colleges into three different groups as shown below. The data obtained for each group of colleges has been analysed separately and overall findings are finally presented.

GROUP A: Colleges under Kamrup District (Rural/Metro). 11 colleges are included in this group.

GROUP B: Colleges under Nagaon, Morigaon and Sonitpur Districts. This group contains 13 colleges.

GROUP C: Colleges under Goalpara, Dhubri, Chirang, Kokrajhar, Nalbari, Barpeta and Bongaigaon Districts. This group contains 12 colleges.

The data obtained for colleges under Group A are tabulated in Table - 6(a):

Table - 6(a) Name of the colleges, name of vocational education courses, sponsorship status and duration of the courses in the colleges under Kamrup district.

Name of the District	Name of the colleges	No of courses	Name of the courses	Sponsorship status	Course duration/ Nature of the course
KAMRUP DISTRICT	Pandu college	4	a) Computer Science & application	a) UGC sponsored	a) 1 year Certificate course
			b) Biotechnology	b) Self sustained	b) 6 months Certificate course
			c) Functional English	c) UGC sponsored	c) 1 year Certificate course
			d) Early childhood care and Education	d) UGC sponsored	d) 6 months Certificate course
	Dimoria college	2	a) Computer Science Networking, C++	a) Self sustained	a) 1 year Certificate course
			b) Beauty therapy	b) Self sustained	b) 1 year Certificate course

	Pragjyotish college	4	a) Industrial Fish and Fisheries	a) UGC sponsored	a) 3years degree course
			b) Functional English	b) UGC sponsored	b) 3years degree course
			c) Tourism and Travel Management	c) Self sustained	c) 3years degree course
			d) Information Technology	d) UGC Sponsored	d) 3years degree course
	Sonapur college	2	a) Tourism and Travel Management	a) Self sustained	a) 3 years degree course
			b) Information Technology	b) Self sustained	b) 3 years degree course
	Cotton college	1	a) Video production & Editing programme	a) UGC sponsored	a) 4 months Certificate course
	Arya Vidyapeeth college	2	a) Bioinformatics	a) UGC sponsored	a) 1year Certificate course
			b) Computer fundamentals, Certificate in Tally, Hardware networking & software personnel,	b) Self sustained	b) 3 / 4 / 6 months / 1 year Certificate course

			Web centric curriculum		
	Dispur college	4	a) BBA	a) UGC sponsored	a) 3 years degree course
			b) BCA	b) UGC sponsored	b) 3 years degree course
			c) Early Child care & Education	c) UGC sponsored	c) 1 years Diploma course
			d)Entrepreneurship Development	d) UGC sponsored	d) 6 months Certificate course
	Pachim Guwahati Mahavidyalaya	1	a) Tourism Management	a) Self sustained	a) 3years degree course
	K.R.B.Girls' college	1	a) Baking & Confectionery	a) UGC sponsored	a) 3 months Certificate course
	Suren Das college	4	a) Cutting, Knitting & Embroidery	a) Self sustained	a) 1 year Diploma course

			b) Photography	b) Self sustained	b) 6 months Certificate course
			c) Tourism & Travel Management	c) Self sustained	c) 2years Certificate course
			d) PGDCA	d) Self sustained	d) 6 months Certificate course
	D.K college	3	a) Instrumentation maintenance	a) UGC sponsored	a) 3 months Certificate course
			b) Folk Education	b) UGC sponsored	b) 3 months Certificate course
			c) Sericulture, Apiculture, Pisciculture & poultry Farming	c) UGC sponsored	c) 3 months Certificate course

The following observations are noted from the data provided in Table - 6(a):

1. It is observed from the findings that in Kamrup District (including R/M), 22.92% (11 out of 48) colleges introduced vocational education courses during 2009-2011.

2. Table - 6(a) showed that out of 11 colleges Dispur college, Pragjyotish college, Suren Das college and Pandu college has introduced highest number of vocational education courses i.e. 4 courses in each college followed by D.K college which introduced 3 vocational education courses. Similarly Dimoria

college, Sonapur college and Arya vidyapeeth college has introduced 2 vocational education courses each. Least number of vocational education courses were found in Cotton college, K.R.B Girls' college and Pachim Guwahati Mahavidyalaya where each college has introduced 1 vocational education course.

3. It is found that 36.36% colleges have introduced Tourism & Travel Management course as a certificate or degree course. This is followed by computer related courses such as Computer Science & Application, Tally, Hardware and Software Personnel, Networking etc. Such courses are found in 27.27% colleges. Study also reveals that courses like Functional English, Information technology and Early childhood care and education are also introduced with priority and 18.18% colleges have introduced these courses.

4. From the data on sponsorship status of the courses, it has been found that courses are either UGC sponsored or self-sustained. As per findings 57.14% courses are UGC sponsored and 42.86% courses are self-sustained. It reflects that for colleges under Kamrup district where vocational education courses are introduced, most of the courses are sponsored by UGC.

5. Findings of the study indicate that 20 Certificate courses, 3 Diploma courses and 9 Degree courses were continuing in these 11 colleges.

The data obtained for colleges under Group B are tabulated in Table - 6(b)

Table - 6(b) Name of the colleges, name of vocational education courses, sponsorship status and duration of the courses in the colleges under Nagaon, Morigaon and Sonitpur district

Name of Districts	Name of the Colleges	No. of courses	Name of the courses	Sponsorship status	Course Duration/ Nature of the course
NAGAON DISTRICT	Nowgong college	3	a) Soil & Water analysis	a) UGC sponsored	a) 6 months Certificate course
			b) Tourism & Travel Management	b) UGC sponsored	b) 1 year Certificate course
			c) Computer software	c) Electronic Corporation of India, Hyderabad	c) 1 year Advanced Diploma
	Nowgong Girl's College	1	a) Computer Science & application	a) Self sustained	a) 3months Certificate course
	Kaliabor college	2	a) Tourism & Travel Management	a) Self sustained	a) 1year Certificate course
			b) Functional English	b) Self sustained	b) 3 years degree course
	Dr. B.K.B College	2	a) Fashion, Textile & Interior designing	a) UGC sponsored	a) 1 year Certificate course
			b) Garment technology	b) UGC sponsored	b) 3 months Diploma

					course
	A.D.P.College	3	a) Computer Science & application	a) Self sustained	a) 3years degree course
			b) Electronic Instrument maintenance	b) UGC sponsored	b) 1year Diploma course
			c) Fashion designing	c) UGC sponsored	c) 1 year Diploma course
	Dhing college	5	a) Fashion & Dress designing	a) UGC sponsored	a) 1year / 6months Diploma course
			b) Computer & Information technology	b) UGC sponsored	b) 1 year Diploma course
			c) Fish & Fishery products	c) UGC sponsored	c) 1 year Diploma course
			d) Tourism & Travel Management	d) UGC sponsored	d) 1year Diploma course
			e) Functional English	e) UGC sponsored	e) 1year Diploma course
	Khagarijan college	1	a) Functional English	a) UGC sponsored	a) 6months Certificate course
MORIGAON DISTRICT	Morigaon college	2	a) Tourism & Travel Management	a) Self sustained	a) 1year Certificate course
			b) Bio-mass	b) Self	b) 6months Certificate

				sustained	course
	Jagiroad college	2	a) Tourism & Travel Management	a) Self sustained	a) 3years degree course
			b) Computer Science & application	b) Self sustained	c) 3years degree course
SONITPUR DISTRICT	Tezpur college	1	a) Tourism & Travel Management	a) UGC sponsored / Self sustained	a) 6months Diploma course / 3years degree course
	Darrang college	4	a) Mobile repairing, Electronics & computer hardware	a) Self sustained	a) 6months Certificate course
			b) Laboratory technician	b) Self sustained	b) 6months Certificate course
			c)Biotechnology	c) Self sustained	c) 1year Certificate course
			d) Conservation ecology	d) Self sustained (WWF India collaboration)	d) 3months Certificate course
	THB college	3	a) Industrial Fish & Fisheries	a) UGC sponsored	a) 6months Certificate course
			b) Sericulture	b) UGC sponsored	b) 6months Certificate course

			c) Food processing & Preservation	c) UGC sponsored	c) 6months Certificate course
	Biswanath college	2	a) Functional English	a) Self sustained	a) 3years degree course
			b) Tea Husbandry	b) UGC sponsored	b) 6months Certificate course

The following observations are noted from the data provided in Table - 6(b):

1. In Nagaon district 26.92% (7 out of 26) colleges have introduced vocational education courses among the total affiliated colleges under Gauhati University. Similarly in Morigaon district 25% (2 out of 8) and in Sonitpur district 36.36% (4 out of 11) colleges have introduced vocational education courses from 2009-2011.

2. Table - 6(b) shows that out of 13 colleges Dhing college is at the top with highest number of vocational education courses (5 courses) followed by Darrang college (4 courses). Next to these two colleges, Nowgong college, A.D.P college and T.H.B college has introduced 3 numbers of vocational education courses each. In the same way Kaliabor college, Dr. B.K.B college, Morigaon college, Jagiroad college and Biswanath college is just above the bottom line with 2 vocational education courses. Only 1 vocational education course has been found at Nowgong Girls' college, Khagarijan college and Tezpur college.

3. Table - 6(b) indicates that Out of 13 colleges 46.15% colleges have introduced Tourism & Travel Management course. In the same way Functional English course is introduced by 30.77% colleges. 'Computer Science & Application' and 'Fashion and dress designing' courses have been introduced by 23.07% colleges. 15.38% colleges have introduced 'Industrial Fish & Fisheries' and 'Computer hardware & software' courses. Overall it can be ascertained that Tourism & Travel management course has attracted more interest from the colleges.

4. Regarding sponsorship status of different vocational education courses it is observed that 53.12% courses are UGC sponsored, 43.75% are Self-sustained and remaining 1 course is sponsored by Electronic Corporation of India, Hyderabad.

5. It has been observed that 16 Certificate courses, 10 Diploma courses and 6 Degree courses are introduced in these 13 colleges.

The data obtained for colleges under Group C are tabulated in Table - 6(c):

Table - 6(c) Name of the colleges, name of vocational education courses, sponsorship status and duration of the courses in the colleges under Goalpara, Dhubri, Chirang, Kokrajhar, Nalbari, Barpeta and Bongaigaon Districts

Name of Districts	Name of the colleges	No. of courses	Name of the courses	Sponsorship status	Course Duration/ Nature of the course
GOALPARA DISTRICT	Dhudhnoi college	1	a) Entry in Service	a) UGC sponsored	a) 3months Certificate course
	Goalpara college	2	a) Tourism & Hospitality Studies	a) UGC sponsored	a) 1year Certificate course
			b) Biofertilizer	b) UGC sponsored	b) 1year Certificate course
DHUBRI DISTRICT	Chilarai college	1	a) Tourism & Travel Management	a) Self sustained	a) 3years degree course
	Ratnapith college	2	a) Forestry & Wild life Management	a) UGC sponsored	a) 3years degree course

			b) Creative writing & appreciation Literature	b) UGC sponsored	b) 1year Certificate course
CHIRANG DISTRICT	Bijni college	1	a) Functional English	a) UGC sponsored	a) 3years degree course
NALBARI DISTRICT	MNC Balika Mahavidyalaya	5	a) Beauty Care	a) Self sustained	a) 1year Certificate course
			b) Craft & Art	b) Self sustained	b) 1year Certificate course
			c) Communicative skill	c) Self sustained	c) 1year Certificate course
			d) Montessori method	d) Self sustained	d) 1year Certificate course
			e) C-Dac	e) Self sustained	e) 6 months / 1year Certificate course
BONGAIGAON DISTRICT	Birjhora Mahavidyalaya	1	a) Information Technology	a) UGC sponsored	a) 3years degree course
	Bongaigaon college	4	a) Mass communication	a) UGC sponsored	a) 1year Certificate course/3years degree course
			b) BBA	b) Self sustained	b) 3years degree course
			c) DOEACC	c) Ministry of	c) 3months

				Communication & Information Technology	Certificate course
			d) Taxation Practice& Procedure	d) Self sustained	d) 3/6 months Certificate course
BARPETA DISTRICT	Bajali college	2	a) Tourism & Travel Management	a) Self sustained	a) 3years degree course
			b) Secretarial practice & Office Management	b) UGC sponsored	b) 6months Certificate course
	N.H college	1	a) Functional English	a) Self sustained	a) 6months Certificate course
KOKRAJHAR DISTRICT	Fakiragram college	1	a) Tourism & Travel Management	a) Self sustained	a) 3years degree course
	Girls' College Kokrajhar	2	a) Tourism & Travel Management	a) Self sustained	a) 3years degree course
			b) Functional English	b) Self sustained	b) 3years degree course

Observations realized from Table - 6(c) are as follows:

1. Investigator has found very few vocational education courses in this group of colleges. In Nalbari district only 9.09% of affiliated colleges have introduced vocational education courses. For Barpeta district the figure is still lower i.e. 8.33% (2 out of 24). In case of other districts of this group namely Bongaigaon, Goalpara, Kokrajhar, Chirang and Dhubri, investigator has found that respectively 25%,

22.22%, 20.0%, 25% and 13.33% affiliated colleges have introduced vocational education courses.

2. Data presented in this table are collected from 12 colleges of group C where vocational education courses are introduced. Regarding the number of courses in each college, the table 6(c) indicates that MNC Balika Mahavidyalaya has introduced highest 5 numbers of vocational education courses. Next to this, Bongaigaon college has introduced 4 vocational education courses. Similarly Bajali college, Ratnapith college, Goalpara college and Girls' college, Kokrajhar has introduced 2 vocational education courses each. The colleges namely Fakiragram college, N.H college, Birjhora mahavidyalaya, Bijni college, Chilarai college and Dudhnoi college have introduced only one vocational course each.

3. Like other two groups, for this group also 'Tourism and Travel Management' course garnered highest response. Findings of the study reveal that 41.67% colleges from this group have introduced 'Tourism & Travel Management' followed by 'Functional English' (25% colleges). However for other vocational education courses no two colleges have found to introduce the same course.

4. Analysis of the sponsorship status of the vocational education courses of this group, investigator has found that 56.52% courses are Self-sustained, 39.13% courses are UGC sponsored and 1 course is sponsored by Ministry of Communication & Information Technology.

5. Table – 6(c) reveals that 16 Certificate courses and 10 Degree courses were continuing in these 12 colleges. However, no diploma courses have been found.

Overall findings for objective – 1, analyzed from the data collected from 36 colleges as presented in three tables – 6(a), 6(b) & 6(c), are summarized as follows:

a. During the course of the study it has been found that in 14 districts under Gauhati University, there are 191 affiliated general degree colleges out of which 36 colleges in 11 districts have introduced vocational education courses. Not a single college has introduced vocational education courses in Darrang, Udalguri and Baksa district as per findings of the study. Therefore it can be ascertained that only 18.84% of

general degree colleges have introduced vocational education courses during 2009 – 2011. This fact indicates that till 2011 very few colleges have realized the importance of vocational education which is not encouraging for the states like Assam.

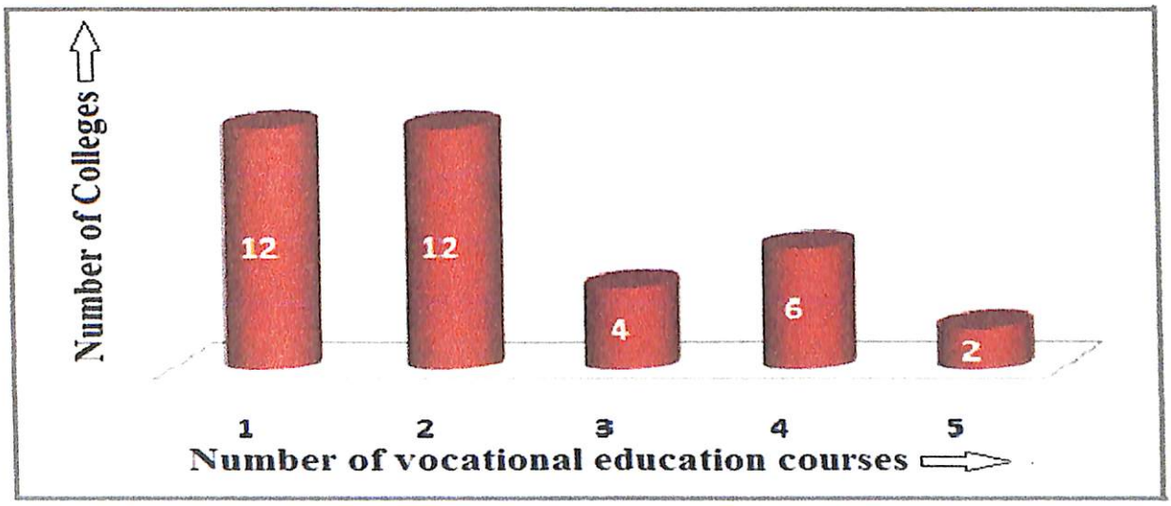
b. There is variation in the number of vocational education courses offered by the colleges which ranges from 1course to 5 courses. Findings reveal that 66.66% of colleges have introduced only 1 or 2 courses. Table – 7 presents the range of vocational education courses offered by the 36 colleges.

Table – 7 Range of vocational education courses offered in the colleges

Number of College	Number of courses in each college
2	5
6	4
4	3
12	2
12	1

Figure – 3 represents the bar projection of the range of vocational education courses offered in the colleges

Figure – 3 Bar projection of range of vocational education courses



From table - 7, it has been observed that maximum five numbers of vocational education courses are introduced in two colleges namely Dhing college and MNC Balika Mahavidyalaya. In other words only 5.56% of total general degree colleges have introduced maximum number of vocational education courses. 16.67% of colleges have introduced four number of vocational education courses. These colleges are Dispur college, Pragjyotish college, Suren Das college, Pandu college, Darrang college and Bongaigaon college. Again 8.33% of total degree colleges have introduced 3 numbers of vocational education courses. D.K college, Nowgong college, A.D.P college and T.H.B college are in the list of such colleges.

It has also been observed that 33.33% of college i.e. 12 colleges have introduced only 2 numbers of vocational education courses. These colleges are- Dimoria college, Sonapur college, Arya Vidyapeeth college, Kaliabor college, Dr. B.K.B college, Morigaon college, Jagiroad college , Biswanath college, Bajali college, Ratnapith college, Goalpara college, Girls' college Kokrajhar. Remaining 33.33% of colleges have introduced only 1 course as vocational education. Those colleges are- Cotton college, K.R.B college, Pachim Guwahati Mahavidyalaya, Khagarijan college, Nowgong girl's college, Tezpur college, Fakiragram college, N.H college, Birjhora Mahavidyalaya, Bijni college, Chilarai college and Dudhnoi college.

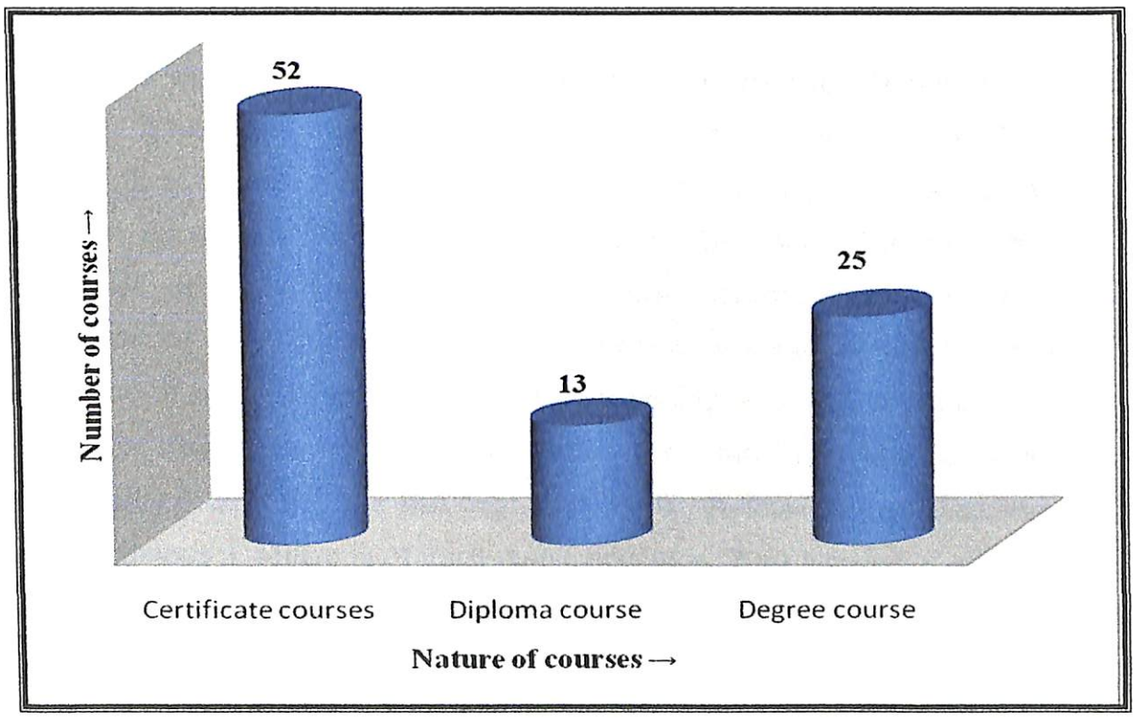
c. Inference drawn from the data analysis of objective – 1 indicates that Tourism and Travel Management course has attracted greater response among all other vocational education courses. Greater employment prospect and student's interest might be the guiding force for the college authority to introduce the course. Out of 36 general degree colleges offering vocational education, 15 colleges i.e. 41.66% have introduced Tourism & Travel Management course in their curriculum. Similarly compared to other remaining courses Functional English course also garnered significant response from the colleges. Findings show that 25% colleges have introduced this course along with other vocational education courses. Computer Science & Application, Computer hardware / software, Computer fundamentals, Networking and other computer related courses are also preferred in

good number of colleges. These courses are found in 22.22% of total degree colleges.

Apart from these, Information Technology course also attracted significant interest and 11.11% colleges have introduced it. Industrial Fish & Fisheries and Fashion, Dress & Interior Designing have also evoked marked response as is evident from the fact that each course has been implemented in 8.33% colleges. Other vocational education courses like Early Childhood Care & Education, BBA, Electronic Instrument Maintenance, Beauty therapy & Care, Biotechnology and Sericulture have been introduce in those 36 general degree colleges. Each of these courses was found to introduce by 2 colleges.

d. Findings of the study reveal three different natures of vocational education courses. These are Certificate course, Diploma course and Degree course. Most of the courses are certificate course of various duration while others are either diploma or degree course. Degree courses are usually of three years duration. A representative bar diagram for quantitative distribution of certificate course, diploma courses and degree course continuing in 36 colleges under observation is given in figure – 4.

Figure - 4 Bar projection of nature of courses.



In order to understand the complete nature of the courses, duration of the courses has been studied by the investigator. It has been revealed from the study that certificate and diploma courses are of different duration. However duration of all the degree courses is three years. Overall observation noted by the investigator for duration of the courses is tabulated in table – 8.

Table – 8 Number of courses with duration.

Nature of the course	Number of courses with duration						Total number of courses
	3 months	4 months	6 months	12 months	24 months	36 months	
Certificate course	10	2	19	20	1	-----	52
Diploma course	1	-----	2	10	-----	-----	13
Degree course	-----	-----	-----	-----	-----	25	25

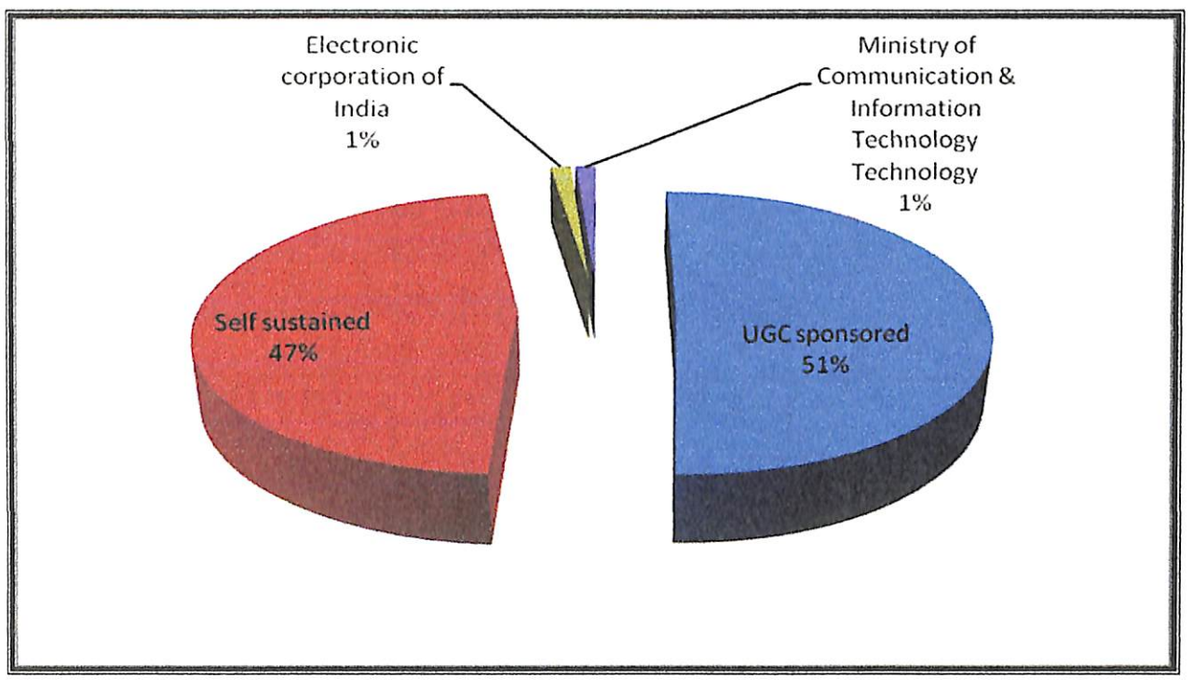
Total - 90

The perusal of the result presented in table – 8 are indicative of the fact that majority of the courses are certificate course which is reflected in the respective percentage. It has been observed that 57.78% courses are certificate course, 27.78% courses are degree course and only 14.44% courses are diploma course. Again analyzing the duration of the courses the investigator has found that the certificate courses are of different durations. Thus 10 certificate courses are of three months duration, 2 courses are of four months duration, 19 courses are of six months duration, 20 courses are of one year duration and 1 certificate course is of two years duration. Among the certificate course, 1year certificate course mostly predominates in the colleges. Similar observation has also been noted for the diploma courses. Thus among the diploma courses 1 course is of three months duration, 2 courses are of six months duration and 10 courses are of 1 year duration. However no variation has been found for the duration of degree courses. All degree courses are of 3 years duration. It is

anticipated that longer duration courses can ensure wide exposure to technical and conceptual knowledge which can develop properly skilled manpower and will also enhance the job prospect of passed out students. Therefore introduction of vocational education courses with longer duration can be considered as more appropriate.

e. Without proper sponsor or financial security it is not possible for a college to go on with the vocational education courses. From the studies on sponsorship status of the courses, investigator has found that 50.60% courses are sponsored by UGC and 46.98% courses are self-sustained. Few other courses (~ 2%) are sponsored by other agencies like Electronic Corporation of India, Hyderabad and Ministry of Communication & Information Technology. Pie – diagram depicted in figure – 5 represents clear distribution of sponsorship status of the vocational education courses. Investigator believes that UGC's positive initiatives to promote vocational education courses will certainly encourage college authorities to expand the periphery of vocational education courses.

Figure – 5 Pie projection of Sponsorship status of various vocational education courses in 36 colleges under study:



Objective – 2: ***To study the infrastructural facilities and equipment available for mobilization of the vocational education courses in the general degree colleges under Gauhati University***

Infrastructural facilities and availability of the equipment are the key parameters in determining the success of a course. Particularly for vocational education courses proper infrastructure and laboratory facilities are very much essential. In order to study these aspects related information has been collected from principals, teachers and students by providing questionnaire and information schedule to them as well as through interaction wherever possible.

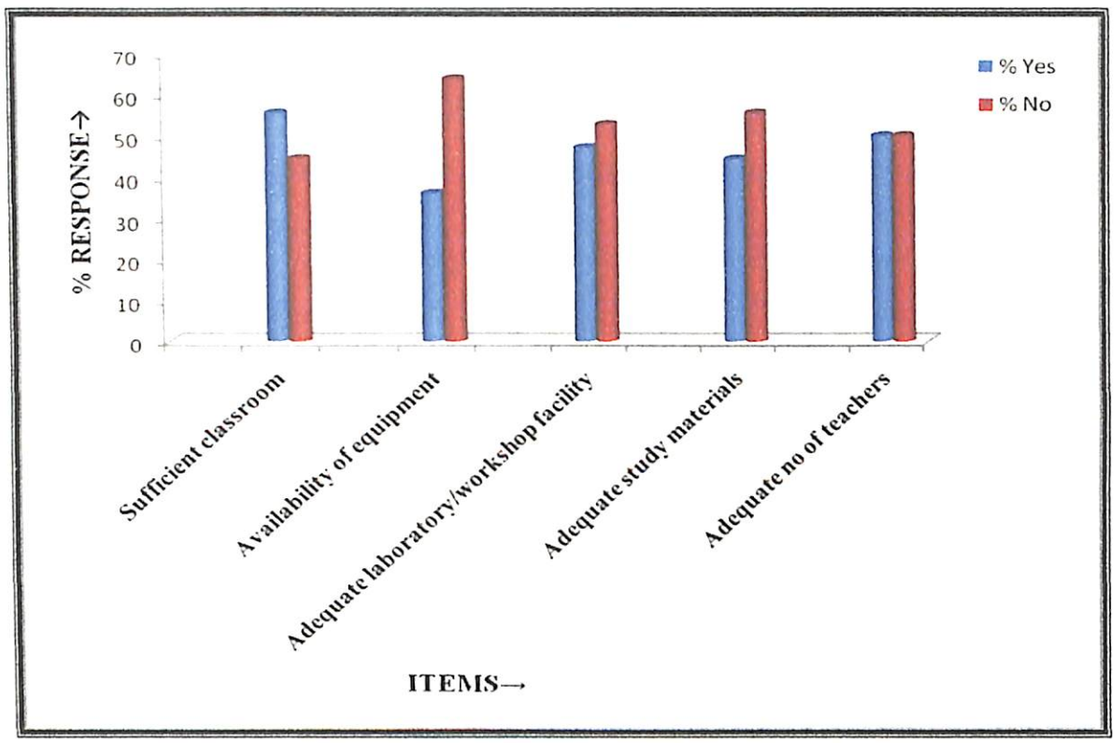
Principals of 36 colleges have shown differences in their views regarding various aspects related to infrastructural facilities and availability of equipment. These are presented in table – 9.

Table – 9 Principal's view

Querries	Yes	% Yes	No	% No
Sufficient classroom	20	55.55	16	44.45
Availability of equipment	13	36.11	23	63.89
Adequate laboratory/workshop facility	17	47.22	19	52.78
Adequate study materials	16	44.44	20	55.56
Adequate no of teachers	18	50	18	50

For better apprenhension, views of the principals are represented through a bar diagram in figure – 6.

Figure - 6 Bar projection of Principal's view



From table – 9 it has been observed that 55.55% of the Principals are contented with the availability of class room for the vocational education courses. Without sufficient number of teachers it is very much difficult to continue the vocational education courses. In this regard investigator has found that 50% principals are satisfied with the number of faculty members engaged in vocational education courses. As far as adequate laboratory facilities and study materials required for the courses are concerned most of the principals expressed their dissatisfaction. According to 55.56% principals study materials provided for the courses are not sufficient. Again 52.78% principals are not satisfied with laboratory and workshop facilities. Greater dissatisfaction was reflected in case of availability of equipment. 63.89% principals mentioned that equipment provided for the courses were not sufficient. It is obvious that without appropriate equipment and adequate study materials as well as Laboratory and workshop facilities, success of vocational education courses will be a far reality.

Student's and teacher's view regarding the infrastructural facilities and avalability of equipment are equally important to analyse the status of vocational education courses in the general degree colleges. For that purpose two separate

questionnaire were provided to 380 students and 135 teachers from 36 degree colleges. Responses received from them against different querries are tabulated in Table – 10.

A bar projection for the data presented in table – 10 is shown in figure – 7.

Table – 10 Response received from students and teachers

Items	Responses of students and teachers regarding availability / adequacy			
	Students (380)		Teachers (135)	
	Yes	No	Yes	No
Sufficient equipment	175 (46.05)	205 (53.95)	63 (46.67)	72 (53.33)
Well furnished classroom	250 (65.79)	130 (34.21)	70 (51.85)	65 (48.15)
separate classroom for vocational classes	190 (50)	190 (50)	68 (50.37)	67 (49.63)
Adequate laboratory	92 (24.21)	288 (75.79)	58 (42.96)	77 (57.04)
Adequate number of faculty	180 (47.37)	200 (52.63)	65 (48.15)	70 (51.85)
Study materials	150 (39.47)	230 (60.53)	61 (45.19)	74 (54.81)

Figure – 7 Bar projection of the responses received from students and teachers

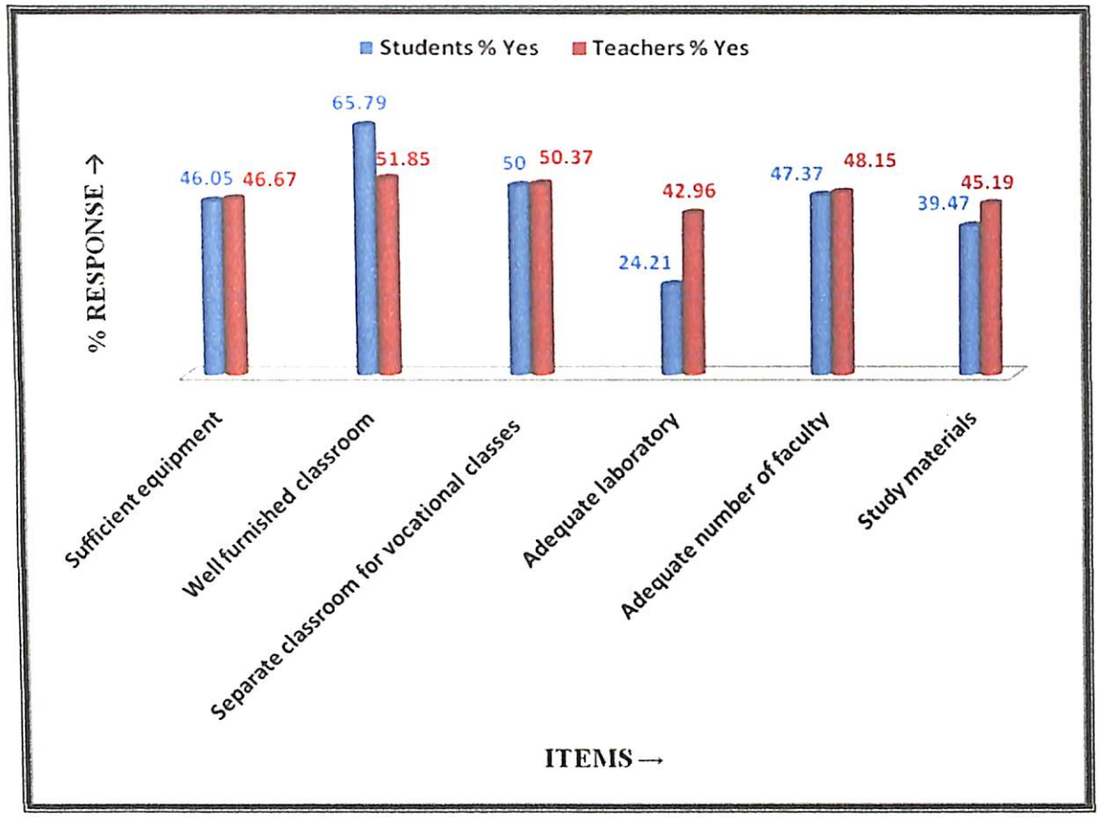


Table – 10 depicts that in case of equipment facility, separate class room for vocational classes and adequate number of faculty, student's view resembles with teacher's view. Students and teachers have positive views about well furnished class room. 65.79% students and 51.85% teachers believe that well furnished classrooms are provided for vocational education courses. Regarding laboratory facilities only 24.21% of students expressed their positive response. Study reveals that even teachers were also not contented with the laboratory facilities. Only 42.96% of teachers believes that adequate laboratory facilities were provided for the students of vocational education courses. This is indeed a matter of great concern that needs immediate attention. Analogous views are reflected in the responses received from teachers and students against availability of adequate study materials. According to 60.53% students and 54.81% teachers adequate study materials were not provided for the vocational education courses.

In order to find out an overall assessment from the views of Principals, students and teachers regarding infrastructural facilities and availability of equipment for vocational education courses, a comparative analysis has been made based on the positive responses obtained from 36 principals, 380 students and 135 teachers. The comparison is menifested in table – 11. Bar projection of their views against different querries is also presented in figure – 8 for better understanding.

Table - 11 Positive response from principals, teachers and students regarding infrastructural facilities and availability of equipment

Items	Principals (36)	Teachers (135)	Students (380)
	Yes	Yes	Yes
Sufficient Classroom	20 (55.55)	68 (50.37)	190 (50.00)
Availability of equipment	13 (36.11)	63 (46.67)	175 (46.05)
Adequate Laboratory / Workshop facility	17 (47.22)	58 (42.96)	92 (24.21)
Adequate study materials	16 (44.44)	61 (45.19)	150 (39.47)
Adequate number of teachers	18 (50.00)	65 (48.15)	180 (47.37)

Figure – 8 Bar projection for positive response of principals, teachers and students

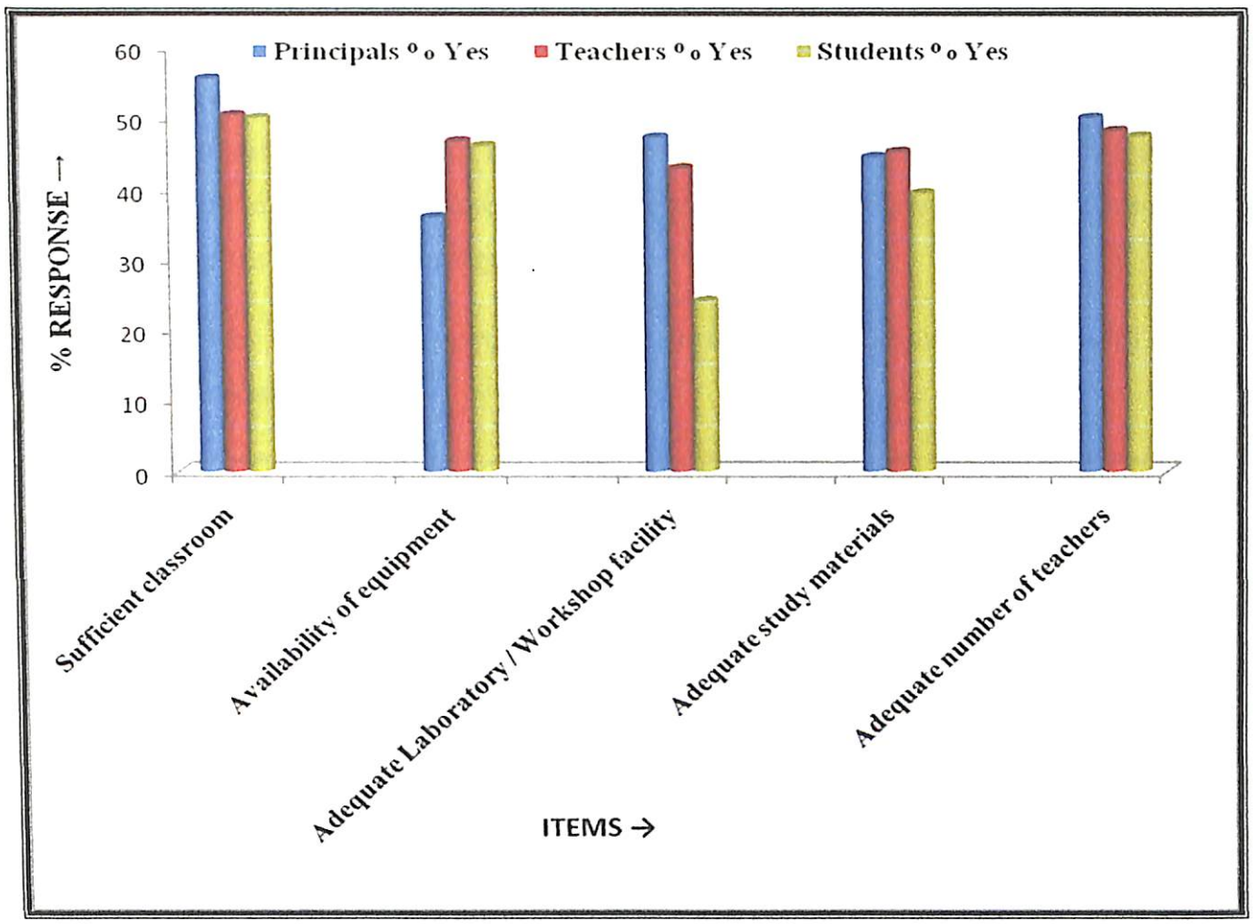
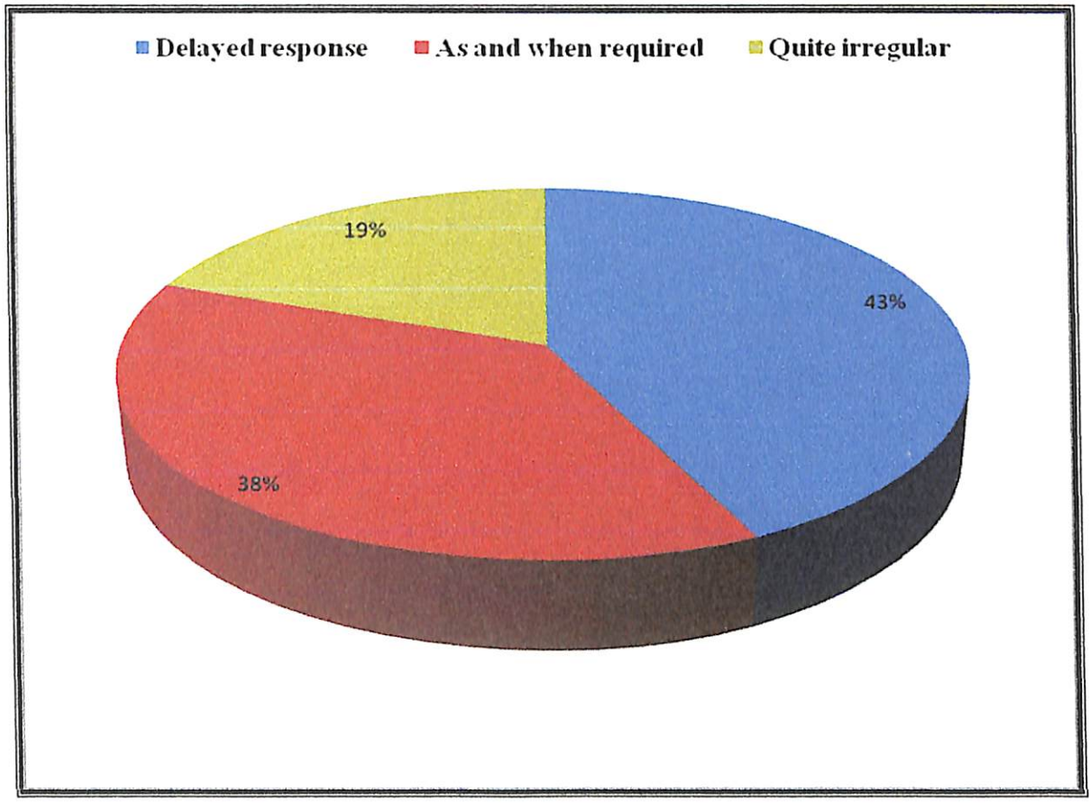


Table – 11 reveals that regarding availability of classroom for conducting vocational classes, 50% of students and teachers have expressed their positive view, while 55% Principals have commented positive in this regard. Compared to teachers and principals, students were relatively unhappy about laboratory facilities and study materials. 24.21% students believes that adequate laboratory and workshop facilities are provided for vocational education courses. However in contrast to students, 47.22 % Principals and 42.96% teachers mentioned that adequate laboratory and workshop facilities are provided. Findings of the study thus indicates that non availability of laboratory and workshop facilities is a vital problem associated with vocational education courses. Again 46.67% teachers and 46.05% students have mentioned that sufficient equipment are provided for vocational education courses, whreas only 36.11% principals believes the same. Without proper equipment facilities it is really difficult to

deliver the exact knowledge to the students and as a result the main objective of vocational education to produce properly skilled persons could not be achieved.

Arrangement of such facilities is entirely dependent on fund received from government agencies. Therefore querries were placed to the teachers asking them about the ease of obtaining government funds for procurement of sophisticated equipment for different vocational education courses. Responses obtained from them are represented with a Pie-diagram as shown in figure – 9.

Figure - 9 Pie diagram representing teachers view about the ease of fund clearance



It has been observed from the pie diagram that there are irregularities in receiving government funds for continuing the vocational education courses. Investigator has observed that 42.96% of teachers have mentioned about somewhat delayed response in fund clearence whereas 37.77% teachers have stated that funds are received as and when required. According to the response of the rest 19.25% teachers, funding from government side is quite irregular.

Objective - 3 ***To study students' participation and faculty strength in various vocational education courses in the general degree colleges under Gauhati University.***

Students' participation in various vocational education courses and the faculty strength for each course was collected through an information schedule submitted to all the Principals of 36 general degree colleges. Since college wise tabulation of student's participation in each vocational education courses along with the faculty strength produces a very long table, therefore information collected from the principals of 36 colleges with respect to the information schedule provided are summarized in table – 12. Details about sex wise and course wise participation of students in vocational education courses referred in table – 12 along with the faculty strength for each college, is given in Appendix – VI.

Table – 12 **Sex wise and course wise total students' participation in various vocational education courses and faculty strength of these courses during 2009-2010 & 2010-2011**

Name of the course	No of colleges introduced the course	Student enrolment						Faculty strength	
		2009-2010			2010-2011			Full time	Part time/ guest
		Boys	Girls	Total	Boys	Girls	Total		
Tourism & Travel Management and Tourism & Hospitality Studies	15	142 (19.77)	136 (13.51)	278 (16.12)	138 (18.90)	136 (13.32)	274 (15.65)	18	14
Functional English	9	114 (15.87)	128 (12.72)	242 (14.03)	78 (10.68)	118 (11.56)	196 (11.19)	15	11
Laboratory technician	1	03 (0.41)	04 (0.39)	07 (0.400	05 (0.68)	03 (0.29)	08 (0.46)	0	2
Computer Science & Application	4	64 (8.91)	113 (11.23)	177 (10.27)	79 (10.82)	130 (12.73)	209 (11.94)	7	3
Fashion Designing	1	00 (00)	08 (0.79)	08 (0.46)	00 (00)	09 (0.88)	09 (0.51)	1	0

Fashion & Dress Designing	1	00 (00)	20 (1.99)	20 (1.16)	00 (00)	18 (1.76)	18 (1.03)	0	2
Fashion, Textile & Interior Designing	1	02 (0.28)	08 (0.79)	10 (0.58)	00 (00)	06 (0.59)	06 (0.34)	0	3
Mobile repairing, Electronics & computer hardware	1	04 (0.55)	03 (0.29)	07 (0.41)	05 (0.68)	04 (0.39)	09 (0.51)	0	2
Computer (Networking & c++), Computer fundamentals, Tally, Web centric curriculam, C-Dac	3	35 (4.87)	49 (4.87)	84 (4.87)	33 (4.52)	53 (5.19)	86 (4.91)	6	0
Beauty therapy & care	2	00 (00)	79 (7.85)	79 (4.58)	00 (00)	67 (6.56)	67 (3.83)	0	3
Soil & Water analysis	1	10 (1.39)	10 (0.99)	20 (1.16)	12 (1.64)	10 (0.98)	22 (1.26)	0	2
Conservation ecology	1	06 (0.83)	01 (0.09)	07 (0.41)	04 (0.55)	02 (0.19)	06 (0.34)	0	1
Biotechnology	2	11 (1.53)	11 (1.09)	22 (1.28)	15 (2.05)	11 (1.08)	26 (1.48)	0	3

Computer & Information technology	4	51 (7.10)	39 (3.88)	90 (5.22)	51 (6.99)	40 (3.92)	91 (5.20)	7	3
Garment technology	1	00 (00)	06 (0.60)	06 (0.35)	00 (00)	06 (0.59)	06 (0.34)	0	1
Electronic Instrument Maintenance	2	31 (4.31)	00 (00)	31 (1.80)	40 (5.48)	00 (00)	40 (2.28)	1	2
Early Childhood Care & Education	2	00 (00)	21 (2.09)	21 (1.21)	00 (00)	18 (1.76)	18 (1.03)	2	4
Computer software	1	20 (2.78)	15 (1.49)	35 (2.03)	22 (3.01)	18 (1.76)	40 (2.28)	1	0
Biomass	1	02 (0.28)	00 (00)	02 (0.12)	01 (0.14)	00 (00)	01 (0.06)	0	1
Biofertilizer	1	02 (0.28)	03 (0.30)	05 (0.29)	06 (0.82)	08 (0.78)	14 (0.80)	4	1
Mass communication	1	19 (2.65)	06 (0.60)	25 (1.45)	16 (2.19)	09 (0.88)	25 (1.43)	0	2

Entry in service	1	08 (1.11)	12 (1.19)	20 (1.16)	15 (2.05)	06 (0.59)	21 (1.20)	1	2
Taxation practice & Procedure	1	06 (0.83)	03 (0.30)	09 (0.52)	04 (0.55)	02 (0.20)	06 (0.34)	0	3
BBA	2	25 (3.48)	12 (1.19)	37 (2.15)	30 (4.11)	17 (1.67)	47 (2.68)	7	5
BCA	1	15 (2.09)	10 (0.99)	25 (1.45)	18 (2.47)	07 (0.69)	25 (1.43)	3	2
Entrepreneurship Development	1	10 (1.39)	04 (0.39)	14 (0.81)	10 (1.37)	06 (0.59)	16 (0.91)	3	2
Industrial Fish & Fishery Products	3	25 (3.48)	12 (1.19)	37 (2.15)	26 (3.56)	12 (1.18)	38 (2.17)	4	6
Bioinformatics	1	00 (00)	02 (0.20)	02 (0.11)	06 (0.82)	11 (1.08)	17 (0.97)	3	1
Forestry & Wild life Management	1	10 (1.39)	05 (0.49)	15 (0.87)	10 (1.37)	02 (0.20)	12 (0.69)	1	0

DOEACC (only for girls)	1	00 (00)	40 (3.98)	40 (2.32)	00 (00)	50 (4.90)	50 (2.86)	2	0
Video production & Editing	1	10 (1.39)	03 (0.30)	13 (0.75)	11 (1.51)	04 (0.39)	15 (0.86)	2	2
Secretarial practice & Office Management	1	15 (2.09)	09 (0.89)	24 (1.39)	16 (2.19)	14 (1.37)	30 (1.71)	0	4
Creative writing & appreciation literature	1	18 (2.51)	03 (0.30)	21 (1.22)	01 (0.14)	03 (0.29)	04 (0.23)	2	0
Folk Education	1	12 (1.67)	28 (2.78)	40 (2.32)	25 (3.42)	20 (1.96)	45 (2.57)	0	3
PGDCA	1	05 (0.70)	01 (0.09)	06 (0.35)	04 (0.55)	02 (0.20)	06 (0.34)	0	1
Photography	1	12 (1.67)	08 (0.80)	20 (1.16)	16 (2.19)	03 (0.29)	19 (1.09)	0	1
Apiculture, Pisciculture & Poultry farming	1	10 (1.39)	00 (00)	10 (0.58)	12 (1.64)	00 (00)	12 (0.69)	2	2

Cutting, Knitting & Embroidery	1	00 (00)	25 (2.49)	25 (1.45)	00 (00)	30 (2.94)	30 (1.71)	1	0
Baking & Confectionery	1	00 (00)	20 (1.99)	20 (1.16)	00 (00)	24 (2.35)	24 (1.37)	3	1
Tea Husbandry	1	11 (1.53)	00 (00)	11 (0.64)	10 (1.37)	00 (00)	10 (0.57)	1	2
Food processing & preservation	1	00 (00)	08 (0.80)	08 (0.46)	00 (00)	18 (1.76)	18 (1.03)	2	2
Sericulture	2	10 (1.39)	15 (1.49)	25 (1.45)	11 (1.51)	20 (1.96)	31 (1.77)	5	5
Craft & Art	1	00 (00)	50 (4.97)	50 (2.90)	00 (00)	45 (4.41)	45 (2.57)	0	2
Communicative skill	1	00 (00)	40 (3.98)	40 (2.32)	00 (00)	28 (2.74)	28 (1.60)	0	1
Montessori method	1	00 (00)	36 (3.58)	36 (2.09)	00 (00)	31 (3.04)	31 (1.77)	0	1
	Total	**718**	**1006**	**1724**	**730**	**1021**	**1751**		

The following observations are noted from the data provided in Table – 12.

1. During the session 2009 – 2010 and 2010 – 2011 investigator has found total 45 vocational courses in 36 general degree colleges under Gauhati University. Among these courses highest number of student's participation is observed in Tourism and Travel Management course followed by Functional English. Student's enrolment in Tourism & Travel Management course during 2009-2010 and 2010-2011 session was 16.12% and 15.65% of total vocational enrolment respectively. Corresponding figure for Functional English course for the two sessions estimated as 14.03% and 11.19%. Significant student's participation was also found in Computer science & Application course. Findings show 10.27% and 11.94% students participated in this course during 2009-2010 and 2010 – 2011. Relatively more students participation observed in these three courses which might be due to student's interest or better employment prospects.

2. Lowest number of student's participation is found in Biomass and Bioinformatics course during 2009 – 2010 session. Table – 12 reveals that only 0.12% students participated in both the courses. Finding shows even during 2010 – 2011 session student's participation in Biomass course was lowest again i.e. 0.06% of total vocational enrolment. Second lowest student's participation during 2010 – 2011 was recorded in Creative writing & appreciation literature and only 0.23% students participated in that course. Possible reasons of poor student's participation in these courses may be attributed to lack of student's interest, inappropriate infrastructural and poor employment prospects.

3. Investigator has observed that apart from the courses having highest and lowest student's participations, there are few other vocational education courses which were able to attract moderate to good student's response. Percentage of student's participation in some of these courses during 2010 – 2011 session are a) Computer Networking, Tally and C++, C Dac (4.91%) b) Beauty therapy & Care (3.83%) c) Information Technology (4.02%) d) Computer Software (2.28%) e) BBA (2.68%) f) Industrial Fish & fishery products (2.17%) g) Folk education (2.57%) h) Electronic Instrument Maintenance (2.28%) and so on.

4. Investigator has also studied sex wise participation of students in various vocational education courses and depending on the nature of the course sex wise preference was reflected in student's enrolment. Among the three courses mentioned above where higher student's participation was observed, for Tourism & Travel Management course almost equal participation by boys and girls student was noted (51.08% & 50.36% boys against 48.92% & 49.63% girls during 2009 – 2010 & 2010 – 2011 respectively). But for Functional English and Computer Science & Application course compared to boys, girls' participation was relatively higher. Percentage of girls' participation for Functional English course during 2009 – 2010 and 2010 - 2011 sessions was estimated as 52.89% & 60.20% respectively. For Computer Science & Application course corresponding percentage for girl's participation was 63.84% and 62.20%.

5. Findings of the study reveal that there are some particular courses which are predominantly participated either by boys' student or by girls' student. Vocational education courses like Fashion and Dress Designing, Beauty care, Garment Technology, Early childhood care & Education, Cutting, knitting & Embroidery, Baking and Confectionery and Food processing & Preservation are participated by only girls' students. Similarly the courses like Electronic Instrument Maintenance, Biomass, Apiculture, Pisciculture, Poultry farming and Tea husbandry participated by only boys' students.

6. Success of vocational education courses depend mostly on adequate number of faculties engaged in those courses. Investigator has found that vocational courses in 36 general degree colleges are conducted with full time and part time teachers. Although a total of 212 teachers are engaged in different vocational courses in these 36 colleges but as per findings of the study only 104 are working on full time basis while 108 teachers are working on part-time basis. Colleges are yet to appoint more full time teachers for smooth running of the vocational courses.

7. Data presented in table – 12 clearly shows the percentage of students participation in all 45 different vocational education courses. Although for some courses student's response is good or moderate but for some other courses student's response is very poor. For a clear visual representation a pie – diagram for students participation in 45 different courses is given in figure – 10 for the session 2009 – 2010.

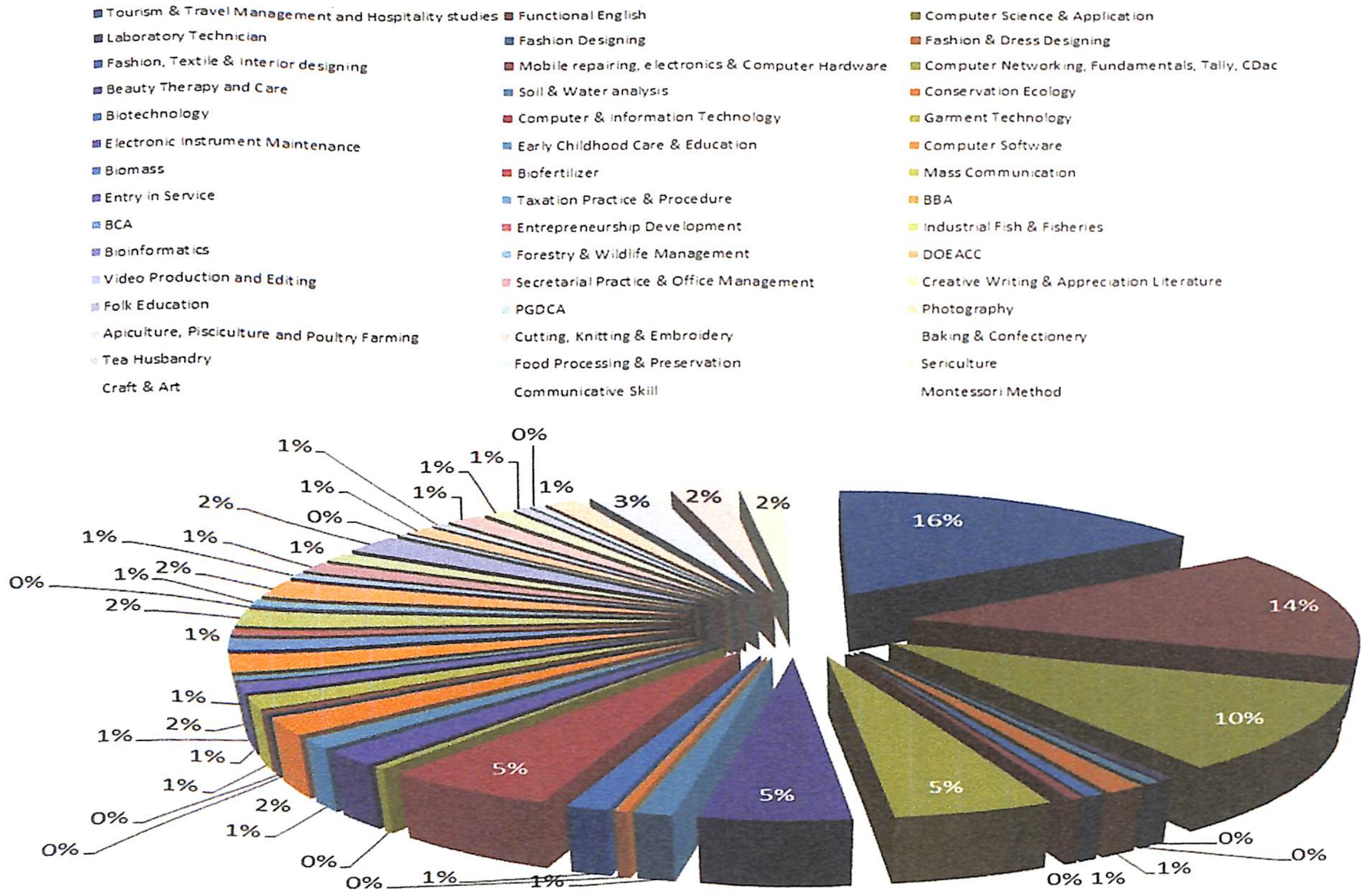


Figure - 10 Pie projection of total participation of students in 45 different vocational education courses for the session 2009 - 2010

8. In order to make a comparative study between enrolment of students in 36 general degree colleges at degree level and participation of students in vocational education courses, investigator collected data on enrolment of students at degree level in these 36 general degree colleges for the session 2010-2011, from 63rd Annual Report, Gauhati University. Data for participation of students in vocational education courses are collected through information schedule which was filled up by the principals of 36 colleges during the time of field study. Data obtained from university source and from the information schedule supplied to the principals by the investigator are compiled in table – 13. Collegewise Bar projection of total enrolment at degree level and enrolment of students in vocational education courses for the session 2010 – 2011 is shown in figure – 11 for a better understanding.

Table - 13 College wise total enrolment of students(boys & girls) at degree level and enrolment in vocational education courses for the session 2010-2011

Name of the College	Boys enrolment at degree level	Girls enrolment at degree level	Total enrolment at degree level	Boys participation in vocational courses	Girls participation in vocational courses	Total participation in vocational courses	% of total participation in vocational courses
Pandu college	386	548	934	39	39	78	8.35
Dimoria college	255	243	498	12	23	35	7.02
Pragjyotish college	726	623	1349	16	11	27	2.00
Sonapur college	218	268	486	22	29	51	10.49
Cotton college	482	1191	1673	11	04	15	0.89
Arya Vidyapeeth	1099	897	1996	27	24	51	2.55

college							
Dispur college	510	311	821	48	33	81	9.86
Pachim Guwahati Mahavidyalaya	483	371	854	25	01	26	3.04
K.R.B girls' college	-----	446	446	------	24	24	5.38
Suren Das college	546	419	965	25	36	61	6.32
D.K college	756	876	1632	62	30	92	5.63
Nowgong college	1143	1308	2451	34	40	74	3.01
Nowgong Girls'	-----	1176	1176	-----	66	66	5.61

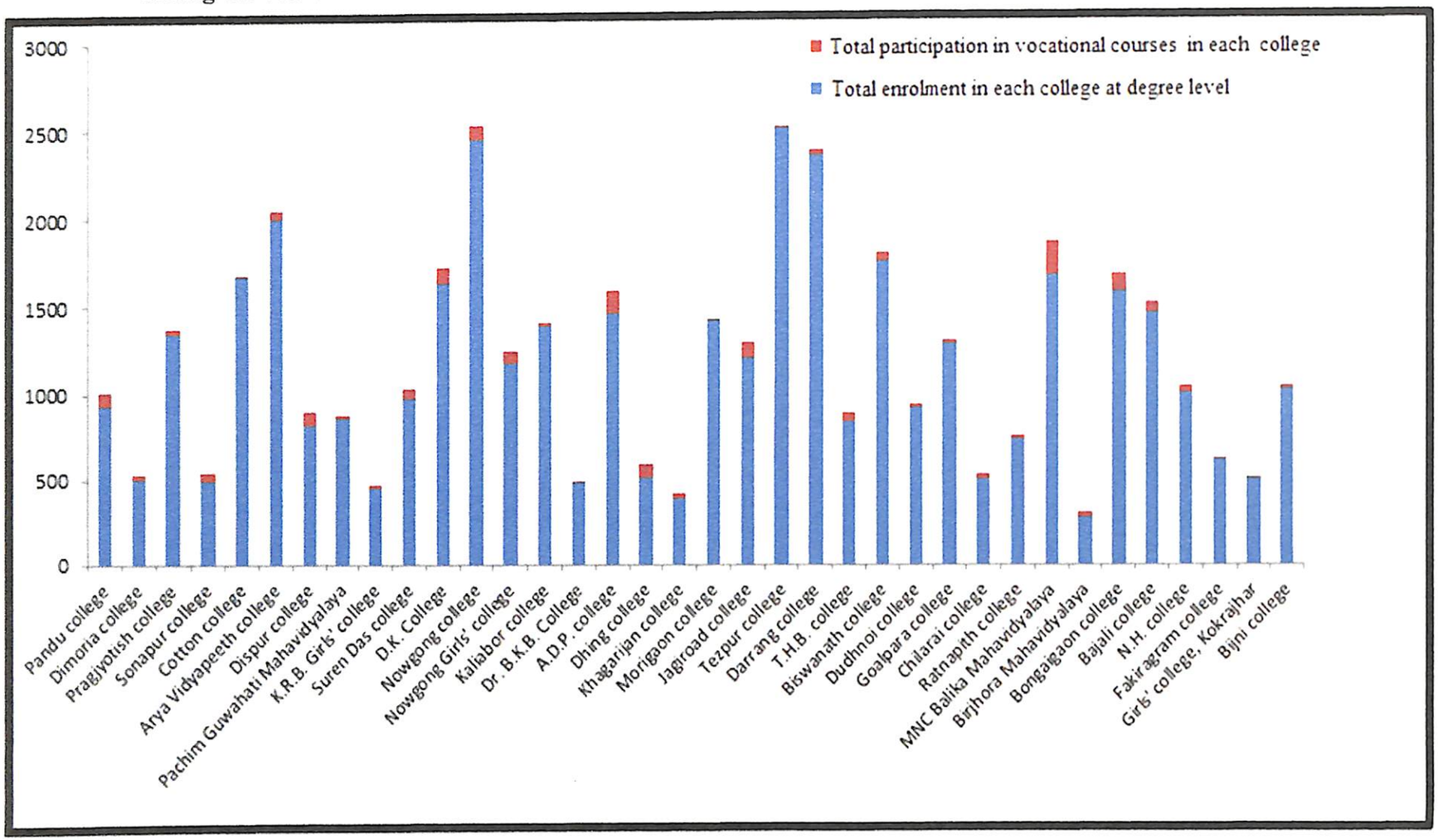
college							
Kaliabor college	723	662	1385	15	11	26	1.87
Dr. BKB college	202	280	482	-	12	12	2.48
ADP college	1032	431	1463	76	52	128	8.74
Dhing college	238	274	512	34	47	81	15.82
Khagarijan college	218	175	393	12	18	30	7.63
Morigaon college	680	736	1416	07	04	11	0.77
Jagiroad college	532	677	1209	44	40	84	6.95
Tezpur	1583	925	2508	07	09	16	0.63

college							
Darrang college	1056	1296	2352	20	13	33	1.40
THB college	430	407	837	21	35	56	6.69
Biswanath college	721	1038	1759	25	25	50	2.84
Dudhnoi college	472	442	914	15	06	21	2.30
Goalpara college	657	632	1289	07	08	15	1.16
Chilarai college	246	252	498	15	23	38	7.63
Ratnapith college	418	318	736	11	05	16	2.17
MNC Balika Mahavidyalaya	------	1677	1677	-------	188	188	11.21

Birjhora Mahavidyalaya	168	111	279	19	06	25	8.96
Bongaigaon college	894	688	1582	30	68	98	6.19
Bajali college	668	794	1462	32	28	60	4.10
N.H college	548	457	1005	05	26	31	3.08
Fakiragram college	451	158	609	05	06	11	1.81
Girls' college Kokrajhar	-----	497	497	-----	19	19	3.82
Bijni college	473	552	1025	09	12	21	2.04
Total	**19014**	**22156**	**41170**	**730**	**1021**	**1751**	

Source : Total enrolment of the students at degree level for the session 2010-2011 (63rd Annual Report, Gauhati University) & field survey.

Figure – 11 Bar projection of total enrolment in each college at degree level and total participation in vocational courses during the session 2010 – 2011



Data presented in table – 13 and from the figure – 11 it has been observed that compared to total enrolment of students at degree level in 36 general degree colleges, participation of students in vocational education courses is poor. However in case of few colleges, participation of students in vocational education courses was relatively better. For example in case of Dhing College 15.82 % of total students participated in vocational education courses. Similarly in MNC Balika Mahavidyalaya 11.21 %, in Dispur college 9.86%, in Birjhora Mahavidyalaya 8.96%, in ADP College 8.74% and in Pandu college 8.35% of total students participated in vocational education courses. Very poor participation in vocational education courses was observed for Tezpur college, Morigaon college and Cotton college. In these colleges less than 1% of students participated in vocational education courses. In Tezpur college 0.63%, in Morigaon college 0.77% and in Cotton college 0.89% of total students participated in vocational education course.

Another significant finding is that out of total vocational enrolment in 36 colleges, 74.19 % students were from 16 colleges. Remaining 20 colleges shared only 25.81% of total vocational enrolment. From the figure – 11 it is clear that participation of students in vocational education courses till the study period was not satisfactory in the colleges under Gauhati University. Therefore vocational education courses in these degree colleges either should be replaced with some alternate vocational course that fulfils the local need or need to be improved with incorporation of more features.

9. Investigator has tried to make another comparison between participation of total students in vocational education courses with that of total students enrolled in general degree courses during the session 2009 – 2010 & 2010 – 2011. The data pertaining to these are presented in table - 14. In this case two separate bar diagram are presented in figure – 12 & figure – 13. Figure – 12 shows bar projection for comparison of total students enrolled in vocational education with that of general education during both the session. Again figure – 13 represents bar projection of total boys' and girls' student separately with that of total boys and girls enrolled in general degree course during 2009 – 2010 & 2010 – 2011.

Table – 14 Total enrolment of students (Boys & Girls) in 36 general degree colleges and total participation of students (Boys and Girls) in vocational education courses for the session 2009 – 2010 & 2010 – 2011:

Total number of sample college	Session	Total Enrolment of Boys & Girls		Total enrolment of students	Total participation of Boys & Girls in vocational education courses		Total participation of students in vocation education courses	% of Boys & Girls participated in vocational education courses	
		Boys	Girls		Boys	Girls		Boys	Girls
36	2009-2010	18989	22109	41098	718	1006	1724	41.64%	58.35 %
	2010-2011	19014	22156	41170	730	1021	1751	41.69%	58.30 %

Figure –12 Bar projection of total enrolment of students in 36 general degree colleges and total participation of students in vocational education courses during 2009 – 2010 & 2010 – 2011

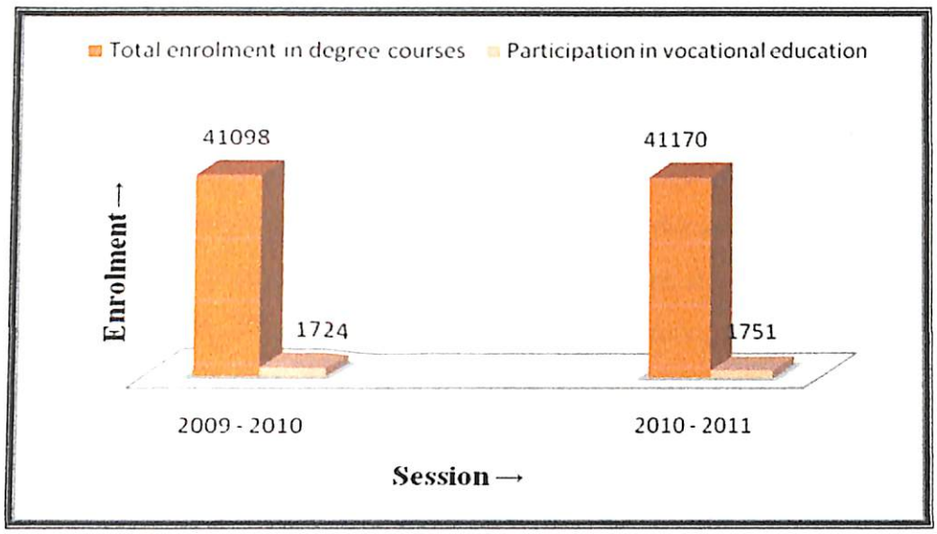
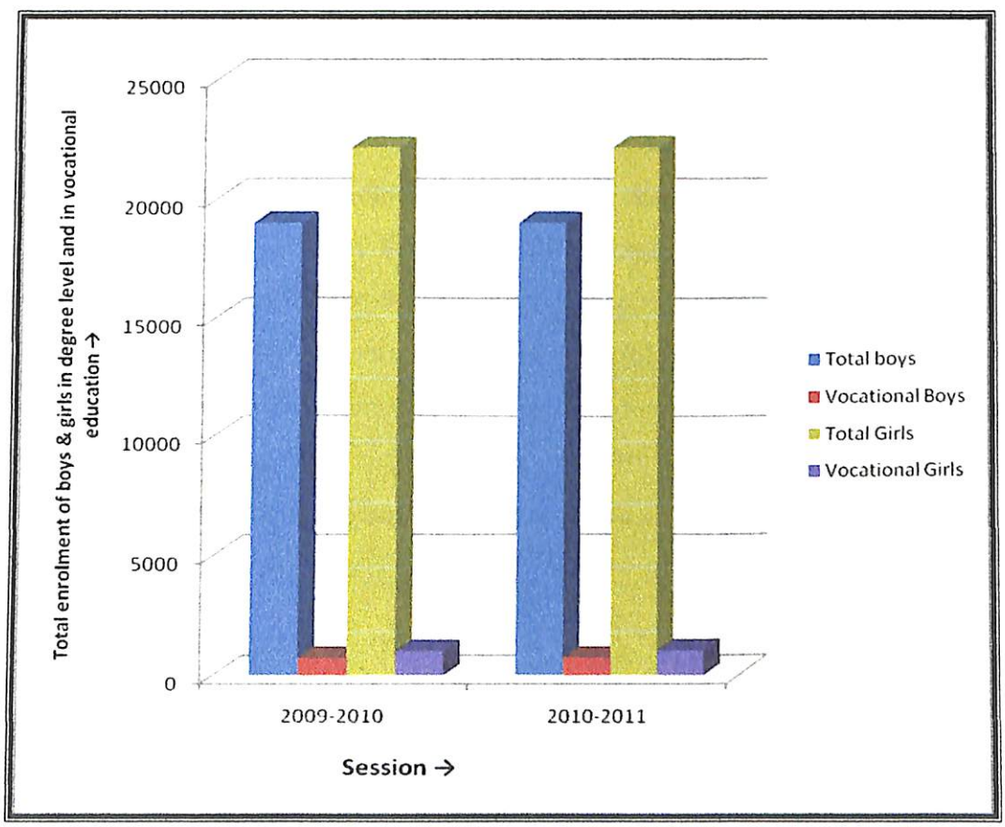


Figure – 13 Bar projection of total enrolment of boys & girls in degree level and in vocational education courses during the session 2009 – 2010 & 2010 – 2011



Data presented in Table – 14 reveals that compared to boys', girls' participation in vocational education courses was more during both the session (2009-2010 & 2010-2011). Findings also show that total enrolment of girls in 36 general degree colleges during both the session was significantly higher than total enrolment of boys. During 2009 – 2010, total number of girls students enrolled in the sample colleges was 22,109 against 18,989 of boys student. Similar observation was also noted during the period 2010 – 2011. A relative comparison of total enrolment of students in 36 general degree colleges and total participation of students in vocational education courses during 2009 – 2010 & 2010 – 2011 is presented in figure – 12. From the figure it has been observed that during the session 2009 – 2010 only 4.19 % of total students participated in vocational education courses. During the period 2010 – 2011 the situation was only slightly improved where 4.25% of total students participated in vocational education courses. As a whole, the overall participation of students in vocational education courses during both the session was significantly lower.

Figure – 13 which represents total enrolment of boys' and girls' separately in general degree courses and in vocational education courses. It represents a clear scenario of the enrolment status during the session 2009 – 2010 & 2010 – 2011. It has been observed from the figure that during both the session enrolment of girls' student in general degree courses as well as in vocational education courses was higher compared to boys. The Investigator believes the following possible reasons behind increasing participation of girls in vocational education courses. More participation of girls' students may be due to the fact that out of 36 sample general degree colleges, four colleges are girl's college. Second reason may be girls' students are more motivated towards vocational education courses. Third possible reason may be the colleges introduced such courses which can attract the girls' more than the boys'. Whatever may be the reason, findings of the study indicates that as far as enrolment of students is concerned, girls' outnumbers the boys in both the case i.e. in general degree course or in vocational education course.

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Objective – 4: ***To study the vocational choice of the students pursuing vocational education courses in the general degree colleges under Gauhati University.***

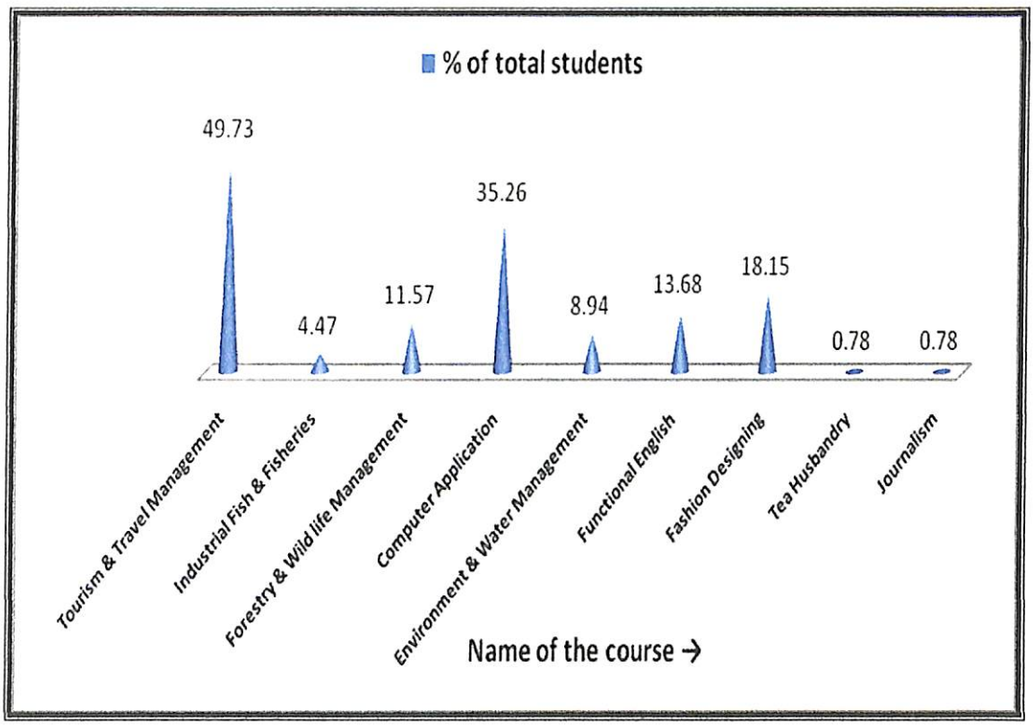
Vocational choice of students is an important parameter to determine the nature of the course to be inducted in a general degree college. Therefore it is very much necessary to make an assessment about the vocational choice of students. To understand this objective, related queries were placed to 380 students (175 boys & 205 girls) to know about their choice for various vocational education courses and the reason behind their choice. The investigator intended to understand the type of vocational courses mostly preferred by the students. The data collected from the students are given in Table – 15. Coursewise choice of vocational education courses by sample students is shown in figure – 14 through a bar diagram.

Table - 15 Gender wise choice of vocational education courses by sample students.

Name of the course	Boy's choice	%of boy's choice	Girl's choice	% of girl's choice	Total number of students choice	% of total number of students choice
Tourism & Travel Management	92	52.57%	97	47.31%	189	49.73%
Industrial Fish & Fisheries	12	6.85%	05	2.43%	17	4.47%
Forestry & Wild life Management	30	17.14%	14	6.82%	44	11.57%

Computer Application	57	32.57%	77	37.56%	134	35.26%
Environment & Water Management	26	14.85%	08	3.90%	34	8.94%
Functional English	13	7.42%	39	19.02%	52	13.68%
Fashion Designing	19	10.85%	50	24.39%	69	18.15%
Tea husbandry	03	1.71%	00	--	03	.78%
Journalism	00	-	03	1.46%	03	.78%

Figure – 14 Course wise choice of vocational education courses by sample students



It can be stated from Table – 15 and figure - 14 that majority of students have mentioned Tourism and Travel Management course as their choice. 49.73% of total students have mentioned this course as their choice for vocational education course. Similarly Computer Application course was chosen by 35.26 % of students. 18.15% and 13.68% of students indicated Fashion Designing and Functional English course as their choice in the questionnaire. Responses for the courses like Industrial Fish and Fisheries, Tea Husbandry and Journalism was very poor. Finding shows only 0.78% students indicated Tea Husbandry and Journalism course as their vocational choice and 4.47% students indicated Industrial Fish & Fisheries.

It has been observed that for some vocational education courses gender based choice was different. Gender based choice for different vocational education courses mentioned in table – 15 are depicted in the bar-diagram shown in figure – 15.

Figure – 15 Gender based choice for vocational education courses by sample students

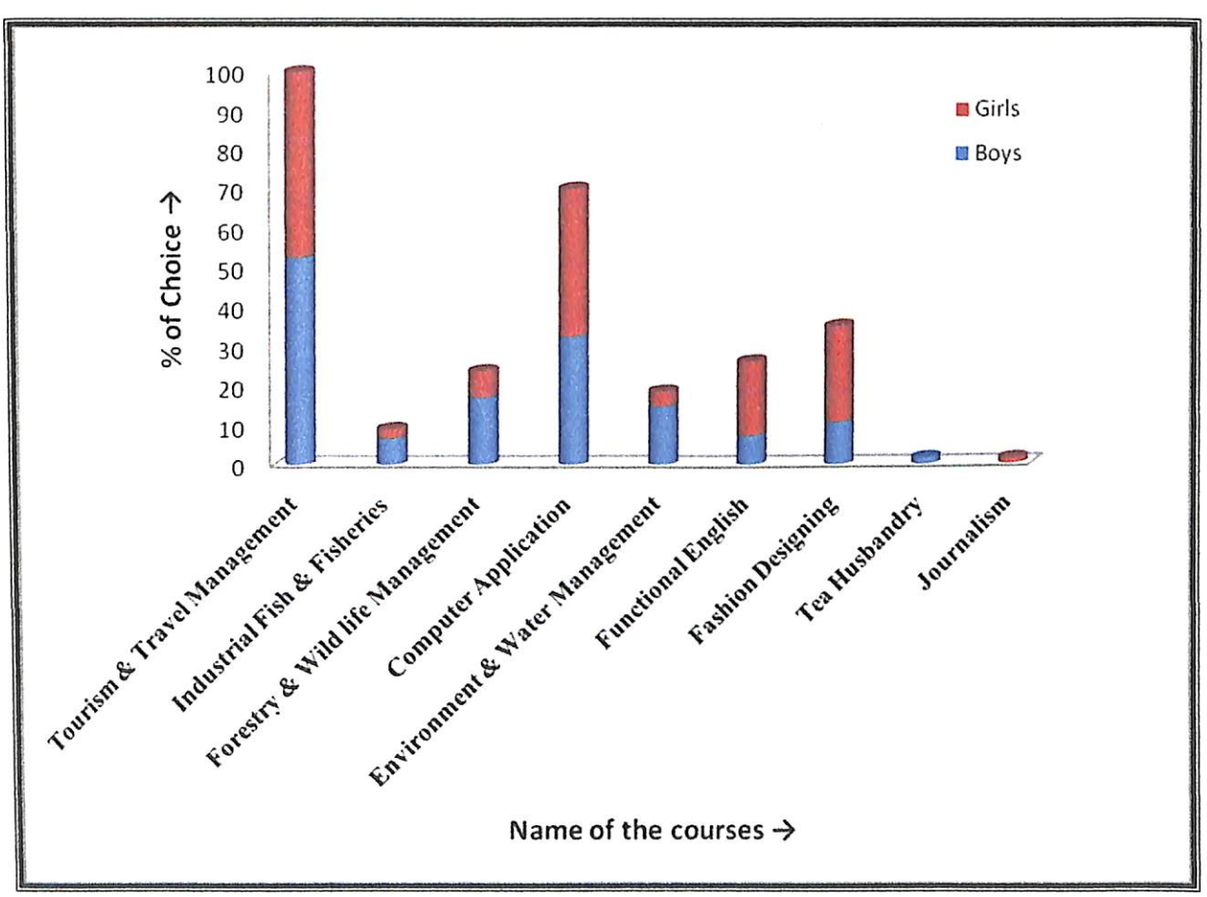


Figure - 15 indicates that boys and girls student have almost equally (52.57% boys & 47.31%) mentioned Tourism and Travel Management course as their first choice. Similary second choice for boys' and girls' students was Computer Application course. 37.56% girls & 32.57% boys have mentioned about Computer Application course. Table – 15 shows that for the courses like 'Industrial Fish and Fisheries', 'Forestry & Wild life Management' and 'Environment & Water Management' mostly boys' students have mentioned as their choice. On the contrary for the courses 'Functional English' and 'Fashion Designing' compared to boys, it is the girls percentage which predominates. Only 1.71% of boys have mentioned Tea Husnbandry course as their choice while no girls student have mentioned the same. In contrast only very few girls students (1.46%) have mentioned Journalism course as their choice. Investigator did not find any boys student referring this course.

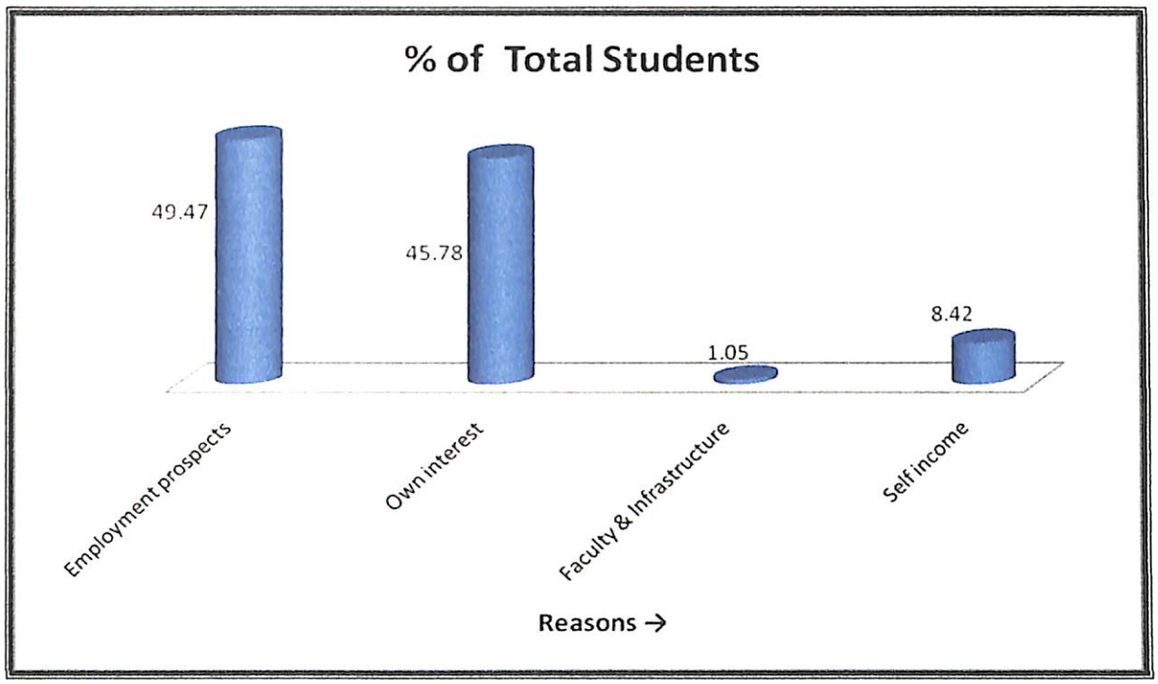
In order to make a rational about the factors that influence the success of vocational education courses, one has to precisely identify the reasons behind the vocational choice of students. As a part of this objective, the investigator tried to find out whether vocational choice of students depends upon family background or not. According to 60% of boys and 65.85% of girls, family background does not influence the vocational choice of students. Students have stated different reasons for choosing vocational education courses which are tabulated in table – 16. Diagramatic representation of the reasons for choosing vocational education courses by students is shown in figure – 16 in the form of a bar graph.

Table - 16 Reasons for choosing vocational education courses by students

Reasons	Boys	% of boys	Girls	% of girls	Total students	% of total students
Employment prospects	86	49.14%	102	49.75%	188	49.47%
Own interest	84	48%	90	43.90%	174	45.78%
Faculty and Infrastructure	02	1.14%	02	.97%	04	1.05%

Self-income	11	6.28%	21	10.24%	32	8.42%

Figure – 16 Bar projection of reasons for choosing vocational education courses by students



As indicated in the figure, nearly 50% of students (49.14% boys and 49.75% girls) choose vocational education courses because of employment prospects. This fact indicates that vocational education courses those are currently continuing in different degree colleges are succeeded in creating confidence among the students about the employment prospects. A reasonable number of students are highly motivated for vocational education courses and they choose these courses because of their own interest. 48% of boy's and 43.90% of girl's choose their vocational education course on their own interest. Again 6.28% of boy's and 10.24% of girl's student choose vocational education courses for self-income purpose. The factor, faculty and infrastructure could attract only negligible number of students. Findings indicate that for majority of the students the reason for choosing vocational education course is to ensure future employment therefore it can be stated that introduction of courses with good employment prospect might encourage more students participation.

Objective - 5: ***To understand the perception of the students and the teachers towards vocational education courses in the general degree colleges under Gauhati University.***

Success of a particular course always depends upon the perception of the students and teachers about the course. Better perception will certainly lead to increased participation of students and active involvement of teachers and hence will ensure success. In order to study the perception of the students and the teachers towards vocational education courses investigator has submitted various queries to 380 students and 135 teachers in the form of questionnaire. Responses obtained from students regarding their perception towards vocational education courses are tabulated in table – 17.

Table - 17 Perception of students towards vocational education courses

Description of the query	Perception of students			
	Boys (175)		Girls (205)	
	Yes	No	Yes	No
Whether ongoing vocational education courses are suitable for creating motivation among students?	125 (71.42)	50 (28.57)	170 (82.92)	35 (17.07)
Do you believe that vocational education courses are an important tool for execution of the process of enhancement of employability?	175 (100)	00	205 (100)	00
For effective implementation	152	23	178	27

of vocational education courses rapid development in the internet communication is a must. Do you agree?	(86.85)	(13.14)	(86.82)	(13.17)
Do you believe that vocational education courses chosen by you have enough potential for employment generation?	135 (77.14)	40 (22.85)	168 (81.95)	37 (18.04)

Table – 17 shows that overall perception of students towards vocational education courses is good. 71.42% boys and 82.92% girls expressed contentment over the existing vocational education courses. It has also been observed that compared to boys', girls' students are more enthusiastic about the courses. On an average more than 75% students believes that vocational educational courses are able to create motivation among them.

100% students (175 boys and 205 girls) are of the view that vocational education courses are an important tool for enhancement of the scope of employability. This is of course a positive sign from student's view point. Majority of the students argued that for effective implementation of vocational education courses rapid development in the internet communication system is an immediate necessity. On that point 86.85% boys student and 86.82% girls' student argued for rapid development in internet connectivity system. Investigator has observed that students are confident about the credibility of the vocational education courses towards employment generation. 81.95% of girls and 77.14% of boys asserted that vocational education courses chosen by them have enough potential for employment generation. Overall rationalization of the table is that ongoing vocational education courses have succeeded in creating significant motivation among students. Adequate research activities in this field will definitely bring up newer ideas for successful implementation of these courses.

As part of this objective Investigator has asked the students about their opinion regarding introduction of some alternate vocational education courses in place of the existing ones. In response to this query 64.39% girls & 68.57% boys mentioned that existing vocational education courses need to be replaced by some other courses and they also mentioned about some alternate courses. Alternate vocational education courses mentioned by the students as replacement for the existing ones are indicated in table – 18.

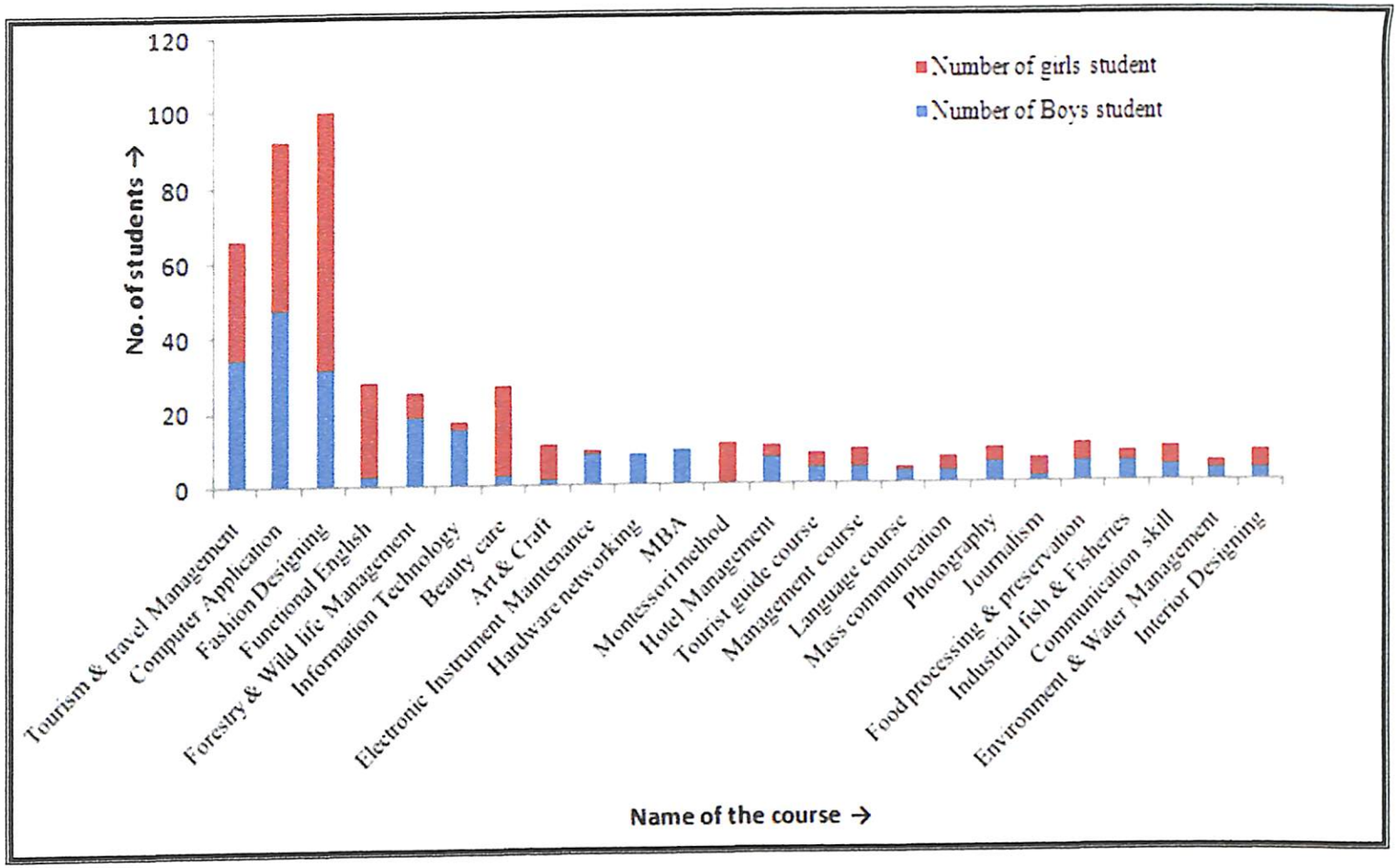
Table - 18 Description of alternate vocational education courses mentioned by the sample students

Name of the courses	Boys student (out of 175)	Girls student (out of 205)
Tourism & Travel Management	34 (19.42)	32 (15.60)
Computer Application	47 (26.85)	45 (21.95)
Fashion Designing	31 (17.71)	69 (33.65)
Functional English	02 (1.14)	26 (12.68)
Forestry & Wild life Management	18 (10.28)	07 (3.41)
Information Technology	15 (8.57)	02 (0.97)
Beauty care	02 (1.14)	25 (12.19)
Art & Craft	01 (0.57)	10 (4.87)
Electronic Instrument Maintenance	08 (4.57)	01 (0.48)
Hardware networking	08 (4.57)	00 (00)
MBA	09	00

	(5.14)	(00)
Montessori method	00 (00)	11 (5.36)
Hotel Management	07 (4.00)	03 (1.46)
Tourist guide course	04 (2.28)	04 (1.95)
Management course	04 (2.28)	05 (2.43)
Language course	03 (1.71)	01 (0.48)
Mass communication	03 (1.71)	04 (1.95)
Photography	05 (2.85)	04 (1.95)
Journalism	01 (0.57)	05 (2.43)
Food processing & preservation	05 (2.85)	05 (2.43)
Industrial fish & Fisheries	05 (2.85)	03 (1.46)
Communication skill	04 (2.28)	05 (2.43)
Environment & Water Management	03 (1.71)	02 (0.97)
Interior Designing	03 (1.71)	05 (2.43)

Data presented in table – 18 are also represented in the form of a bar diagram as shown in figure – 17.

Figure –17 Bar projection of alternate vocational education courses mentioned by students



From the Table – 18 it has been observed that gender wise preference is reflected in the type of courses, mentioned by the students as replacement for the existing ones. Based on their likings, it can be mentioned that the following five courses namely Computer Application course (26.85%), Tourism & Travel Management (19.42%), Fashion Designing (17.71%), Forestry & Wild life Management (10.28%) and Information Technology (8.57%) courses are preferred by significant number of boys students as replacement. Some other courses are also referred by the boys. In case of girls, the order of preference was somewhat different than that of boys. 'Fashion Designing', 'Computer application', 'Tourism & Travel Management', 'Functional English' and 'Beauty Care' courses were mostly been mentioned by the girls student as alternate courses. Similar to boys, few girls also mentioned some other vocational education courses as replacement for existing ones. Among the girls student the partial order of preference is as follows: 33.65% Fashion Designing course, 21.95% Computer Application course, 15.60% Tourism & Travel Management, 12.68% Functional English and 12.19% Beauty care course as alternate course for replacement of the existing ones. It has also been observed that for some courses girls' student have somewhat better response compared to boys while for some other courses the reverse is true. For example for the courses like Hotel Management, MBA, Hardware networking etc. boys student have more preference compared to girls while for the courses such as Montessori method, Art & Craft, Beauty care etc. girls student showed more interest.

There are some courses those are referred by very few numbers of students. Data pertaining to these courses as mentioned by the boys and girls figures very low to be incorporated in the table above. Such courses mentioned by the boys' students as replacement for existing ones are Floriculture, Horticulture, Bio- fertilizer, Eco-tourism, Company Secretariat, Banking, Animation, Disaster Management, Food taster etc. Similarly very few girls' students mentioned about the courses like Textile Designing, Doll making, Embroidery & Tailoring, Microbiology, Eco-tourism, Genetic engineering etc. for replacement.

Teacher's perception towards these courses is also equally important because the basic knowledge and skills of vocational education courses are delivered to the students through teachers. It has been observed by the investigator that teacher's perception

towards vocational education courses are very much positive as is reflected from the opinion collected from 135 teachers. Regarding teacher's perception, responses obtained from the teachers against various queries are tabulated in table – 19.

Table – 19 Teacher's perception towards vocational education courses

Queries	Teacher's opinion			
	Yes	%	No	%
Proper implementation of vocational education courses can substantially improve the issue of unemployment. Do you agree?	135	100	0	0
Whether current vocational courses are succeeded in producing properly skilled person?	102	75.55	33	24.44
Whether there is sufficient number of student participation in various vocational education courses?	46	34.07	89	65.92

From table – 19 it has been observed that 100% teachers are of the perception that effective implementation of vocational education courses can substantially improve the issue of unemployment. 75.55% teachers have mentioned that current vocational education courses are successful in producing properly skilled person. Regarding the quantitative aspect of student's participation in different vocational education courses, teachers are not having an optimistic view. 65.92% of teachers have expressed their view that sufficient number of student participation in vocational education courses is still lacking. Overall assessment from the table is that apart from student's participation, in other aspects teachers have a positive perception towards vocational education courses.

In response to the query whether the ongoing vocational education courses are succeeded in enhancing the employment prospects, teachers have expressed different opinion. Teacher's view on this query is represented through a pie –diagram shown in figure – 18.

Figure – 18 Pie-diagram showing teachers view on success of ongoing vocational education courses in enhancing employment prospect.

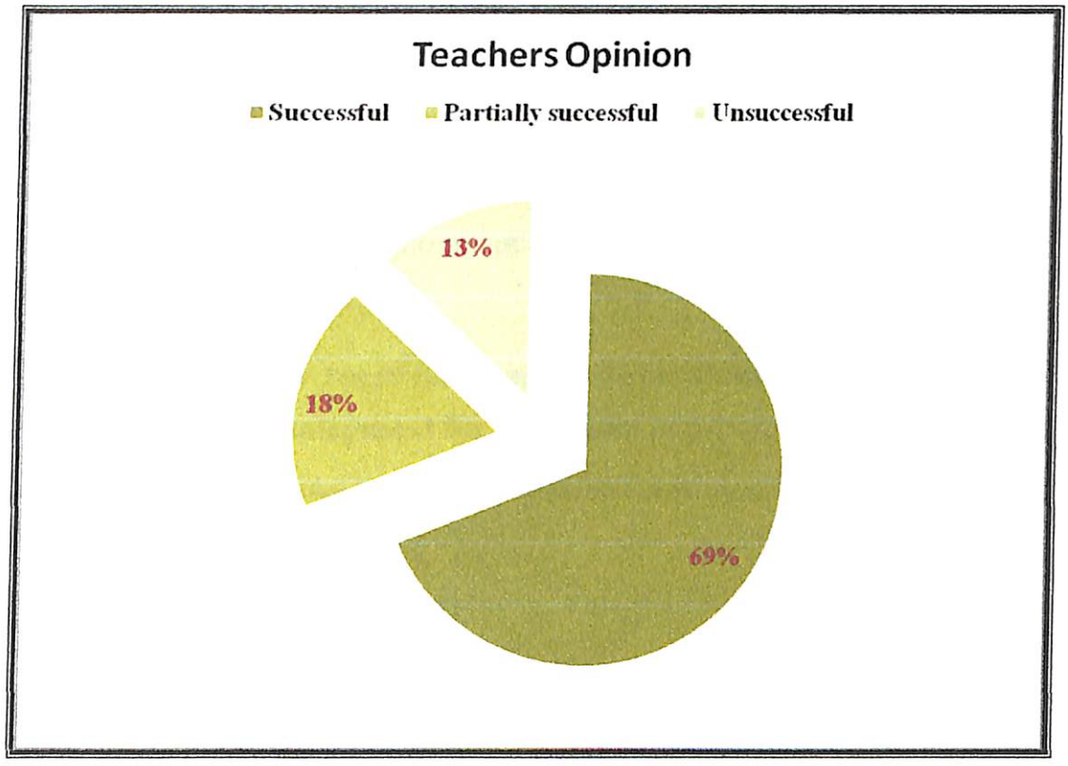


Figure – 18 clearly indicates that 69% of teachers believe that ongoing vocational eucation courses are very much successful in enhancing employability. However 18% of teachers believe that the courses can partially improve the employment prospects while according to 13% of teachers these courses are not at all successful in enhancing employability. Since employment generation and self employability are primary objectives of vocational education courses introducd in general degree colleges, therefore teachers view on this query can be considered as quite significant for future modification of the courses.

In order to make a more precise analysis of the perception of teachers towards vocational education courses, teacher's views were sought by the investigator on two

different queries. Teachers have been asked whether success of vocational education depends on industrialization and about their view on response from public sector industries / enterprise in providing employment to pass out students. Investigator observed that majority of teachers agreed upon the fact that success of vocational education courses is deeply related to the interest of the public sector enterprises to recruit the passed out vocational students. Therefore proper industrialization can be considered as a key parameter for success of vocational education courses. 84.44 % teachers agreed that without proper industrialization the core objectives of introducing vocational education courses cannot be attained because in that case scope of employability will be limited. Public sector enterprises have to show their deeper interest to recruit the passed out students. Teachers view regarding response from Public Sector Enterprises in providing employment for the passed out students is presented in the form of a line graph in figure – 19.

Figure – 19 Teacher's view regarding response from Public Sector Enterprises in providing employment for the passed out students

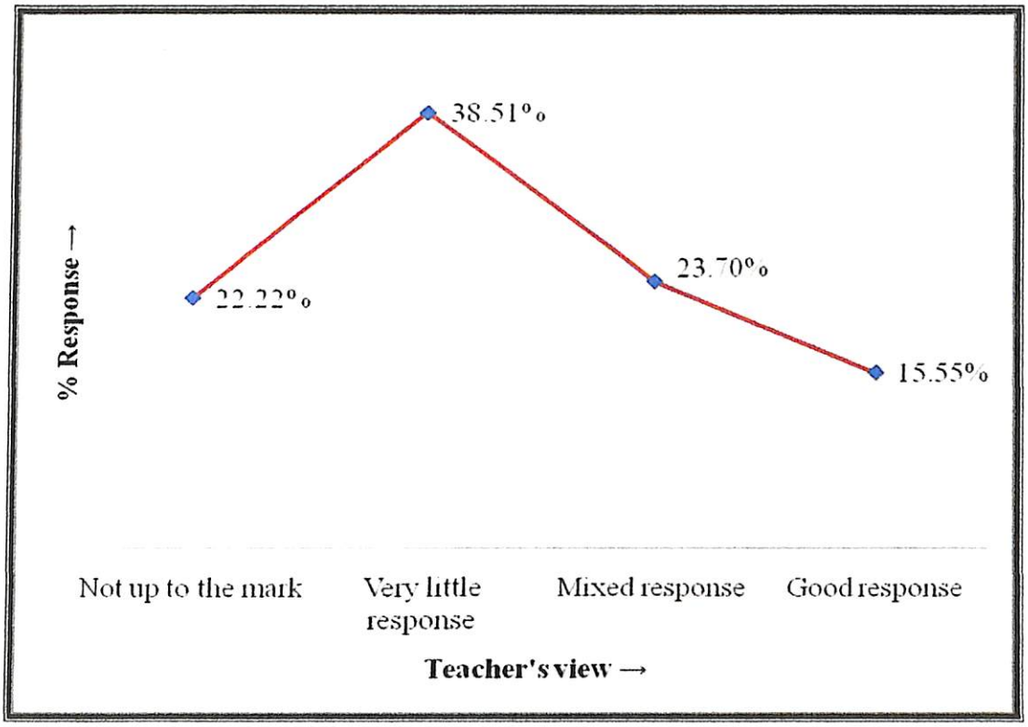


Figure - 19 indicates that regarding response from public sector enterprises in providing employment for the passed out students, teachers expressed their view in four

different ways. According to 22.22% of teachers the response from public sector enterprises are not up to the mark, 38.51 % teachers mentioned that the response is very little, 23.70% teachers observed mixed response and remaining 15.55% teachers feel that response from public sector enterprises is good. Response received from the teachers indicates that public sector enterprises yet not showing proper interest to recruit the passed out students and therefore efficient steps should be taken to mobilize effective participation of public sector enterprises.

Objective – 6: ***To study the satisfaction of the students on existing facilities, content and duration of vocational education courses in the general degree colleges under Gauhati University.***

Satisfaction of students over the course content, existing facilities and even the duration of the course is an important aspect that has to be emphasised carefully for successful implementation of the vocational education courses. In order to analyse this investigator has asked various queries to 380 students and the responses obtained from them are detailed in table – 20.

Again in order to make clear visual representation, separate diagrams are presented for the three different aspects mentioned in the objective – 6. Accordingly figure – 20 represents pie – projection of satisfaction of boys' and girls' students over existing facilities. Line graph shown in figure – 21 depicts the satisfaction of boys' and girls' students over content of the courses. Finally satisfaction of boys' and girls' students over duration of courses is represented through a bar diagram in figure – 22.

Table - 20 Satisfaction of boys' and girls' students over course content, existing facilities and duration of vocational education courses

Description of query	% of Highly satisfied		% of satisfied		% of uncertain		% of unsatisfied		% of highly unsatisfied	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Satisfaction over the existing facilities	8.00	10.24	36.57	46.34	28.57	17.56	17.14	18.53	9.71	7.31
Satisfaction over the content of the courses	8.57	8.78	41.14	42.43	22.85	20.48	18.28	19.51	9.14	8.78
Satisfaction over duration of the courses	7.42	7.31	38.28	39.02	26.28	18.04	17.71	24.39	10.28	11.21

Figure – 20 Pie projection showing satisfaction of boys' and girls' students over existing facilities

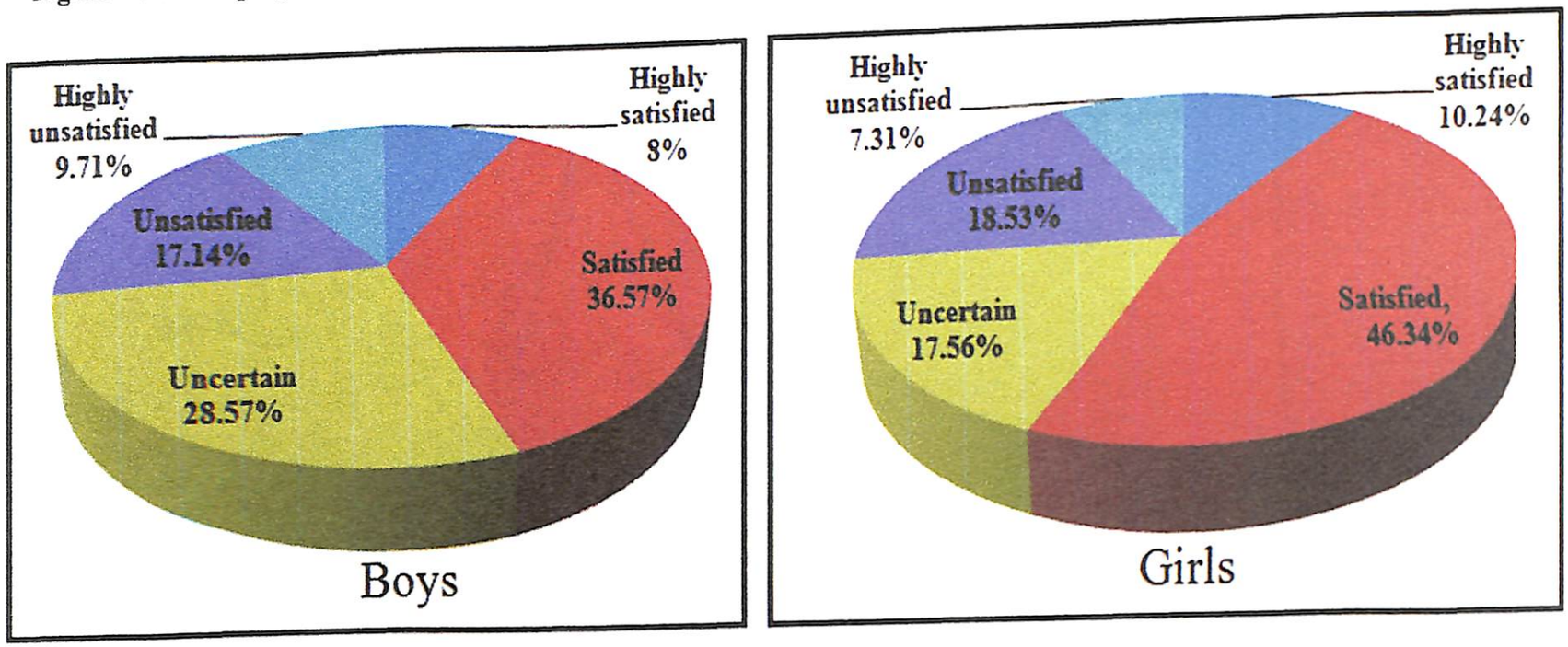


Figure – 21 Line graph to depict satisfaction of boys' and girls' students over content of the courses

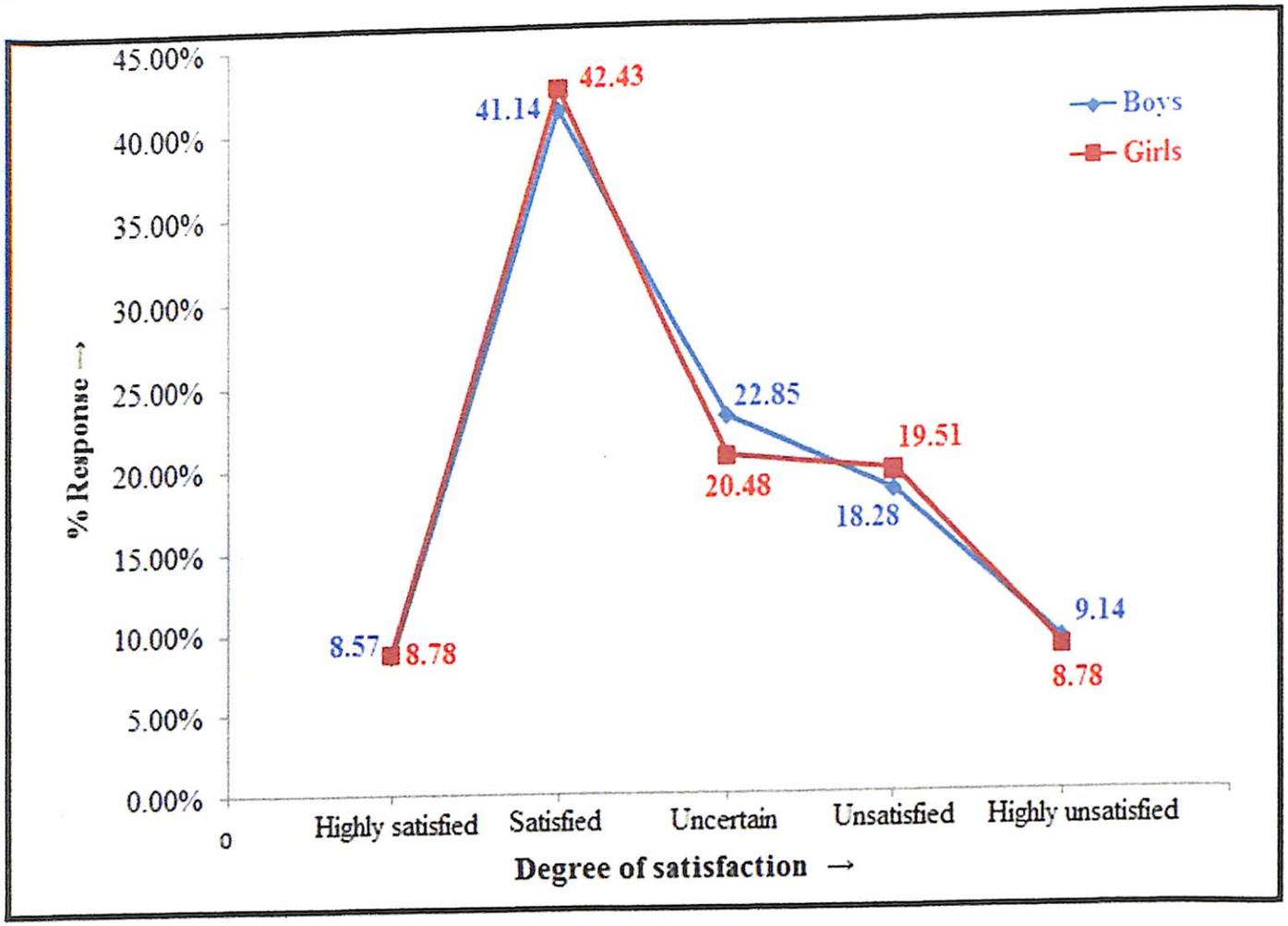
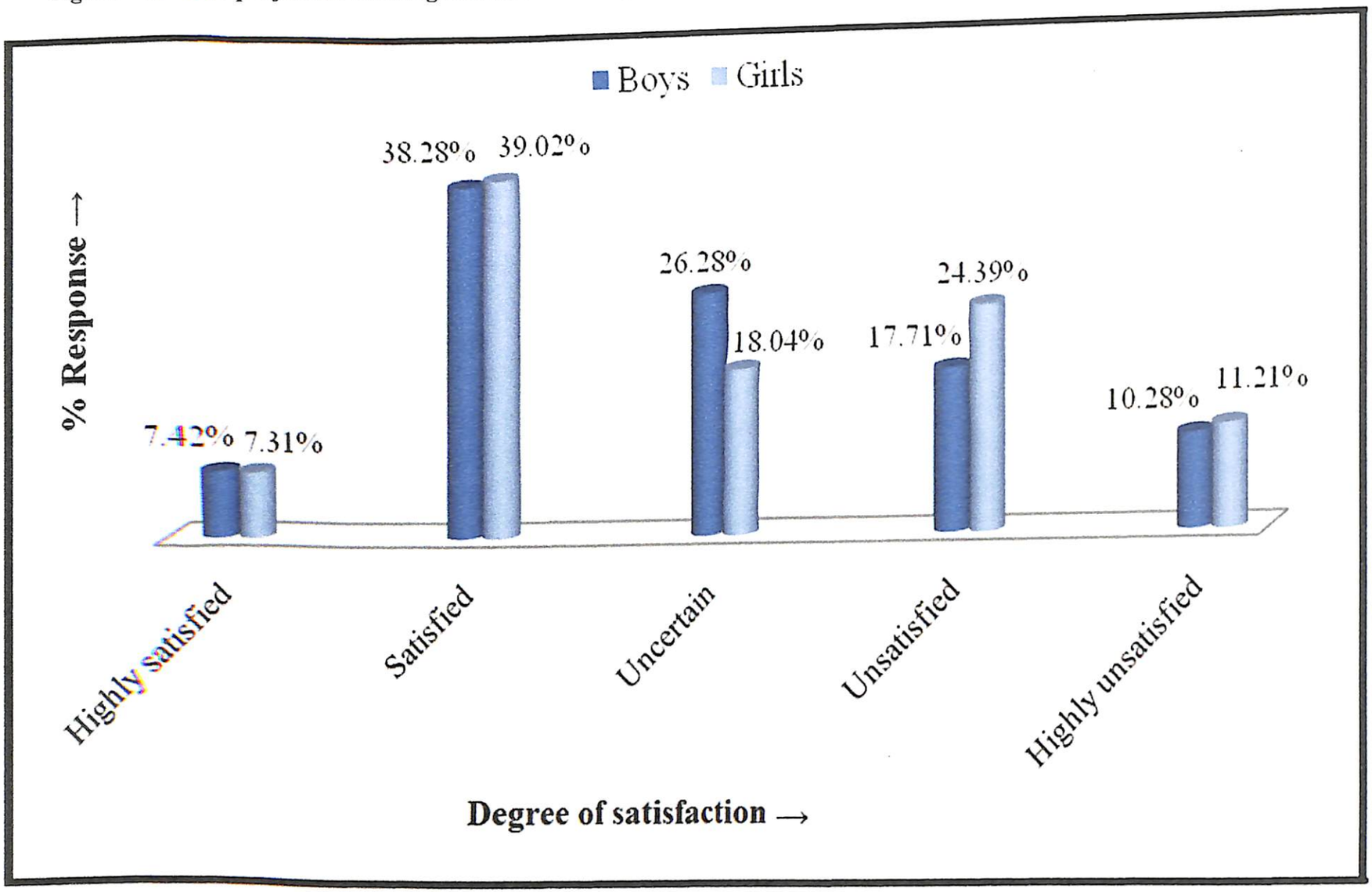


Figure – 22 Bar projection showing satisfaction of boys and girls students over duration of the courses



From the data presented in the table – 20 and from the figures above it has been observed that the satisfaction of students over the existing facilities, content and duration of vocational education courses is higher for girls in all the three cases. Again in all the three cases uncertainty among the boys is relatively more prominent than the girls. Another observation noted by the investigator is that in case of duration of courses significant percentage of boys' and girls' students are unsatisfied or highly unsatisfied. Overall it can be stated that satisfaction among the boys' and girls' students in these three aspects is .more or less good. Findings indicate that for all the three cases percentage of 'highly satisfied' students is quite low. This fact indicates that restructuring of existing vocational education courses can be an important step to improve the degree of satisfaction of the students.

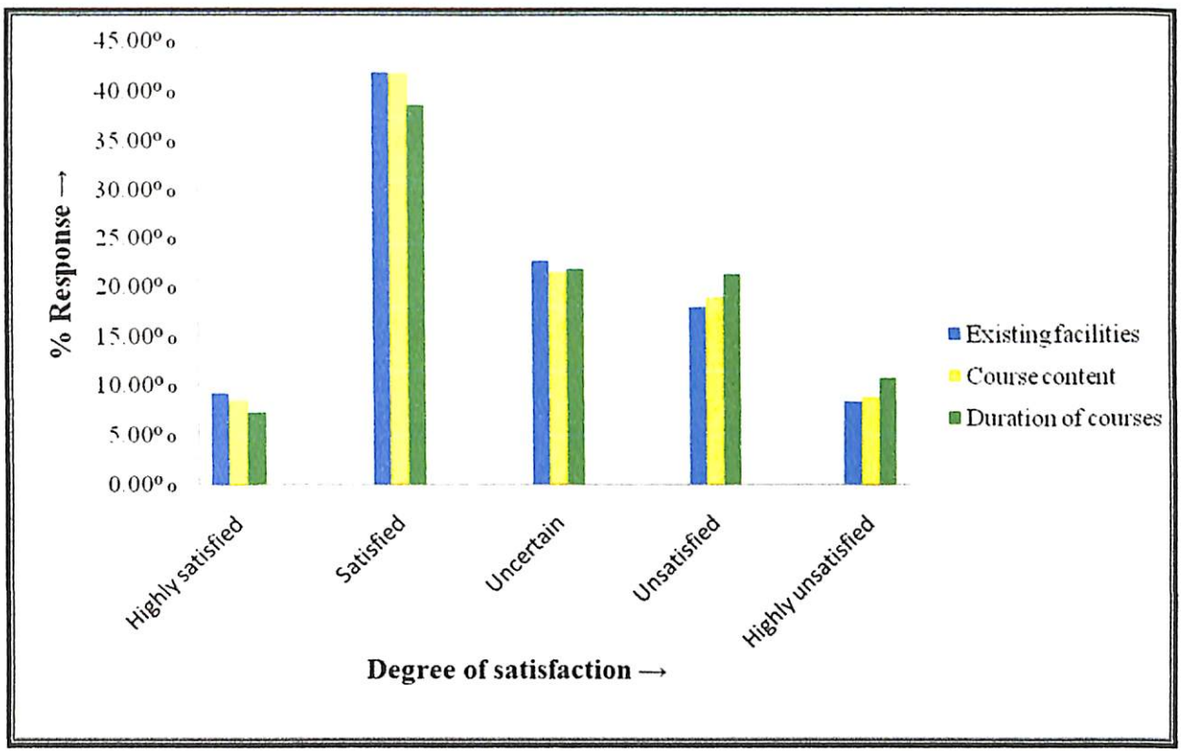
In order to make an overall analysis of these aspects viz., satisfaction of students on existing facilities, course contents and duration of various vocational education courses, Investigator has integrated the degree of satisfaction of total students which is tabulated in table – 21. Bar projection for the data presented in table – 21 is also shown in figure – 23 for better understanding.

Table - 21 Satisfaction of total students on existing facilities, contents and duration of vocational education courses

Satisfaction	Highly satisfied		Satisfied		Uncertain		Unsatisfied		Highly unsatisfied	
	Total students	% of Total students	Total students	% of total students	Total students	% of total students	Total students	% of total students	Total students	% of total students
On existing facilities	35	9.21	159	41.84	86	22.63	68	17.89	32	8.42
On course	33	8.68	159	41.84	82	21.57	72	18.94	34	8.94

content										
On course duration	28	7.36	147	38.68	83	21.84	81	21.31	41	10.78

Figure – 23 Bar projection of satisfaction of total students on existing facilities, contents and duration of vocational education courses



From the Table – 21 it has been observed that compared to duration of courses, students are more satisfied on the existing facilities and course content of the vocational courses. Again for duration of courses, percentage of unsatisfied student and highly unsatisfied students is more than the same for course content and existing facilities. It can be stated from this observation that some sort of dissatisfaction is present among the students regarding duration of the existing vocational education courses and therefore while modification of vocational education courses is considered this point should be

taken care of on priority basis. Of course higher percentage of satisfaction for existing facilities and course content is obviously a positive observation coming up from the study.

Additionally Investigator has also inquired about the student's view regarding satisfaction over the teaching methods adopted by the teachers. Data collected from the students indicate that most of students are contended with the teaching methodology adopted by the teachers. Only limited number of students (12% boys' student & 20.48% girls' student) expressed dissatisfaction over the same.

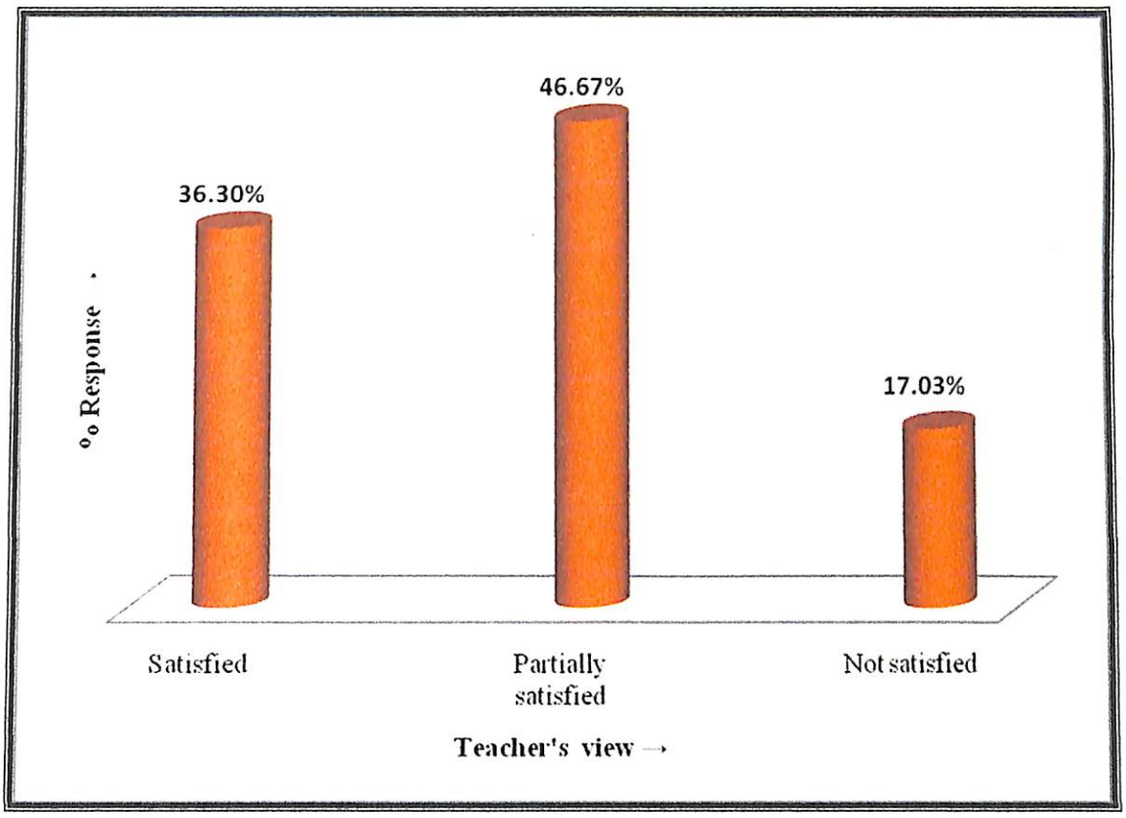
Objective – 7: ***To study the satisfaction of teachers on the way of implementation of the vocational education courses in the general degree colleges under Gauhati University.***

It is a common perception that for evaluation of the status of vocational education courses one should have a clear notion about satisfaction of teachers on the way of implementation of the same. Prior to inquire about teacher's satisfaction about the way of implementation of vocational education courses, all the 135 sample teachers have been asked some open ended questions to express their views regarding the need of implementation of vocational education courses in general degree colleges.

Most of the teachers have strongly commented in favour of implementing vocational education courses. They justified their statement by mentioning that implementation of vocational education courses will create sufficient employment opportunities. According to them the present crisis of lack of adequate skilled person in various fields of works, can be effectively improved through successful implementation of vocational education courses. Other significant benefits of implementation of vocational education courses mentioned by the teachers are like substantial improvement in professional qualification, improvement of career consciousness, improvement of practical knowledge, development of entrepreneur qualities and development of self-confidence.

Marked difference has been observed on the teacher's view regarding their satisfaction on the way of implementation of vocational education courses in their colleges. Some of them are satisfied on the way of implementation of the vocational education course while some others not. Again good numbers of teachers expressed partial satisfaction on the way of implementation of vocational education courses. Teacher's response concerning this aspect has been shown below with a bar diagram in Figure – 24.

Figure – 24 Bar projection of satisfaction of teachers on the way of implementation of vocational education courses.



From figure - 24 it has been observed that out of total 135 teachers 46.67% i.e. 63 numbers of teachers have mentioned that they are partially satisfied with the way of implementation of vocational education courses. Only 36.30% (49 out of 135) teachers are satisfied and remaining 17.03% are totally unsatisfied with the way of implementation of vocational education courses. Inference drawn from this finding is that current way of implementation of

vocational education courses in degree colleges might have several shortcomings which need to be recognized and corrected.

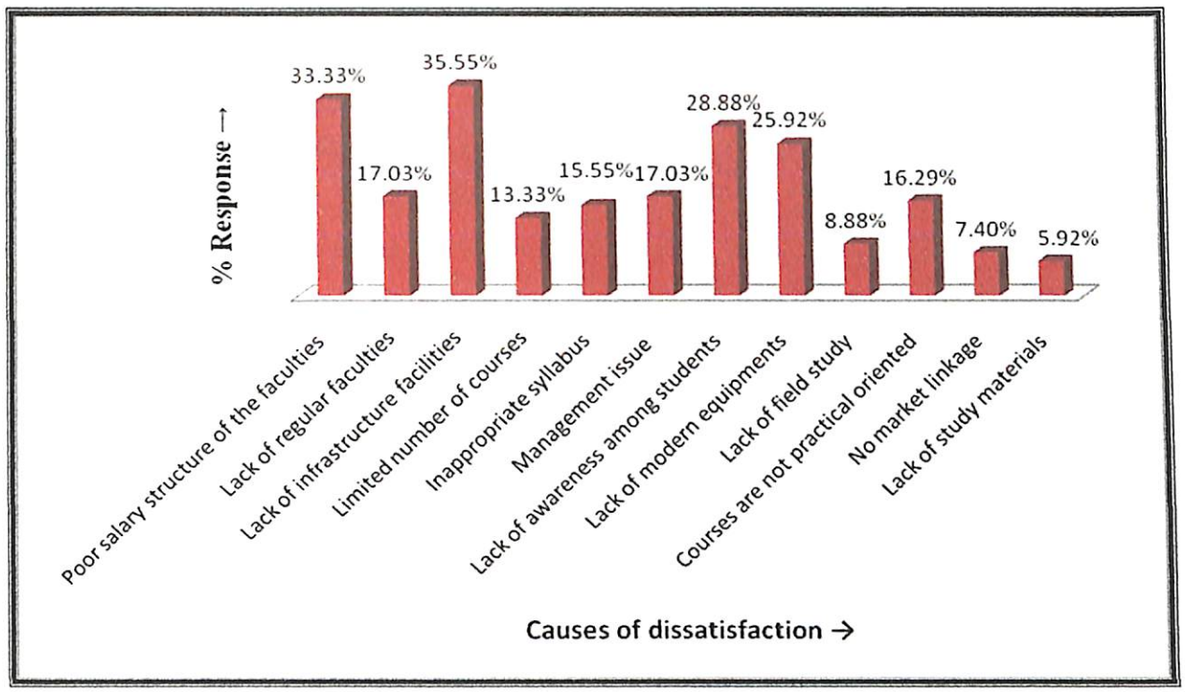
As a part of the above query, investigator has also asked the teachers to mention about their causes of dissatisfaction on the way of implementation of these courses. Teachers have mentioned several important causes of their dissatisfaction which are tabulated in table -22.

Table – 22 Causes of dissatisfaction mentioned by teachers

Causes of dissatisfaction	% Response
Poor salary structure of the faculties	33.33
Lack of regular faculties	17.03
Lack of infrastructure facilities	35.55
Limited number of courses	13.33
Inappropriate syllabus	15.5
Management issue	17.03
Lack of awareness among students	28.88
Lack of modern equipment	25.92
Lack of field study	8.88
Courses are not practical oriented	16.29
No market linkage	7.40
Lack of study materials	5.92

Causes of dissatisfaction mentioned by teachers are graphically represented in Figure – 25 below.

Figure – 25 Causes of dissatisfaction mentioned by teachers



From table – 22, it has been observed that among various causes mentioned by the teachers most prominent ones are lack of infrastructure facility (35.55%), poor salary structure (33.33%), lack of awareness among the students (28.88%), Lack of modern equipment (25.92%) etc. Besides these, teachers are also dissatisfied on some other points related to the process of implementation of vocational education courses. Lack of regular faculty, inappropriate syllabus, drawback in course structure, management issues, limited number of courses etc. because of which they are unable to deliver the best to the students. Therefore it can be stated that because of these drawbacks vocational education courses are yet to attain the desired popularity. Effective measures to address these issues will definitely help in bringing vocational education courses nearer to students.

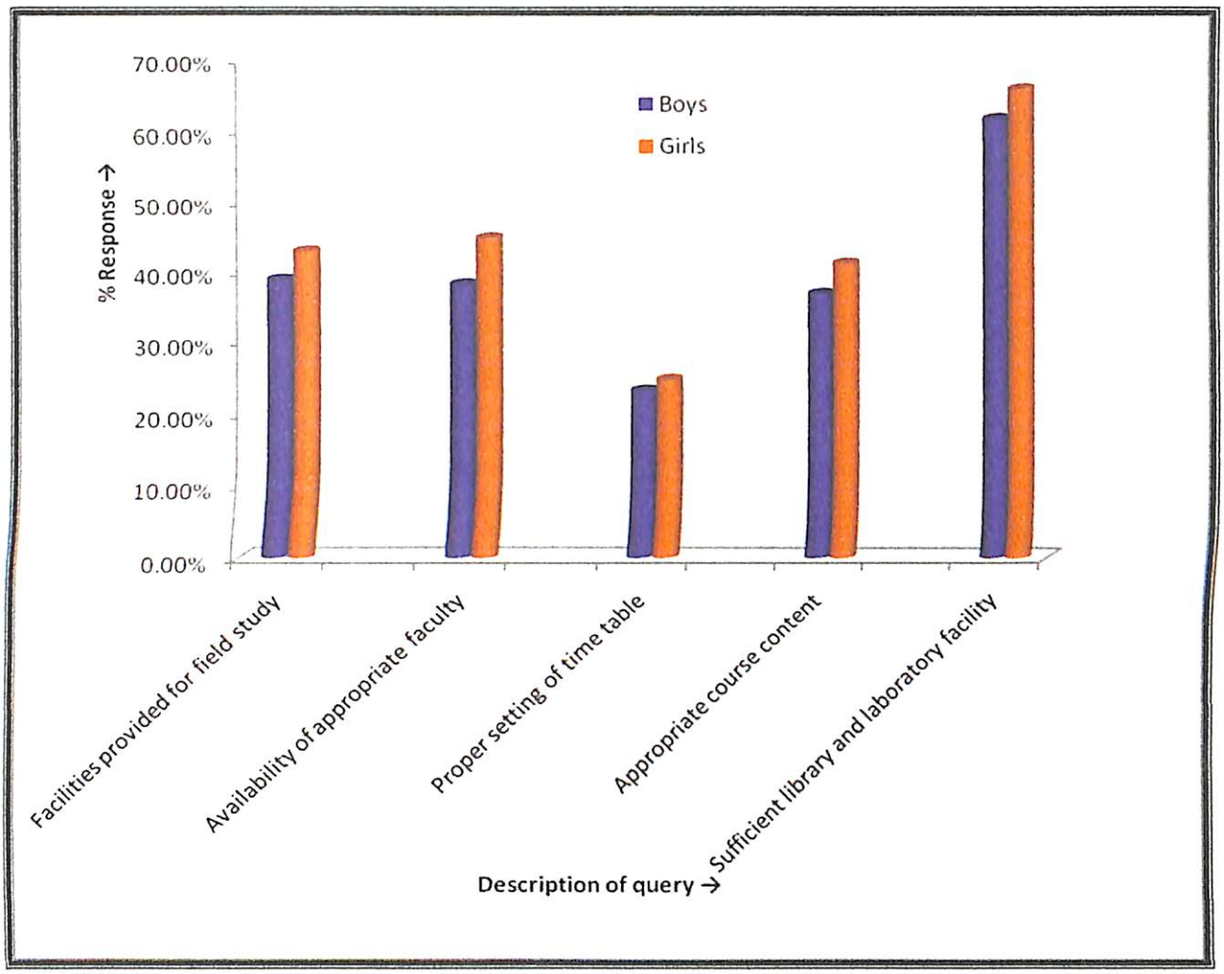
Objective- 8: ***To find out the difficulties faced by students and teachers of vocational education courses in the general degree colleges under Gauhati University.***

It is always important to analyze the pros and cons involved in implementing a particular process and so is the case for vocational education courses too. For this purpose one has to know about the difficulties faced by students and teachers engaged in these courses. Therefore investigator has asked related queries to 135 teachers and 380 students engaged in vocational education courses in general degree colleges and the responses obtained from them are tabulated. Table – 23 embodies the data collected from the students. Bar diagram given in figure -26 represents the negative responses obtained from boys' and girls' students against the queries mentioned in table – 23.

Table – 23 Difficulties faced by students (boys' & girls') in various aspects

Description of query	Students response			
	% of Boys		% of Girls	
	Yes	No	Yes	No
Whether facilities are provided for going outside or do the field work	61.14	38.85	57.07	42.92
Availability of appropriate faculty for various vocational subjects	61.71	38.28	55.12	44.87
Whether Proper setting of time table is done	76.57	23.42	75.12	24.87
Whether appropriate course contents were provided	62.85	37.14	58.53	41.46
Whether library and laboratory facilities are sufficient	38.28	61.71	34.14	65.85

Figure – 26 Difficulties faced by boys' and girls' student in different aspects



From figure – 26 and table – 23, it is apparent that compared to other aspects, students were facing more difficulties in using library and laboratory facilities. According to 61.71% boys' and 65.85% girls' students sufficient laboratory and library facilities are not provided to them. However major portion of the students are satisfied with the setting of time table for vocational education classes. Only 23.42% boys' and 24.87% girls' have mentioned that setting of time table was not proper. In case of other aspects such as field work facility, availability of faculty and appropriate course content students are not facing many difficulties as mentioned by majority of students. Findings

indicate that in all the three cases less than 40% boys' student and less than 45% girls' student faced difficulties. Of course these figures are not small enough to ignore.

Additionally students have been asked whether they have faced any sort of problems in receiving vocational education courses in their colleges. Students response received in this regard indicates that 48% boys' and 48.29% girls' have faced difficulties in receiving vocational education courses. This fact indicates that vocational education courses introduced in various colleges were associated with number of drawbacks. Natures of problems faced by the students are tabulated in table – 24 and for better perception data are graphically represented in the form of a line graph in figure – 27.

Table – 24 Percentage responses of the problems faced by students

Nature of problem	Student's response (%)
Inadequate classroom	16.57
Inadequate infrastructure	25.26
Laboratory problem	10.78
No well-designed course	14.21
Shortage of competent faculties	20.78
Management problem	9.47
Irregularity of the classes	13.68
Lack of modern equipments	18.15
Admission fees high	5.26
Not sufficient reading material	10.52
Power failure	6.57

Figure – 27 Line graph for % response of the problems faced by the students

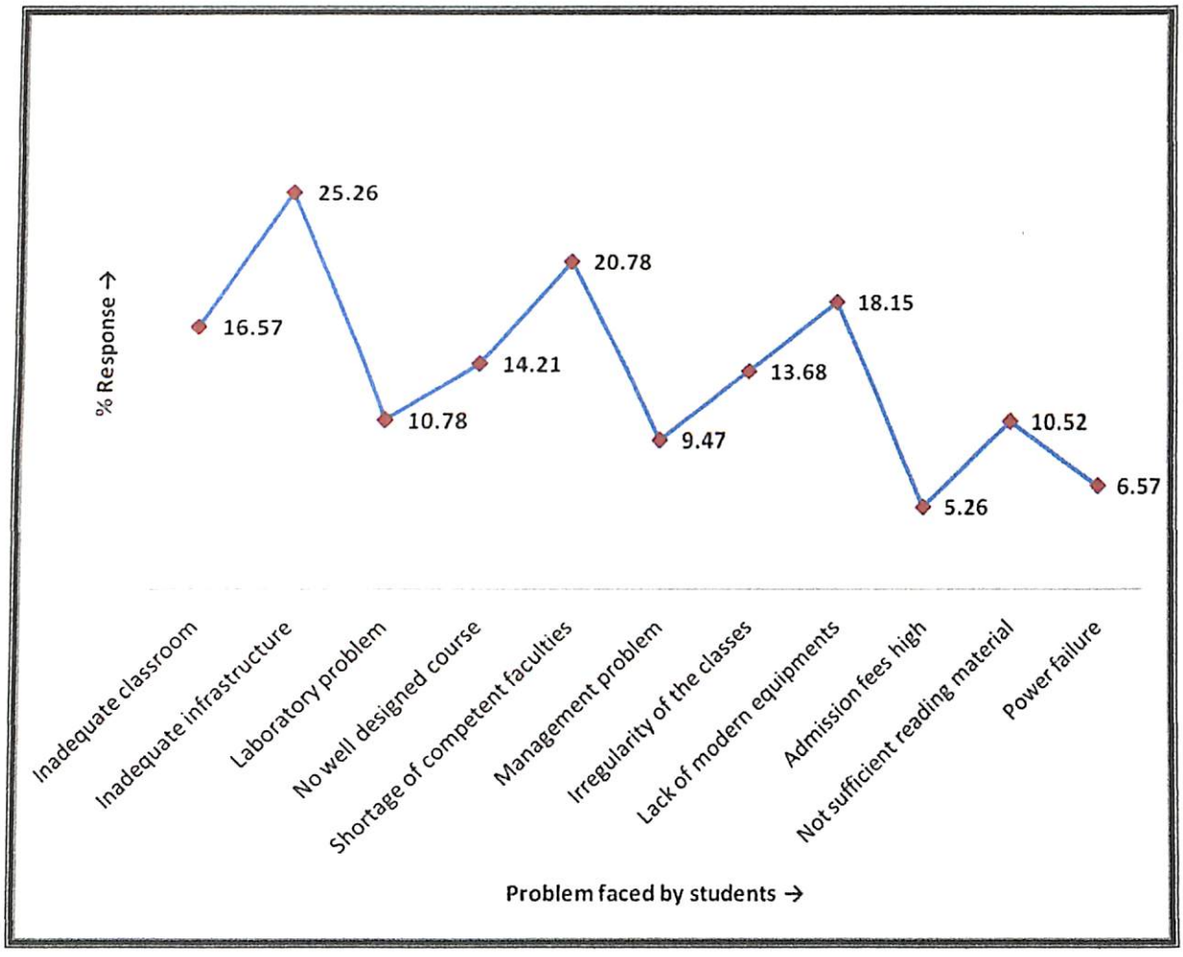


Table- 24 shows that among various causes of dissatisfaction cited by the students, lack of infrastructure facilities is the most prominent one. 25.26% students have indicated about this problem. Besides 20.78% students indicated about shortage of competent faculty and 18.15% students mentioned about lack of modern equipment Among the other prominent problems mentioned by students, irregularity of the classes, lack of well-designed course, laboratory problems, study materials etc. are important ones to be envisaged.

In an analogous way, to understand the difficulties faced by the teachers in teaching vocational education courses in general degree colleges, investigator has asked

the following queries as mentioned in table – 25, to the teachers and the responses obtained from them are incorporated in the same table.

Table – 25 Difficulties faced by teachers

Description of query	% response of teachers	
	Yes	No
Whether appropriate training and communication facilities are provided for classroom teaching	74.07	25.92
Whether sufficient contingency fund are available for maintenance of equipment	55.55	44.44
Whether sufficient faculties are available for smooth conduct of the classes	68.14	31.85
Are there any recurring problems during classroom teaching	45.18	54.81

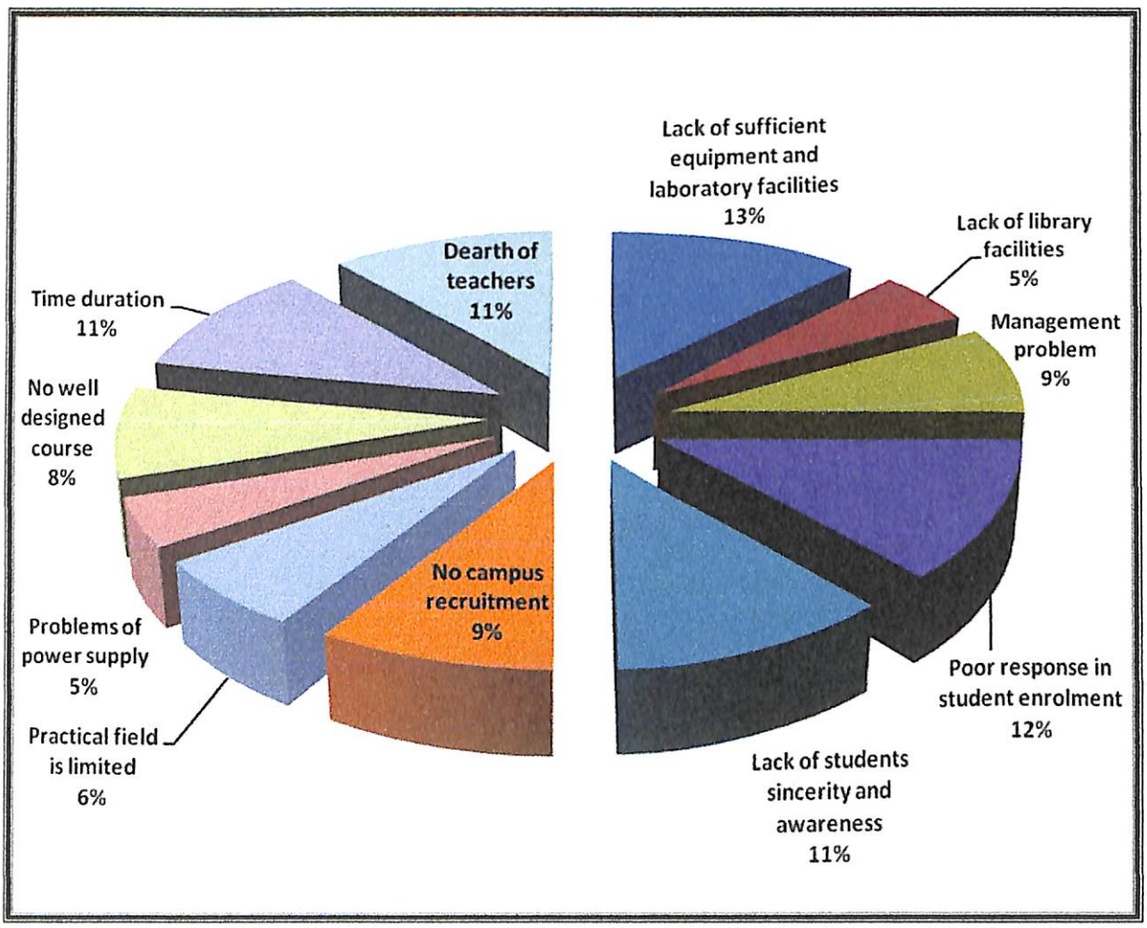
From the Table – 25 it is evident that teachers are not facing any serious problem in teaching vocational education courses. However 45.18% teachers have mentioned that they have faced some recurring problems in continuing the vocational education courses. Recurring problems faced by the teachers are shown in table – 26. A pie diagram is also presented in figure – 28 which gives a clear picture about the recurring problems faced by the teachers.

Table – 26 Recurring problems faced by teachers

Nature of problem	Teacher's response (%)
Lack of sufficient equipment and laboratory facilities	42.22
Lack of library facilities	17.03
Management problem	26.66

Poor response in student enrolment	37.03
Lack of students sincerity and awareness	34.07
No campus recruitment	28.14
Practical field is limited	20
Problems of power supply	14.07
No well-designed course	26.66
Time duration	33.33
Dearth of teachers	35.55

Figure – 28 Pie diagram of the percentage response of problems faced by teachers



From Table – 26 and also from figure – 28 one can observe that teachers engaged in vocational education courses are facing different recurring problems such as lack of equipment and laboratory facilities, lack of library facilities, poor response in student enrolment, lack of student sincerity and awareness etc. Among various recurring problems, highest problem faced by teachers in equipment and laboratory facilities. 42.24% teachers have mentioned about this problem. Other problems like Dearth of teachers, Management issue, lack of well-designed course structure, time duration etc. are also quite significant. Sometimes it has been observed that a single teacher has to complete the entire course which is not always feasible. Again if time duration is small compared to the syllabus then completion of syllabus within stipulated time for the single teacher is becoming quite difficult. Investigator has observed that these sorts of problems are continuously faced by the teachers in teaching vocational education courses in general degree colleges. Therefore concerned authority has to speculate on these problems and should initiate effective measures to minimize the same.

Chapter IV thus incorporates the data collected from different samples defined for the study. Systematic and need based statistical analysis of the data are presented in this chapter along with graphical representations, in order to evaluate the status of different vocational education courses in general degree colleges under Gauhati University. Views of students', teachers' and principals from general degree colleges are carefully analyzed and interpreted with respect to the objectives of the study.

CHAPTER – V

FINDINGS, SUGGESTIONS AND CONCLUSION

CHAPTER-V

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings of the research work obtained after complete analysis of data, are presented in this chapter along with the conclusion drawn from the study. On the basis of this discussion investigator has presented here some suggestions for improvement of the status of vocational education courses in Assam and for initiation of further quality research in this area. Finally the chapter is concluded through inclusion of a summary of the entire study.

5.1 Findings of the Study

On the basis of analysis of data the findings related to different objectives of the study are given below:

a) Findings related to the profile of the vocational education courses provided by the general degree colleges under Gauhati University

1. The study reveals that limited number of colleges have introduced vocational education courses till the collection of data. Apart from this in some districts not a single college was found to introduce vocational education courses.
2. Investigator has found that most of the colleges have introduced only one or two vocational education courses. Out of 36 colleges, only two colleges have introduced five vocational education courses and another six colleges have introduced four vocational education courses.
3. Tourism & Travel Management course was introduced in majority of colleges followed by Functional English. Third highest response was observed for the courses namely- Computer application, computer hardware/software, networking etc. Similar findings were reported from an independent study conducted by Govt. of Himachal Pradesh (1998).

4. Majority of the vocational courses are certificate course of varied duration but predominantly of one year duration. Besides degree and diploma courses are not very few in numbers.
5. As far as the duration of the courses is concerned, investigator has observed that duration of the courses vary from three months to two year. However courses with six months and one year duration are more. Diploma courses are also of various duration starting from three months to one year. In this case like certificate course, most of the courses are either of six months duration or one year duration. All degree courses are found three years duration.
6. The study reveals that courses are either sponsored by UGC or self-sustained and only two courses were sponsored by other agencies.

b) Findings related to the infrastructural facilities and availability of equipment for mobilization of the vocational education courses

1. From the analysis presented in the thesis, it has been observed that regarding class room facility and number of faculties for vocational education courses, most of the principals have expressed their positive view. Higher dissatisfaction of principals was observed in case of availability of equipment, adequate study materials and Laboratory & workshop facility.

2. Investigator has also observed that teachers and students have similar view on the aspects like equipment facility, separate classroom and adequate number of faculty, which is mostly affirmative. According to majority of the students laboratory facilities provided are not sufficient which is also agreed upon by 57.04% teachers. It has also been revealed that study materials provided for the courses are not appropriate as mentioned by most of the students and teachers. Investigator found numerous analogous results from review of literatures. Previous studies carried out by different researchers indicated lack of infrastructural facilities, laboratory facilities and library facilities for continuation of vocational education courses. Earlier Sacheti and Raizada (1990), Biswal (1992), Sungoh (1999), IAMR (2001), Gandhi (2012) and Rufai et al. (2013) arrived at similar conclusion.

3. From student's and teacher's view collected during the study, it has been found that sufficient equipment and laboratory facilities are not available for vocational education courses. Even according to 63.89% principals sufficient equipment facilities are not available for the vocational education courses. However in case of equipment a contradictory result was found in the work of Thimmaiah et al. (1982).

4. Study also reveals that government funding for procurement of sophisticated equipment was not regular as mentioned by most of the teachers. However according to some other teachers funds were received as and when required. Bhargava (1991) also mentioned that budgetary constraint were always there for continuation of vocational education courses.

c) Findings related to the student's participation in various vocational education courses and faculty strength of these courses

1. Investigator has found 45 vocational education courses in 36 general degree colleges. Among these courses Tourism and Travel Management course attracted highest student's participation followed by Functional English and Computer Science & Application course respectively.

2. Similarly lowest student's participation was recorded for Biomass, Bioinformatics and Creative writing and appreciation literature courses. Besides there are some courses like Information Technology, Industrial Fish & Fishery, Electronic Instrument maintenance, BBA, Beauty therapy & Care etc. where moderate student's response was observed.

3. Many times depending on the nature of the courses sex wise preference was observed, although this is not the case always. Tourism and Travel Management course has been almost equally preferred by boys' and girls' student. Again in courses like 'Functional English' and 'Computer science & application', girls' student participation was higher. The courses like 'beauty care', 'Fashion and Dress designing' etc. are participated by only girls student while the courses like 'Electronic Instrument maintenance', 'Poultry farming', 'Tea Husbandry' etc. are participated only by the boys student.

4. Study reveals that vocational education courses are run by both full time and part time teachers. Compared to full time teachers, Part time teachers are found to be slightly more. This finding partially goes in line with the results of Emmanuel (1990), Gupta (1990), Lahkar & Kakati (2008) and Gandhi (2012). According to their results vocational courses are mainly dependent on part time teachers. But the findings of the present study are not fully in conformity with this.

5. Investigator has found that compared to enrolment of students at degree level in general degree colleges, enrolment in vocational education courses is very poor. Of course in case of few colleges, student's participation in vocational education courses is found to be relatively better. Dhing college, MNC Balika Mahavidyalaya, ADP college are examples of such colleges. Research works carried out by Lahkar and Kakati (2008) and Blaug (1973) also resembles with the findings of the present study. Another significant finding is that although 36 colleges have introduced vocational education courses, almost 75% of total vocational students are found in sixteen of these colleges and other 20 colleges share the remaining students.

6. During the course of the study girl's participation in vocational education courses was found to be higher than the boys in both the session (2009 -2010 & 2010 – 2011). However girl's enrolment at degree level in general degree colleges was also found to be higher than the boys. Findings of Mohanty (1986) revealed that boys' are attracted more towards vocational education which is not supporting the findings of the present study. On the contrary works of Barik (2010) arrived at similar findings with that of present study.

7. It has been observed that out of 36 general degree colleges, four colleges are girl's college. Investigator feels that this can be a reason behind increased participation by the girls' student in vocational education courses although few female dominated courses also played a decisive role in that.

8. Investigator has found that out of 45 different vocational education courses in 36 sample colleges some courses received good response from the students while some courses not. The courses which appear relevant to student's need attracted

more students' participation. Research work of Thongpleae (1985) supported this argument.

d) Findings related to the vocational choice of the students pursuing vocational education courses

1. For some vocational education courses choice of students is not gender specific. For example 'Tourism and Travel Management' course, 'Computer Application' course etc. more students' participation is observed and vocational choice of students towards these courses is not gender specific.

2. Again study reveals that for some courses vocational choice of students is gender specific. It is found that girls' are more inclined towards the courses like- Fashion Designing, Functional English, Journalism, Doll making etc. Similarly the courses like- Forestry & Wild life Management, Environment & Water Management, Tea Husbandry etc. are specifically opted by boys'. Similar results were reported by Boruah and Phukan (2010).

3. Vocational choice of students is not influenced by family background. This was clearly indicated by more than 60% of students, rather they mentioned some other factors influencing their vocational choice. Bengeri (2010) in contrast reported that Vocational choice of students is influenced by family background.

4. The present study found that almost half of the students choose their vocational education courses because of employment prospects. Apart from that, some students prefer these courses on their own interest while some others choose vocational education for self-income purpose. Few students choose vocational education courses by looking at available faculty and infrastructure of the college. Identical findings are reported in the work of Mohan and Gupta (1990), Bhargava (1991), Qiu (1988), Hull (1993) and Eichhorst et al. (2012)

e) Findings related to the perception of the students and the teachers towards vocational education courses

1. From the study it has been observed that students perception about the vocational education courses are positive and according to significant numbers

of students these courses are suitable for creating motivation among them. Favourable perception of students about vocational courses was also mentioned by Sungoh (1989).

2. All students have mentioned that vocational education courses are an important tool for enhancement of scope of employability. Mupinga and Livesay (2004) also supported this statement. Both boys' and girls' student are of the view that internet communication system is essential for effective implementation of these courses.

3. Most of the students are confident that vocational education courses chosen by them have enough potential for employment generation.

4. Study also reveals that good number of boys' and girls' students are in favour of introducing some other vocational education courses apart from the courses continuing in their colleges, so that they can select the courses based on their interest as well as on the employment prospects of the course.

5. Gender based preference for alternate vocational education courses also reflected in the responses obtained from boys' and girls' students. Girls' students showed their interest on female motivating courses like- Doll making, Textile Designing, Montessori Method, Beauty care, Art & Craft etc. Similarly boys' students are interested in courses like Horticulture, Floriculture, Company Secretariat, Hotel management etc.

6. Teacher's perception towards vocational education courses is very much positive. All the teachers were of the opinion that proper implementation of vocational education courses can gradually improve the issue of unemployment. A good number of teachers have stated that current vocational education courses are successful in producing properly skilled person.

7. According to majority of teachers ongoing vocational education courses are successful in enhancing the employment prospect for students. However 18% teachers mentioned it as partially successful and another 13% as unsuccessful.

8. Teachers are of the view that without proper industrialization the basic objectives of introducing vocational education courses will not be fulfilled. According to teachers view, responses from public sector industries are not up to the mark. Some teachers believe that public sector industries are recruiting very little vocational education passed out students while few others believe that in this case response from public sector industries are good. Some teachers have mixed view about response from public sector industries.

f) Findings related to the satisfaction of the students on existing facilities, content and duration of vocational education courses

1. Findings of the study indicates that degree of satisfaction in case of girls' are more than boys' in all the three cases such as existing facilities, content and duration of vocational education courses. Good numbers of boys are uncertain about their view on the same. Findings also indicate that for all the three cases percentage of 'highly satisfied' students is low.

2. Some of the students are highly unsatisfied with all the three cases referred above. However degree of dissatisfaction among them is relatively more for duration of courses, than for existing facilities and course content.

3. Few students reported dissatisfaction over the teaching methods adopted by vocational education teacher. They argued for properly trained and competent teachers for vocational courses. The fact that trained teachers are more competent in classroom communication, particularly in vocational subjects was pointed out by Misra (1994), Thomas and Lowell (1985), Attaochu (2013) and Ngure (2013).

g) Findings related to the satisfaction of teachers on the way of implementation of the vocational education courses

1. From the study it has been observed that most of the teachers are in favour of successful implementation of vocational education courses so that present crisis of lack of adequate skilled person can be addressed. According to them these courses will create significant employment opportunities along with

improvement of professional qualification, improvement of practical knowledge, developing self- confidence and help the students become more career consciousness.

2. Only 36% teachers are satisfied with the way of implementation of vocational education courses. Remaining teachers are either partially satisfied or not satisfied. Prakash and Gupta (2002) and Boateng (2012) from their study suggested for restructuring the way of implementation of vocational courses.

3. It has been found that main causes of dissatisfaction indicated by teachers are lack of infrastructure facilities, poor salary structure, lack of awareness among students, lack of modern equipment, management problem, inappropriate syllabus, courses are not practical oriented etc. Results of Advant (1985), Barooah (1986) and Vaid & Sengupta (1990) support this finding.

h. **Findings related to the difficulties faced by students and teachers of vocational education courses.**

1. Study reveals that both boys' and girls' students faced difficulties with respect to use of library and laboratory facilities. On the other hand majority of students commented that time table for vocational education courses are properly set in the routine.

2. Opinion of the students indicate that majority of students have not faced any serious difficulties in continuing vocational education courses.

3. It is noteworthy that although majority students have not faced any serious problems in receiving vocational education courses but quarter of them indicated that they have faced difficulties in continuing the courses. Main difficulties faced by them are lack of adequate infrastructure, shortage of competent faculty, lack of modern equipment, irregularity of class and lack of sufficient reading material.

4. Except few, teachers have not faced any serious difficulties in teaching vocational education courses. Limited teachers have mentioned that they have

faced difficulties mostly in equipment and laboratory facilities which is also mentioned by the students.

5. Another difficulties faced by some teachers is the poor enrolment of students and lack of consciousness among students and guardians. This finding also reflected in the earlier study done by Lahkar and Kakati (2008).

5.2 Educational implications and suggestions

The study reveals many important facts about existing vocational education courses at general degree colleges under Gauhati University. A generalized view can be developed based on the findings of the study and that might constitute a general guideline for successful implementation of vocational education courses. Investigator has analyzed the findings to elaborate educational implications of the study and based on the analysis several recommendations / suggestions have been presented for success of Vocationalization at higher education sector.

1. First and foremost point to be emphasized is that despite sincere efforts from government agencies the process of Vocationalization at higher education sector has not attained the desired success. Investigator has observed poor student's participation in vocational education courses compared to general courses at degree level. Adequate Vocationalization can attribute larger economic and social benefit to the country. The present study documents various reasons for poor participation of students in the vocational education courses. Poor social status of vocational passed out student considered as one of the major reasons. Very often they are undermined in the society. In many cases lack of awareness among the students and parents act as a factor in decreasing the students participation rate in vocational education courses. Students joining vocational education courses have larger expectations for a gainful employment immediately after completing the course. Many courses are unable to fulfill such expectations and many times passed out students have to look for other alternatives or for self-employment. As a result students could not find any

interest to join such courses. Therefore these kinds of problems should be addressed with sincere and dedicated efforts by implementing agencies. Awareness is the most important aspect to be envisaged and government policy makers should consider this point as a serious issue. Social up gradation of status of such courses is also equally important so that vocational passed out students are no longer considered as second class citizens. Establishment of vocational guidance cell by college authority can substantially help in monitoring, evaluating and up gradation of the vocational courses. Such kind of cell can also act as a guide for vocational passed out students for suitable placement.

2 During the course of the study investigator found that Tourism and Travel Management, Computer Science Application and Functional English course always attracts relatively larger student's participation, irrespective of girls' and boys'. These courses are usually found relevant for professional development and many times succeeded in providing employment to pass out students. This fact indicates that introduction of need based and demand driven vocational courses and arrangement of hands-on training can encourage the students for active participation in vocational programmes. Development of any nation depends upon availability of natural resources as well as human resources. In Assam there are plenty of natural resources which can be gainfully exploited for development of Tourism industry. Immediate benefit of such initiatives is that sufficient direct and indirect job opportunities will be created.

3. Findings indicate that limited number of colleges have introduced vocational education courses. Despite time to time initiatives from UGC to include more colleges under Vocationalization programme, colleges are not showing proper interest to introduce such courses. This is an important observation noted by the investigator. Policy makers and educational administrators should give due attention to such issues and necessary modifications in government policies should be made to compel the college authorities to introduce sufficient number of need based vocational courses along with general courses in their curriculum.

This will also create opportunities for graduating students to develop some skills along with the traditional course to enhance their scope of employability.

4. Major problems faced during implementation of vocational education courses are lack of infrastructural facilities, shortage of equipment and lack of adequate faculty. Other difficulties mentioned by students and teachers are lack of appropriate study materials, laboratory facilities and field work facilities. Earlier studies carried out by different school of workers also mentioned about such problem. Usually financial irregularity is the primary reason behind all such problems. Therefore government should initiate processes to eliminate all sorts of obstacles in issuing financial grant. Adequate financial assistance should also be arranged for organizing good workshop and training programme for vocational students.

5. Success of an education system primarily depends upon the ability of the teachers to deliver the exact knowledge and vocational education cannot be an exception. Investigator found that teachers engaged in vocational education suffer from various problems. Vocational teachers have poor salary structure and therefore receive poor social status. Continuing professional development programmes are always relevant for improvement of teacher's competency. But for vocational teachers such types of professional development programmes are very less. Periodic training and refresher courses for in-service teachers help to increase their performance. It is recommended that implementing authority should arrange such professional development programmes on a periodic basis. Appointment of regular teachers instead of part time teachers will definitely produce better results.

6. Success of vocational courses largely depends upon the scope of placement of passed out students. In this case Public sector industries, NGOs and private sector industries have to perform a decisive role in ensuring job guaranty. It is the duty of the College authority to take up appropriate steps to establish proper link with the industries and NGOs for campus placement wherever possible. College authority should arrange Entrepreneurship development programmes for the unemployed youth so that they can develop their skills for self-employment.

7. It is suggested that the current pattern of vocational education must be restructured and updated according to the changing requirement of the society. These courses should be enriched with basic knowledge of core subjects, skills and should be practice oriented. Degree courses are usually preferred by students and among the certificate courses, most preferred one is the course with longer duration.

8. Along with the formal vocational education, non-formal vocational education should be considered with equal importance. Physically handicapped youth and dropout from colleges should be benefitted from non-formal vocational education so that they can also live in the society with dignity.

5.3 Suggestions for Further Research

Work presented in this study is embodiment of factual information of various vocational education courses continuing in general degree colleges along with analysis of current status of these courses. There are many more things to be explored in this broad area of research which can be considered as relevant for socio economic benefit of the country. Investigator would like to suggest the following studies:

1. Present study is confined within the general degree colleges under Gauhati University. Therefore similar study can be initiated with inclusion of general degree colleges under two universities of Assam viz., Dibrugarh University and Assam University.

2. Comparison of the implementation status of vocational education courses in the degree colleges under these three universities of Assam constitutes another research problem in this field.

3. Non formal vocational education is another important topic which can create hope for physically handicapped youths and for the college dropouts.

A study can be carried out to analyze the relevance of non-formal vocational education.

4. A comparative study can be undertaken to compare the employability status of vocational courses continuing in general degree colleges with the ones continuing in govt. polytechnics and ITIs.

5. There is a need to take up studies on gender based vocational choice of students.

6. Comparative study on problems and prospects of vocational education courses in Assam with that of other states of India is also an important research topic.

7. Studies can be taken up to analyze how findings of such studies can help the policy makers in developing new strategies.

8. Success of vocational education courses largely depends upon the vocational teachers and therefore satisfaction of the teachers is very important. Studies on job satisfaction of vocational teachers constitute another research problem in this field.

5.4 Conclusion

Education is the fundamental tool to apprise people with knowledge of our surroundings and current development in the world which subsequently enable them to become self – reliant and earn their livelihood. Technological development attained by human society has enormously increased the need of skilled persons which is difficult to achieve with the conventional education system. Conventional education system has created a large mismatch between the number of skilled person required for the industry and number of educated people produced by the system. To eliminate this mismatch between number of skilled person required and no of educated people produced by conventional education system, vocational education is the right solution. For a country like India which is saddled with a

billion plus population and facing severe challenges in almost every important areas such as education, health, employment, agriculture, rural development etc. careful planning of vocationalization of higher education is essential.

Findings of the study reveal many facts regarding current status of vocational education courses in general degree colleges of Assam. Only limited numbers of colleges have introduced vocational education courses and number of courses introduced by the colleges is very few. A convincing approach has to be developed which can bring these courses closer to larger section of students' community. It has also been observed that the employability factor greatly influence student's participation in these courses as is evident from the popularity of the courses like Tourism and Travel Management, Computer application course etc. Therefore existing courses either should be restructured to enhance their scope of employability or should be replaced with another one with better employment prospects. Government funding is another important factor controlling the process of Vocationalization. In this case all sorts of irregularities in government funding should be eliminated. From the study in can also be concluded that for success of vocational education courses system in the country, instead of part time vocational teachers' government should appoint preferentially regular teachers with better salary structure.

In the present scenario this type of study are relevant from the view point of current genuine problems like gross unemployment and for development of occupational proficiency. Findings of the study reveal that in order to achieve the core objective of introducing the vocational education courses, introduction of more number of vocational courses in the degree colleges is highly essential. It is also equally important to create sufficient awareness among the students as well as parents about the fruitfulness of such vocational courses. Arrangement of proper classroom facilities with state of the art infrastructure and adequately trained faculties can only improve the current status of these vocational education courses in general degree colleges of Assam. The study will definitely guide us towards generating highly skilled personnel for various industries and enterprises and thus prospering country's economic growth.

People's participation in organization and implementation of vocational education programme in the state of Assam is necessary for ensuring its acceptability and success. For systematic and flexible offering of vocational courses collective opinion from different section of people engaged in it can help development of effective strategies for successful implementation of these courses. Decentralization of the management and sound mechanism for coordinating the vocational education programme in the state is essential for successful implementation of these courses.

The vocational education courses in spite of the best intention and efforts from both central and state government have not received the desired level of success. Sincere, collective, co-ordinated, intense and urgent measures are needed to develop need based and demand driven vocational education courses. Efforts should be directed to look for new technologies which can help us to overcome the drawbacks of vocational education courses. Intervention of the newer smart government policies are expected to fuel attainment of speedy success of the vocational education system implemented at undergraduate level. Nevertheless introduction of vocational education at graduate and postgraduate courses assumes a larger significance because students at this stage are at the threshold of their practical life and they prepare themselves for assuming more socio-economic responsibilities.

As a general overview of the study presented here it can be concluded that India will have to strengthen its professional and vocational education system to generate sufficient number of skilled professional for socio economic upliftment. Finally in the words of Robert E Taylor Vocational education must participate in the search for coherence and optimal relationship between vocational education and other components of human resource development.

5.5 Summary of the Study

Background

Human development is a vital ingredient for building a nation. The main purpose of all development is to bring happiness among the people by improving their quality of life and standard of living. The instrument for human development is education. Therefore, education is recognized as one of the critical elements of the national development effort and higher education, in particular, is of vital importance for the nation, as it is a powerful tool to build knowledge based society of the 21st century. Higher education provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. Tertiary education is a critical pillar of human development which provides not only the high-level skills necessary for every labour market but also the training essential for all profession. It is these trained individuals who develop the capacity and analytical skills that drive local economies, support civil society, teach children, lead effective governments and make important decision which affect entire societies. The contribution of tertiary education is vital to the national innovation system and the development of human resources.

Vocational education in higher education sector in India is becoming highly relevant for filling up the vacuum created by the absence of appropriately skilled persons for various fields of work. People skilled in various vocations are of high demand in the world. Particularly higher vocational education is instrumental in imparting technology based knowledge to the students at undergraduate level with stronger ability to practice. Further it has been realized that for interlinking education with productivity and for meeting with the growing demand of skilled person, it is highly essential to introduce the concept even at higher educational institutions, preferably in general degree colleges.

In order to respond to the emerging opportunities and challenges in employment arena, vocational education emerged with priority. Imparting skills that are necessary for gainful employment, self-employment and entrepreneurship thus become the objective of vocational education. Vocational education was

introduced in Indian education system as a part of the attempts made to eliminate the mismatch between skills training and knowledge imparted and required for the available jobs with primary focus to convert the Senior secondary into the terminal stage of education. Literally speaking 'Vocational education' refers to activities designed to contribute to occupational proficiency. UNESCO defined vocational education as a comprehensive term embracing, those aspects of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in the various sectors of economic and social life.

In India the concept of Vocationalization was initiated by the Kothari Commission for bringing education into close contact with productivity. Kothari Commission (1964-66) mentioned: "We visualize the future trend of school education towards a fruitful mingling of general and vocational education- general education containing some elements of pre-vocational and technical education and vocational education in turn, having an element of general education".

So far as the vocational education is concerned, it has been found that lot of studies were carried out on Vocational education in India and abroad. In case of India, most of the studies were carried out on Vocationalization of education at +2 stages. Very few studies were found on vocational education at undergraduate level in India. Thimmaiah et al. (1982) studied the problems and prospects of vocational education in Karnataka state. Vocational interest of arts, science & commerce students were investigated by Kureshi 1990 & Reddy et al. (2011). Prakash & Gupta (2002) studied about restructuring the vocational courses for ITI graduates. In one of the significant study, Institute of Applied Manpower Research (IAMR) (2001) studied about the evaluation of the vocational education scheme at degree level and investigator has found this study somewhat similar with the present study.

It has been observed from the reviews of related literature that very few studies were carried out in Assam. In this regard the investigator found Barooah (1986) studied the status of polytechnic vocational education in Assam during the period 1948 - 1978. Bhagabati (2006) investigated on vocational education among

ST / SC in ITIs of Assam. Lahkar & Kakati (2008) carried out research on Vocationalization of secondary education. Lama (2012) studied on vocational education through distance mode. Investigator did not find any studies carried out on vocational education at general degree colleges under Gauhati University. Since in the present day context vocational education is considered as the key parameter for perpetuating the growth of state and national level economy, therefore the present problem has been stated as- **"Vocational Education Courses in the General Degree Colleges under Gauhati University: An Evaluative Study".**

Objectives

The study has been conducted with the following objectives.

1. To study the profile of the vocational education courses provided by the general degree colleges under Gauhati University.
2. To study the infrastructural facilities and equipment available for mobilization of the vocational education courses in the general degree colleges under Gauhati University
3. To study student's participation in various vocational education courses and faculty strength in various vocational education courses in the general degree colleges under Gauhati University.
4. To study the vocational choice of the students pursuing vocational education courses in the general degree colleges under Gauhati University.
5. To understand the perception of the students and the teachers towards vocational education courses in the general degree colleges under Gauhati University.
6. To study the satisfaction of the students on existing facilities, content and duration of vocational education courses in the general degree colleges under Gauhati University
7. To study the satisfaction of the teachers on the way of implementation of the vocational education courses in the general degree colleges under Gauhati University.
8. To find out the difficulties faced by students and teachers of vocational education courses in the general degree colleges under Gauhati University.

Delimitations of the Study

The study undertaken by the investigator has the following delimitations-

1. The study is confined to the general degree colleges affiliated to Gauhati University where vocational education courses are introduced.

2. The study is confined to the undergraduate students in the general degree colleges pursuing vocational education courses during the period of 2009-2011.Therefore the study is not confined to the students who are not undertaking vocational education courses and also the students pursuing vocation education courses before and after the study period.

3. The study is concerned with the teachers teaching vocational education courses in the general degree colleges. Therefore the study is not related to the teachers who are not teaching vocational education courses.

Methodology

The present study has been conducted under Descriptive method. Descriptive research includes surveys and fact-finding enquiries of different kinds. Therefore, descriptive survey method has been employed for the present study as it aimed to study the fact of various vocational education courses that are introduced in the general degree colleges under Gauhati University.

Population

The population of the present study includes the principals, teachers and students of general degree colleges affiliated to Gauhati University where vocational education courses are introduced. There are 191 colleges (As on 01-04-2011 G.U Affiliation List) affiliated to Gauhati University covering 14 districts namely- Kamrup (Rural/Metro), Dhubri, Bongaigaon ,Barpeta, Kokrajhar, Chirang, Darrang, Sonitpur,, Morigaon, Nagaon, Goalpara, Nalbari, Baksa and Udalguri. Investigator has found that out of 191 general degree colleges, only 36 colleges in eleven districts introduced vocational education courses during 2009 – 2011. Therefore the population of the study consists of all these 36 colleges

affiliated to Gauhati University where vocational education courses are offered. The principals of these colleges, the teachers engaged in vocational education courses and the students pursuing vocational education courses are the population of the study.

After conducting the field survey for the 36 colleges under study, investigator has found a total of 1724 students during 2009 – 2010 and 1751 students during 2010 – 2011 pursuing vocational education courses. Similarly teacher's population for the study has been found 212 which include only those teachers who are engaged in teaching of vocational education courses during the period mentioned above. The study also includes the principals of all the 36 colleges.

Sampling Design

In the present study sampling has been done only in case of students and teachers because as already mentioned above, the number of colleges introducing vocational education courses are few in number i.e. only 36. So all the 36 colleges have been selected as sample college on the basis of saturated sampling method. Similarly all the 36 principals were also taken into consideration for the study. However the sample of student population are selected on the basis of purposive sampling method under non-probability sampling plan as the actual volume of population was not clearly known to the investigator. After the field survey it was found that 1751 students were pursuing vocational education courses in the 36 colleges during 2010-2011. Since it is virtually not possible to approach each and every student for data collection therefore investigator has decided to consider from each colleges approximately 20% (or more in few cases wherever the investigator finds it more convenient) of total students enrolled in vocational education courses. Another important point is that since among the 36 colleges there are few colleges where only either boys' students or girls' students are found in the vocational education courses, therefore the approximate 20% or more referred above does not consider boys' and girls' separately and considers only the total students enrolled in vocational education courses. Thus boys' and girls' students are selected on the basis of convenient sampling. In this way the

investigator found 380 students out of 1751 students in all the 36 colleges and these 380 students are taken as sample for the study.

Similarly same purposive sampling method has been followed for selection of the sample teachers. After the field survey the investigator found 212 teachers engaged in teaching vocational education courses in 36 general degree colleges. Taking approximately 60% of total teachers teaching vocational education courses in each college, the present study consists of 135 teachers as sample.

In this way the present study consists of 380 students (175 boys and 205 girls), 135 teachers and 36 principals as final sample for the study.

Tools of Data Collection

For the present study the investigator has to select inquiry forms of tools. Among the inquiry forms questionnaire and information schedule are considered as suitable tools for the problem. Therefore, tools consists of two self-prepared questionnaire one for the students and other for the teachers. An information schedule was also constructed for the principals.

Description of the Tools

1. A self-prepared questionnaire was administered to the undergraduate students undertaking vocational education courses. The questionnaire consisted of two parts 'A' & 'B'. Part 'A' included some general information about the students and part 'B' included statements related to the objectives of the study. The questionnaire consisted of both close ended and open ended questions.
2. A self-prepared questionnaire was administered to the teachers involving in teaching vocational education courses. In this case also the questionnaire consisted of two parts 'A' & 'B'. Part 'A' included some general information about the teachers and part 'B' included statements related to the objectives of the study. The questionnaire consisted of both close ended and open ended questions.

3. An information schedule was prepared for the principals of the colleges. It consisted of blank tables seeking information related to various aspects of vocational education courses.

Statistical Techniques used

In the present study data have been analysed quantitatively using the following methods:

i) Tabulation of data
ii) Graphical representation
iii) Percentage calculation

Major Findings

In order to provide a recap of the analysis made in this study, the following major findings are highlighted:

1. Limited numbers of colleges have introduced vocational education courses and number of courses introduced by each college was few. Even some of the colleges have introduced only one vocational education course. Investigator has found a total of 45 vocational education courses in 36 general degree colleges under Gauhati University. It has been found during the study that acceptability of vocational education courses among the general students is not as per expectations.

2. 'Tourism & Travel Management' and 'Functional English' courses are introduced in majority of the colleges where maximum numbers of students have participated. Computer related courses such as Computer application, Computer hardware / Software, Networking etc. are also introduced in significant number of colleges. Investigator has found through informal discussion with the students that recruitment scenario for passed out students of these courses were relatively better.

3. It has been observed that most of the vocational education courses are certificate course with varied duration. Numbers of degree and diploma courses are less. Majority of the courses are sponsored by UGC while self-sustained courses are also found.

4. Study also reveals that class room facilities provided for the courses were more or less sufficient but other facilities like equipment, laboratory & workshop facilities, library facilities were not at per. Study materials provided for many of the courses were also not appropriate.

5. Study reveals that there were marked irregularities in government funding for procurement of sophisticated equipment.

6. Findings show that Tourism and Travel Management course attracted equally both boys' and girls' students. It is observed that depending on the type of the course, boys and girls participation was different. Some courses attracted more girls' students while some other attracted more boys' students. Overall girls' participation in vocational education courses is better than the boys'.

7. Vocational education courses in general degree colleges are run by both part time and full time teachers and relatively more part time teachers are engaged. Investigator has observed during data collection that in many cases teachers engaged in vocational education courses were not exactly from vocational discipline, rather some teachers were engaged from the department coordinating the particular vocational education course. As a result many times students were unable to receive the exact benefit of the course.

8. It can be ascertained from the study that compared to general courses, enrolment in vocational education courses are very poor. However for some colleges the enrolment ratio was slightly better. It was revealed from the discussion with the teachers during the study period that for some courses due to poor student's participation, college authority was compelled to discontinue the course after one or two years.

9. Study reveals that vocational choice of students was not influenced by family background. Employment prospects of the vocational education courses mainly determine the vocational choice of students. It can be mentioned that students are more concerned about their future career. However many students prefer vocational education out of their own interest while some others participate in vocational education to become self-reliant.

10. During the study it has been found that student's perception about the vocational education courses is positive and the courses able to create motivation among students. According to student's view vocational education courses are important tool for employment generation.

11. Introduction of more vocational education courses having good employment prospects can improve student's participation in vocational education courses. Choice of alternate vocational education courses reflected gender based preferences of students for some particular courses. However there are many courses which are equally been preferred by both boys' and girls' students.

12. Teachers have very good perception towards vocational education courses. Teachers believe on the capacity of vocational education courses in improving employment prospects. They also believe that existing vocational education courses are capable of producing the gap of properly skilled person for the world of works.

13. Teachers are of the view that proper industrialization is required for effective implementation of the vocational education courses. For success of vocational education courses, active participation by public sector industries is very much essential.

14. Students are more or less satisfied with the facilities and content of the vocational education courses. Of course some students are not satisfied with duration of courses and teaching methodology adopted by the teachers.

15. Most of the teachers are not satisfied with the way of implementation of vocational education courses. Lack of infrastructure facilities, poor salary

structure, lack of modern equipment, management problem, inappropriate syllabus etc. are the causes of their dissatisfaction. Poor student's enrolment in vocational courses and lack of general awareness among the students de-motivated the teachers. Even the permanent vocational teachers are underpaid compared to other teachers in general degree colleges which creates a feeling of humiliation among them. Besides vocational education teachers are lacking due respect in the society.

16. It is seen that students whoever have faced difficulties in pursuing vocational education courses, mainly referred about infrastructure facilities, lack of appropriate faculties, lack of equipment, lack of study materials etc.

Conclusion

For a country like India which is saddled with a billion plus population and facing severe challenges in almost every important areas such as education, health, employment, agriculture, rural development etc. careful planning of Vocationalization of higher education is very much important.

Findings of the study reveal many facts regarding current status of vocational education courses in the general degree colleges under Gauhati University. Only limited numbers of colleges have introduced vocational education courses. A convincing approach has to be developed which can bring these courses closer to larger section of student community. Proper mechanism for regulation of Government funding is necessary for success of these courses. From the study in can also be concluded that for success of vocational education, sufficient numbers of competent teachers from regular category need to be recruited rather than the Part time vocational teachers.

In the present scenario this type of study considered significant from the view point of gross unemployment problem and development of skilled manpower. Introduction of more number of vocational courses with enhanced employment prospects is essential for active student's participation. State of the art infrastructure and adequately trained faculties, along with proper library and laboratory facilities

can improve the current status of these vocational education courses provided in the general degree colleges under Gauhati University.

For systematic and flexible offering of vocational courses it is important to collect opinion from different section of people engaged in it. The vocational education courses in spite of the best intention and efforts from both central and state government have not received the desired level of success. For countries like India and more specifically states like Assam which are saddled with the problem of gross unemployment, proper emphasis must be given for successful vocationalization of general education systems. Such type of efforts will certainly minimize the dearth of skilled personnel for industry and academia. Therefore sincere, collective, co-ordinated, intense and urgent measures are needed to develop need based and demand driven vocational education courses.

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APPENDICES

APPENDIX-I

Information Schedule for colleges

1. General information:

   a. Name of the College:

   b. Year of establishment:

   c. Address:

   d. Name of the Principal:

   e. Location of the college Rural / urban / Semi urban

   f. Faculties in the college
      a. Only Arts
      b. Only Science
      c. Only Commerce
      d. Both Arts and commerce
      e. Both Arts and Science
      f. Arts/ Science/ commerce

2. Vocational course(s) introduced:

S. No	Name of the course	Year of commencement
1		
2		
3		
4		
5		

3. No. of. Students enrolled in each course:

Name of the course	Year	Girls	Boys	Total

4. Sustainability of the course:

Name of the course	Sponsorship status		
	UGC sponsored	Self-sustained	Other source

5. Equipment status:

Name of the course	Equipment needed	Availability of the equipment

6. Faculty status for each course:

Name of the course	No. of faculty required	No. of available faculty	
		Full time	Part time

7. Duration of each course:

S.No.	Name of the course	Nature of the course (Certificate or diploma course)	Duration
1.			
2.			
3.			
4.			
5.			

8. Problems faced in the implementation of vocational courses (please tick) :

- ☐ Inadequate infrastructure
- ☐ Lack of trained teacher
- ☐ Shortage of student
- ☐ Problem of finance
- ☐ Any other please specify

9. Any suggestions for proper implementation of vocational course.

Signature of the Principal

APPENDIX-II

Questionnaire for Teachers

A. Preliminary information:

i) Name of the faculty:

ii) Age: iii) Sex:

iv) Educational qualification: v) Address:

vi) Name of the college:

vii) Nature of position: Part time / full time

viii) Monthly salary:

ix) Subject taught:

x) Any specific training:

xi) Caste: xii) Religion:

B. Questions related to the objectives of the study :

Sl. No.	Statements /question (please provide your view on the space provided just below the question/statement)		
1.	Please briefly justify the need of implementation of vocational education in your own words?		
2.	2. Are you satisfied with the way of implementation of vocational education in your college? If not what are the causes of your dissatisfaction?		
3.	Do you think that proper implementation of vocational education can substantially improve the issue of unemployment?	Yes ☐	No ☐

4.	Whether the current vocational courses are succeeded in producing properly skilled persons?	Yes	No
		☐	☐
5.	Whether the ongoing vocational courses are succeeded in enhancing employment prospect?		
6.	How is the response from public sector industries/enterprises in providing employment for the passed out students from vocational courses?		
7.	Whether there is sufficient no of student participation in various vocational courses?	Yes	No
		☐	☐
8.	Whether according to you the existing infrastructures for vocational courses are as per the requirement?	Yes	No
		☐	☐
9.	Whether student enrolled in vocational courses are enjoying sufficient library and laboratory facilities?	Yes	No
		☐	☐
10.	In case of required sophisticated equipment how easily you can obtain the necessary funding? (A) As and when required (B) Somewhat delayed process (c) Irregular funding (please tick the appropriate answer)		
11.	Does the vocational courses are able to produce need based skilled persons for various employment prospects?	Yes	No
		☐	☐
12.	Whether you have been equipped with appropriate training and communication facilities needed for your class room teaching?	Yes	No
		☐	☐
13.	Whether the institute have sufficient contingency funding required for repair and maintenance of available equipment?	Yes	No
		☐	☐
14.	Whether your institute has sufficient faculties for smooth	Yes	No

	conduct of the classes for different vocational subjects.	☐	☐
15.	Whether you face any recurring problems during your regular classroom teaching? If so then state few of them.		
16.	Do you want to suggest for replacement of existing vocational subjects in your institute?	Yes	No
		☐	☐
17.	If answer to the above question is 'yes', then what are the subjects you would like to prefer?		
18.	Would you like to suggest modification of the existing course content of the vocational subject taught by you?		
19.	Would you like to suggest rectification on the existing fees structure for the student in different vocational courses?	Yes	No
		☐	☐
20.	Whether you opt for majority diploma courses over certificate courses?	Yes	No
		☐	☐
21.	Without proper industrialization, vocational courses will not succeed in reaching it's core objectives. Do you agree?	Yes	No
		☐	☐

Signature of the Teacher

APPENDIX- III

Questionnaire for Students

a) General information:

i) Name of the student:

ii) Age: iii) Sex:

iv)Level of Education: v) Address:

vi) Father's occupation: vii) Father's monthly income:

viii) Name of the college:

ix) Caste: x)Religion;

xi) Location of the College: Rural / Urban / Semi Urban

B. **Questions related to the objectives of the study :**

Sl.No.	Statement /question	Response	
		Yes	No
1.	Vocational education is an important tool for execution of the process of enhancement of employability.	☐	☐
2.	Do you believe that the vocational subjects chosen by you are compatible with available local resources, for employment	☐	☐

	generation?		
3.	Whether your college has sufficient equipment for implementation of the vocational courses offered?	☐	☐
4.	Whether adequate class rooms with appropriate furniture are being provided for the students undertaking vocational courses?	☐	☐
5.	Whether separate class rooms are provided for regular vocational classes?	☐	☐
6.	Do you have facilities for going outside and does the field work?	☐	☐
7.	Do you have appropriate faculties for various vocational subjects?	☐	☐
8.	Are you satisfied with the teaching method adopted by your teachers?	☐	☐
9.	Is the time table properly set for vocational subjects in your routine?	☐	☐
10.	Does the course content in different vocational subjects are appropriate?	☐	☐
11.	Whether student enrolled in vocational courses are enjoying sufficient library and laboratory facilities?	☐	☐
12.	Whether the ongoing vocational courses are suitable for creating motivation among students?	☐	☐
13.	Rapid development in the internet communication system might accelerate the effective implementation of vocational courses. Do you agree?	☐	☐

14.	Are you in favour of introducing some other course in place of some existing ones?	☐	☐
15.	If answer to the above question is 'yes' what are the courses you like to suggest?	1. 2. 3.	
16.	Would you like to suggest for more appropriate training for the vocational teachers for effective implementation of the courses?	☐	☐
17.	Are you satisfied with the existing facilities for vocational courses in your colleges (please tick)? i) highly satisfied ii) satisfied iii) uncertain iv) unsatisfied v) highly unsatisfied		
18.	Are you satisfied with the contents of the courses (please tick)? i) highly satisfied ii) satisfied iii) uncertain iv) unsatisfied v) highly unsatisfied		
19.	Are you satisfied with the duration of the courses (please tick)? i)highly satisfied ii) satisfied iii) uncertain iv) unsatisfied v) highly unsatisfied		
20.	Are you facing any problems in receiving vocational courses in your college?	Yes ☐	No ☐
21.	If answer to above question is 'yes' then please specify the problems you are facing:		
22.	What type of courses do you prefer (Please tick)? i) Tourism & Travel management ii) Industrial fish and fisheries iii) Forestry and wildlife iv) Computer application v) Environment and water management vi)		

	Functional English vii)Fashion Designing viii) Any other, please specify		
23.	Vocational preference of students is mainly depends on family background. Do you agree?	Yes ☐	No ☐
24.	Why you have preferred to opt for your current vocational subject (please tick)? i) Employment prospect ii) Own interest iii) Faculty & Infrastructure iv)Self income v) others (please specify)		

Signature of the Student

APPENDIX – IV
Gauhati University College Affiliation List

GAUHATI UNIVERSITY
GUWAHATI-14
LIST OF COLLEGES AFFILIATED TO THE GAUHATI UNIVERSITY
(As on 01-04-2011)

	KAMRUP DISTRICT	
Sl. No.	**Name of College**	**General Degree College**
1.	Assam Engineering College, Jalukbari, Guwahati-13 (B.E)	
2.	Arya Vidyapeeth College, Guwahati-16 (B.A./B.Sc)	√
3.	Asom Sikshak Prasikshan Mahavidyalaya, Lankeswar, Guwahati-14 (B.Ed)	
4.	B. Barooah College, Guwahati-7 (B.A./B.Sc.)	√
5.	B.P. Chaliha College, Nagarbera-781127 (B.A./B.Sc)	√
6.	Binandi Ch. Medhi College, Ramdia-781102 (B.A.)	√
7.	Baihata Chariali B.Ed College, Baihata Chariali-781381 (B.Ed)	
8.	Beltola College, Guwahati-28 (B.A.)	√
9.	Bamundi Mahavidyalaya, Bamundi-781103 (B.A.)	√
10.	Cotton College, Guwahati- (B.A./B.Sc)	√
11.	Chhaygaon College, Chhaygaon-781124 (B.A./B.Com)	√
12.	College of Education, Christian Basti, Guwahati-5 (B.Ed)	
13.	Chhamaria Anchalik College, Chhamaria-781136 (B.A.)	√
14.	College of Education, Boko-781123 (B.Ed)	
15.	Dakshin Kamrup College, Mirza-781125 (B.A./B.Sc.)	√
16.	Dimoria College, Khetri-782403 (B.A./B.Sc)	√
17.	Damdama College, Kulhati-781104 (B.A.)	√

18.	Dispur College, Dispur-6 (B.A./B.Com)	√
19.	Dispur Law College, Dispur-6 (LL.B.- 3 & 5 Years)	
20.	Dakshin Kamrup Girls' College, Mirza-781125 (B.A.)	√
21.	Dr. Anita Baruah Sarmah College of Education, Guwahati-24 (B.Ed)	
22.	Dakshin Guwahati B.Ed College, Fatasil Ambari, Guwahati-781025 (B.Ed)	
23.	F.A. Ahmed College, Garaimari, Tukrapara-781137 (B.A.)	√
24.	Gauhati Commerce College, Guwahati-21 (B.Com)	√
25.	Gauhati University Law College, Guwahati-14 (LL.B.- 3 & 5 Years)	
26.	Gauhati Medical College, Guwahati-32 (Medicine)	
27.	Guwahati College, Bamunimaidam, Guwahati-21 (B.A./B.Sc)	√
28.	Govt. K.K. Handique Sanskrit College, Jalukbari, Guwahati-14 (Upadhi, Sanskrit)	
29.	Govt. Ayurvedic College, Jalukbari, Guwahati-14 (BAMS)	
30.	Govt. Banikanta Kakati College of Teacher Education, LachitNagar, Guwahati-7(B.Ed)	
31.	Govt. B.R. Medhi Law College, Guwahati-1 (LL.B.- 3 & 5 Years and LL.M)	
32.	Handique Girls' College, Guwahati-1 (B.A./B.Sc)	√
33.	Hari Gayatri Das College, Azara, Guwahai-17 (Arts)	√
34.	J.N. College, Boko- 781123 (B.A./B.Sc)	√
35.	J.B. College Guwahati-3 (LL.B.- 3 & 5 Years and LL.M)	
36.	K.R.B. Girls' College , Guwahati-9 (B.A.)	√
37.	K.R.D. College of Education, Chhaygaon-781124 (B.Ed)	
38.	Kanya Mahavidyalaya, Guwahati-21 (B.A.)	√
39.	K.C. Das Commerce College, Chatribari, Guwahati-8 (B.Com)	√
40.	Karmashree Hiteswar Saikia College, Panjabari Road, Guwahati-	√

	22 (B.A.)	
41.	L.C. Bharali College, Maligaon Guwahati-11 (B.A,/B.Sc)	√
42.	Manabendra Sharma Girls' College, Rangia-781354 (B.A.)	√
43.	Madhya Kampeeth College, Borka, Pub Baka (B.A.)	√
44.	North Gauhati College, Guwahati-31 (B.A./B.Sc)	√
45.	Narangi Anchalik Mahavidyalaya, Guwahati-26 (B.A.)	√
46.	National Institute For Teacher Education, Khetri-782403 (B.Ed)	
47.	Pragjyotish College, Guwahati-9 (B.A./B.Sc)	√
48.	Pandu College, Guwahati-12 (B.A./B.Sc)	√
49.	Pub-Kamrup College, Baihata Chariali-781381 (B.A./B.Sc)	√
50.	Puthimari College, Soneswar-781382 (B.A.)	√
51.	Paschim Guwahati Mahavidyalaya, Dharapur, Guwahati-33 (B.A./B.Com.)	√
52.	Paschim Barigog Anchalik Mahavidyalaya, Baranghati-781350 (B.A.)	√
53.	Patidarrang College, Loch- 781381 (B.A.)	√
54.	Pub-Bongsor College, Pacharia-781104 (B.A.)	√
55.	Regional College of Nursing Guwahati-32 (Nursing)	
56.	Regional Dental College, Guwahati-22 (BDS)	
57.	Rangia College, Rangia-781354 (B.A./B.Sc./B.Com)	√
58.	R.G. Baruah College Guwahati-25 (B.A./B.Com)	√
59.	Rangia T.T. College, Rangia-781354 (B.Ed)	
60.	Rampur Anchalik College , Rampur-781132 (B.A.)	√
61.	Suren Das College, Hajo-781103 (B.A.)	√
62.	State College of Music, Guwahati-1 (B. Music)	
63.	S.B.M.S. College, Sualkuchi-781103 (B.A./B.Sc)	√
64.	S.B. Deorah College, Ulubari, Guwahati-7 (B.A.)	√
65.	Sonapur College, Sonapur-782402 (B.A.)	√
66.	Saraighat College,Changsari-781101 (B.A.)	√

67.	Sontali Anchalik College, Mahatoli-781136 (B.A.)	√
68.	T.T. College, Mirza-781125 (B.Ed)	
69.	Vidya Bharati College, Kendua-781121 (B.A.)	√
70.	West Guwahati Commerce College, Maligaon, Guwahati-12 (B.Com)	√
71.	West Guwahati College of Education, Templeghat, Guwahati-12 (B.Ed)	
	DARRANG DISTRICT	
72.	Deomornoi Degree College, Deomornoi-784147 (B.A.)	√
73.	Deomornoi B.Ed. College, Deomornoi-784147 (B.Ed)	
74.	Kharupetia College, Kharupetia- 784115 (B.A.)	√
75.	Mangaldoi College, Mangaldoi- 784125 (B.A./B.Sc)	√
76.	Mangaldoi Commerce College, Mangaldoi-784125 (B.Com)	√
77.	Mangaldoi Govt. T.T. College, Mangaldoi-784125 (B.Ed)	
78	Mangaldoi Law College, Mangaldoi-784125 (LL.B)	
79.	R.C Saharia T.T. College, Tangla)-784521	
80.	Sipajhar College, Sipajhar-784145 (B.A.)	√
81.	Sipajhar B.Ed. College, Sipajhar-784145 (B.Ed)	
	NALBARI DISTRICT	
82.	Barbhag College, Kalag-781351 (B.A./B.Sc)	√
83.	Barkhetri College, Mukalmua-781126 (B.A.)	√
84.	Dhamdhama Anchalik College, Dhamdhama-781349 (B.A.)	√
85.	Kamrup College, Chamata-781306 (B.A.)	√
86.	M.N.C. Balika Mahavidyalaya, Nalbari-781335 (B.A.)	√
87.	Nalbari College, Nalbari-781335 (B.A./B.Sc)	√
88.	Nalbari Commerce College, Nalbari-781335 (B.Com)	√
89.	Nalbari B.Ed College, Nalbari781335 (B.Ed)	
90.	Nalbari Law College, Adya Bharali Nagar -781335 (3 & 5 Years LL.B.)	

91.	Swahid Smiriti Mahabidyalaya (Degree), Belsore-781304 (B.A.)	√
92.	S.D.P. College of Teachers Education, Tihu-781371 (B.Ed)	
93.	Swahid Sowarani College, Bamunbori-781312 (B.A.)	√
94.	Tihu College, Tihu-781371 (B.A./B.Sc)	√
95.	Uttar Kampith Mahavidyalaya, Jagara-781310 (B.A.)	√
	BARPETA DISTRICT	
96	Barnagar College, Sorbhog-781317 (B.A.)	√
97.	Bajali College, Pathsala-781325 (B.A./B.Sc)	√
98.	Barpeta Road Howli College, Howli-781316 (B.A./B.Sc./B.Com)	√
99.	Bapujee College, Sarthebari-781307 (B.A.)	√
100.	Baosi Banikanta Kakati College, Nagaon, Barpeta-781309 (B.A./B.Sc)	√
101.	B.H.B. College, Sarupeta-781318 (B.A.)	√
102.	Bhawanipur Anchalik College, Bhabanipur-781352 (B.A.)	√
103.	Barpeta B.T. College, Barpeta-781301 (B.Ed)	
104.	Barpeta Girls' College, Barpeta-781301 (B.A.)	√
105.	Bajali T.T. College, Patacharkuchi-781326 (B.Ed)	
106.	Barpeta Law College, Barpeta-781301 (LL.B)	
107.	Barnagar B.Ed College, Sorbhog-781317 (B.Ed.)	
108.	Barpeta Bongaigaon College, Langla-781319 (B.A.)	√
109.	G.L. Choudhury College, Barpeta Road-781315 (B.A.)	√
110.	Harendra Citra College, Naligaon-781352 (B.A.)	√
111.	Janapriya College, Garemari-781314 (B.A.)	√
112.	Kayakuchi College, Kayakuchi-781352 (B.A.)	√
113.	Luitparia College, Kalairdia-781127 (B.A.)	√
114.	M.C. College, Barpeta-781301 (B.A./B.Sc)	√
115.	Madhya Kamrup College, Subha, Chenga-781305 (B.A.)	√
116.	Mandia Anchalik College, Mandia-781308 (B.A.)	√
117.	Milanjyoti College, Itervita-781316 (B.A.)	√

118.	North Kamrup College, Baghmara-781328 (B.A.)	√
119.	Nabajyoti College, Kalgachia- 781319 (B.A./B.Sc)	√
120.	Nirmal Haloi College, Patacharkuchi-781326 (B.A.)	√
121.	Navasakti College, Majgaon-781313 (B.A.)	√
122.	Srimanta Sankar Madhab Mahavidyalaya, Bhatkuchi, (B.A.)	√
123.	Uttar Barpeta College, Sankuchi-781301 (B.A.)	√
	BONGAIGAON DISTRICT	
124	Abhayapuri College, Abhayapuri-783384 (B.A./B.Sc)	√
125.	Bongaigaon College, Bongaigaon-783380 (B.A./B.Com)	√
126.	Birjhora Mahavidyalaya, Bongaigaon-783380 (B.Sc.)	√
127.	Birjhora Kanya Mahavidyalaya, Bongaigaon-783380 (B.Sc.)	√
128.	Bongaigaon B.Ed College, Bongaigaon-783380 (B.Ed)	
129.	Bongaigaon Law College, Bongaigaon-783380 (LL.B.)	
130.	Indira Gandhi College, Boitamari-783389 (B.A.)	√
131.	Manikpur Anchalik College, Manikpur-783392 (B.A.)	√
132.	Mahatma Gandhi College, Chalantapara-783388 (B.A.)	√
133.	R.G. Memorial College, Lengtisinga-783384 (B.A.)	√
	GOALPARA DISTRICT	
134.	Agia College, Agia-783120 (B.A.)	√
135.	Bikali College, Dhupdhara-783123 (B.A.)	√
136.	Dudhnoi College, Dudhnoi-783124 (B.A./B.Sc)	√
137.	Dolgoma Anchalik College, Dolgoma-783125 (B.A.)	√
138.	Govt. B.T. College, Goalpara-783101 (B.Ed.)	
139.	Goalpara College, Goalpara-783101. (B.A./B.Sc.)	√
140.	Goalpara Law College, Goalpara-783101 (LL.B.)	
141.	Habraghat Mahavidyalaya, Krishnai-783126 (B.A.)	√
142.	Jaleswar College, Tapoban-783132 (B.A.)	√
143.	Lakhipur College, Lakhipur-783129 (B.A.)	√
144.	West Goalpara College, Balarbhita-783129 (B.A.)	√

	KOKRAJHAR DISTRICT	
145.	Bodofa U.N. Brahma College, Dotma-783347 (B.A.)	√
146.	Commerce College, Kokrajhar-783370 (B.Com.)	√
147.	Fakiragram College, Fakiragram-783345 (B.A.)	√
148.	Gossaigaon College, Gossaigaon-783360 (B.A./B.Sc)	√
149.	Govt. College of Teacher's Education, Kokrajhar 783370 (B.Ed.)	
150.	Girls' College, Kokrajhar-783370 (B.A.)	√
151.	Gossaigaon B.Ed. College, Gossaigaon-783370 (B.Ed.)	
152.	Hatidhura College, Hatidhura-783332 (B.A.)	√
153.	Janata College,Sarfunguri-783332 (B.A.)	√
154.	Kokrajhar Govt' College, Kokrajhar-783370 (B.A./B.Sc)	√
155.	Kokrajhar Music and Fine Arts College, Kokrajhar (B.Music & Fine Arts)	
156.	Kokrajhar Law College, Kokrajhar-783370	
157.	Swami Yogananda Giri College, Sakti Ashram -783354(B.A)	√
158.	Science College, Kokrajhar -783370 (B.Sc)	√
	CHIRANG DISTRICT	
159.	U.N Brahma College, Udalguri -784509 (B.A/B.Sc)	√
160.	Bijni College, Bijni-783390 (B.A. /B.Sc.)	√
161.	Basugaon College, Basugaon-783372 (B.A)	√
162.	Bengtol College, Bengtol-783394 (B.A.)	√
	UDALGURI DISTRICT	
163.	Udalguri College, Udalguri-784509 (B.A./B.Sc)	√
164.	Mazbar College, Mazbat -784507 (B.A.)	√
165.	Kalaguru Bishnu Rabha Degree College, Orang-784114 (B.A.)	√
166.	Tangla College, Tangla-784521 (B.A./B.Sc/B.Com)	√
167.	Khoirabari College, Khorabari-784522 (B.A.)	√
	BAKSA DISTRICT	
168.	Goreswar College, Goreswar-781366 (B.A.)	√

169.	Barama College, Barama-781346 (B.A./B.Sc)	√
170.	Gyanpeeth Degree College, Nikashi-781372 (B.A.)	√
171.	Salbari College, Salbari-781318 (B.A.)	√
172.	B.B. Kishan College, Jalahghat-781318 (B.A.)	√
173.	Thamna Anchalik Degree College, Thamna-781377 (B.A.)	√
174.	Mushalpur College, Mushalpur-781372 (B.A.)	√
	DHUBRI DISTRICT	
175.	Alamganj Rangmari College, Alamganj-783331 (B.A.)	√
176.	B.N. College, Dhubri-783324 (B.A./B.Sc)	√
177.	Bilasipara College, Bilasipara-783348 (B.A./B.Sc)	√
178.	Chilarai College, Goalkganj-783334 (B.A.)	√
179.	Dhubri Girls' College, Dhubri-783324 (B.A.)	√
180.	Dhubri P.G.T.T. College, Bidyapara-783324 (B.Ed)	
181.	Dhibri Law College, Dhubri-783324 (B.Ed)	
182.	Dharmasala College, Dharmsala-783325 (B.A.)	√
183.	Halakura College, Mahamayahat-783335 (B.A.)	√
184.	Hatsingimari College, Hatsingimari-783135 (B.A/B.Sc.)	√
185.	Hamidabad College, Jamadarhat-783330 (B.A.)	√
186.	Mankachar College, Mankachar-783131 (B.A./B.Sc)	√
187.	P.B. College, Gouripur-783331 (B.A./B.Com)	√
188.	Progati College, Agmoni, Chapar-783335 (B.A.)	√
189.	Ratnapith College, Chapar-783371 (B.A.)	√
190.	Sapatgram College, Sapatgram-783337 (B.A.)	√
191.	South Salmara College, South Salmara-783127 (B.A.)	√
	SONITPUR DISTRICT	
192.	Biswanath College, Chariali-784176 (B.A./B.Sc.)	√
193.	Biswanath College of Education, Chariali-784176 (B.Ed.)	
194.	Behali Degree College, Borgang-784167 (B.A.)	√
195.	Chaiduar College, Gohpur-784168 (B.A./B.Sc)	√

196.	Chatia College, Sootia-784175 (B.A.)	√
197.	Darrang College, Tezpur (B.A./B.Com/B.Sc)	√
198.	Govt. college of Teachers Education (CTE), Tezpur-784154 (B.Ed.)	
199.	Kalabari College, Kalabari-784178 (B.A.)	√
200.	L.O.K.D. College, Dhekiajuli-784110 (B.A./B.Sc)	√
201.	L.G.B. College, Tezpur-784154 (B.A.)	√
202.	Rangapara College, Rangapara-784505 (B.A./B.Com)	√
203.	Tezpur College, Tezpur, -784001 (B.A.)	√
204.	Tezpur Law College, Tezpur-784001 (LL.B.)	
205.	T.H.B. College, Jamugurihat-784189 (B.A./B.Sc)	√
	MORIGAON DISTRICT	
206.	Bhuragaon College, Bhuragaon (B.A.)	√
207.	Borchila Kanpai Bordoloi College, Borchila-782142 (B.A.)	√
208.	Charaibahi College, Charaibahi-782103 (B.A.)	√
209.	College of Education, Morigaon-782105 (B.Ed)	
210.	Ghana Kanta Barua College, Morigaon-782105 (B.A.)	√
211.	Jagiroad College, Jagiroad-782410 (B.A./B.Sc)	√
212.	Morigaon College, Morigaon-782105 (B.A./B.Sc)	√
213.	Mayang Anchalik College, Raja-Mayang-782411 (B.A.)	√
214.	Moirabari College, Moirabari-782126 (B.A.)	√
	NAGAON DISTRICT	
215.	A.D.P. College, Nagaon-782002 (B.A./B.Sc)	√
216.	Alhaz Sunai Bibi Choudhury College, Udali Bazar, Lanka-782446	√
217.	Batadrava S.S.S. College, Nagaon-782122 (B.A.)	√
218.	College of Education, Nagaon-782002 (B.Ed.)	
219.	Dr. B.K.B. College, Puranigudam-782141 (B.A.)	√
220.	Dhing College, Dhing-782123 (B.A./B.Sc)	√
221.	Hojai College, Hojai-782435 (B.A./B.Sc/B.Com)	√

222.	Hatichong College, Hatichong-782142 (B.A.)	√
223.	Haji Anfor Ali College, Doboka-782440 (B.A.)	√
224.	Hojai Girls' College-782435 (B.A.)	√
225.	Juria College, Fakuli Pathar-782124 (B.A.)	√
226.	Jamunamukh College, Jamunamukh-782428 (B.A.)	√
227.	Kaliabor College, Kuwaritol-782137 (B.A./B.Sc/B.Com)	√
228.	Kampur College, Kampur-782426 (B.A.)	√
229.	Khagarijan College, Chotahaibor-782001 (B.A.)	√
230.	Kaliabor College of Education, Kuwaritol-782137 (B.Ed.)	
231.	Krishna Bora B.Ed College, Lanka-782446 (B.Ed)	
232.	Katahguri College, Tuktuki-782123 (B.A.)	√
233.	Lanka Mahavidyalaya, Lanka-782446 (B.A./B.Com)	√
234.	Lumding College, Lumding-782447 (B.A./B.Sc./B.Com)	√
235.	Murazar College-782439 (B.A.)	√
236.	Nowgong College, Nagaon-782001 (B.A./B.Sc/B.Com)	√
237.	Nowgong Law College, Nagaon-782001 (LL.B.)	
238.	Nowgong Girls' College, Nagaon-782002 (B.A.)	√
239.	Nagaon G.N.D.G. Commerce College, Panigaon-782001 (B.Com)	√
240.	Nonoi College, Nonoi-782001 (B.A.)	√
241.	Raha College, Raha-782103 (B.A.)	√
242.	Rupahi College, Rupahi-782125 (B.A.)	√
243.	Shikshan Mahavidyalaya, Nagaon (B.Ed)	
244.	Samaguri College, Samaguri-782140 (B.A.)	√
245.	Udali College, Bamungaon-782440 (B.A.)	√

APPENDIX-V

Name of the Vocational Education Courses found in 36 General Degree Colleges during 2009-2011.

- Tourism & Travel Management and Tourism & Hospitality Studies.
- Functional English
- Laboratory Technician
- Computer Science & Application
- Fashion Designing
- Fashion & Dress Designing
- Fashion, Textile & Interior Designing
- Mobile repairing, Electronics & Computer hardware.
- Computer networking & C++, Computer fundamentals, Tally, Web centric curriculum, C-Dac.
- Beauty therapy & Care
- Soil & Water analysis.
- Conservation ecology
- Biotechnology
- Computer & Information technology
- Garment Technology
- Electronic Instrument Maintenance
- Early childhood Care & Education.
- Computer Software.
- Biomass
- Biofertilizer

- Mass Communication
- Entry in Service
- Taxation practice & procedure
- BBA
- BCA
- Entrepreneurship Development
- Industrial Fish & Fishery products.
- Bioinformatics.
- Forestry & Wild Life Management.
- DOEACC (For girls only)
- Video production & Editing.
- Secretarial Practice & Office Management
- Creative writing & appreciation literature.
- Folk Education.
- PGDCA
- Photography
- Apiculture, Pisciculture & Poultry Farming.
- Cutting, Knitting & Embroidery.
- Baking Confectionery.
- Tea Husbandry.
- Food processing & preservation.
- Sericulture
- Craft & Art.
- Communicative Skill
- Montessori Method.

APPENDIX-VI

College wise student's participation and faculty strength in vocational education courses during 2009-2010 & 2010-2011

College wise, Sex wise and course wise students' participation in various vocational education courses and faculty strength for the session 2009 – 2010 & 2010 – 2011.

Name of the course	Name of the college	Students' participation						Faculty Strength	
		2009-2010			2010-2011			Full Time	Part Time / guest
		Boys	Girls	Total	Boys	Girls	Total		
Tourism & Travel Management and Tourism & Hospitality Studies	Tezpur College	8	9	17	7	9	16	1	1
	Kaliabor college	5	9	14	6	5	11	0	1
	Morigaon college	5	7	12	6	4	10	0	1
	Nowgong college	0	11	11	0	12	12	0	2
	Dhing College	8	10	18	9	12	21	0	2
	Jagiroad college	35	27	62	33	30	63	2	3
	Pragjyotish college	6	7	13	8	4	12	4	0

	Fakiragram college	4	8	12	5	6	11	1	0
	Girls'college, Kokrajhar	0	8	8	0	10	10	2	0
	Chilarai college	21	18	39	15	23	38	3	0
	Sonapur college	1	4	5	2	5	7	1	0
	Bajali college	13	12	25	16	14	30	2	1
	Pachim Guwahati Mahavidyalaya	18	0	18	25	1	26	0	1
	Suren Das college	16	5	21	5	1	6	0	2
	Goalpara college	02	01	03	01	00	01	2	0
	Total	**142**	**136**	**278**	**138**	**136**	**274**		
Functional English	Kaliabor college	12	5	17	9	6	15	1	2
	Dhing college	5	6	11	7	6	13	0	2
	Pandu college	20	10	30	18	13	31	1	2
	Pragjyotish college	2	4	6	3	3	6	1	0

	Bijni college	18	20	38	9	12	21	4	0
	Girls'college, Kokrajhar	0	10	10	0	9	9	3	0
	Khagarijan college	10	20	30	12	18	30	1	2
	N.H. college	30	25	55	5	26	31	2	0
	Biswanath college	17	28	45	15	25	40	2	3
	Total	**114**	**128**	**242**	**78**	**118**	**196**		
Laboratory technician	Darrang College	3	4	07	5	3	08	0	2
	Total	**03**	**04**	**07**	**05**	**03**	**08**		
Computer Science & application	Pandu college	10	14	24	12	11	23	0	2
	A.D.P. college	45	37	82	56	43	99	2	1
	Nowgong Girls college	0	50	50	0	66	66	1	0
	Jagiroad college	9	12	21	11	10	21	4	0
	Total	**64**	**113**	**177**	**79**	**130**	**209**		

Fashion designing	A.D.P. College	0	8	08	0	9	09	1	0
	Total	**00**	**08**	**08**	**00**	**09**	**09**		
Fashion & Dress designing	Dhing college	0	20	20	0	18	18	0	2
	Total	**00**	**20**	**20**	**00**	**18**	**18**		
Fashion, Textile & Interior Designing	Dr. B.K.B. College	2	8	10	0	6	06	0	3
	Total	**02**	**08**	**10**	**00**	**06**	**06**		
Mobile repairing, Electronics & Computer Hardware	Darrang college	4	3	07	5	4	09	0	2
	Total	**04**	**03**	**07**	**05**	**04**	**09**		
Computer (Networking & C++), Computer fundamentals, Tally, Web centric	Dimoria college	10	15	25	12	16	28	2	0
	MNCBalika Mahavidyalaya	0	20	20	0	24	24	2	0
	Arya Vidyapeeth college	25	14	39	21	13	34	2	0
	Total	**35**	**49**	**84**	**33**	**53**	**86**		

curriculam, CDac									
Beauty therapy & Care	Dimoria college	0	9	09	0	7	07	0	1
	MNCBalika Mahavidyalaya	0	70	70	0	60	60	0	2
	Total	**00**	**79**	**79**	**00**	**67**	**67**		
Soil & Water analysis	Nowgong college	10	10	20	12	10	22	0	2
	Total	**10**	**10**	**20**	**12**	**10**	**22**		
Conservation ecology	Darrang college	6	1	07	4	2	06	0	1
	Total	**06**	**01**	**07**	**04**	**02**	**06**		
Biotechnology	Pandu college	8	6	14	9	7	16	0	1
	Darrang college	3	5	08	6	4	10	0	2
	Total	**11**	**11**	**22**	**15**	**11**	**26**		
Computer & Information Technology	Dhing college	8	7	15	9	6	15	1	2
	Pragjyotish college	5	5	10	3	4	7	2	0
	Birjhora Mahavidyalaya	20	5	25	19	6	25	2	1
	Sonapur college	18	22	40	20	24	44	2	0

	Total	**51**	**39**	**90**	**51**	**40**	**91**		
Garment Technology	Dr. B.K.B. college	0	6	06	0	6	06	0	1
	Total	**00**	**06**	**06**	**00**	**06**	**06**		
Electronic Instrument Maintenance	A.D.P. College	15	0	15	20	0	20	1	0
	D.K. college	16	0	16	20	0	20	0	2
	Total	**31**	**00**	**31**	**40**	**00**	**40**		
Early Childhood Care & Education	Pandu college	0	6	06	0	8	08	0	2
	Dispur college	0	15	15	0	10	10	2	2
	Total	**00**	**21**	**21**	**00**	**18**	**18**		
Computer software	Nowgong college	20	15	35	22	18	40	1	0
	Total	**20**	**15**	**35**	**22**	**18**	**40**		
Biomass	Morigaon college	02	00	02	01	00	01	0	1
	Total	**02**	**00**	**02**	**01**	**00**	**01**		
Biofertilizer	Goalpara college	02	03	05	06	08	14	4	1

	Total	**02**	**03**	**05**	**06**	**08**	**14**		
Mass Communication	Bongaigaon college	19	06	25	16	09	25	0	2
	Total	**19**	**06**	**25**	**16**	**09**	**25**		
Entry in Service	Dhudhnoi college	08	12	20	15	06	21	1	2
	Total	**08**	**12**	**20**	**15**	**06**	21		
Taxation practice & procedure	Bongaigaon college	06	03	09	04	02	06	0	3
	Total	**06**	**03**	**09**	**04**	**02**	**06**		
BBA	Bongaigaon college	10	02	12	10	07	17	2	3
	Dispur college	15	10	25	20	10	30	5	2
	Total	**25**	**12**	**37**	**30**	**17**	**47**		
BCA	Dispur college	15	10	25	18	07	25	3	2
	Total	**15**	**10**	**25**	**18**	**07**	**25**		
Entrepreneurship Development	Dispur college	10	04	14	10	06	16	3	2
	Total	**10**	**04**	**14**	**10**	**06**	**16**		

Industrial Fish & Fishery products	Pragjyotish college	03	00	03	02	00	02	2	2
	THB college	12	08	20	15	7	22	2	2
	Dhing college	10	04	14	09	05	14	0	2
	Total	**25**	**12**	**37**	**26**	**12**	**38**		
Bioinformatics	AryaVidyapith college	0	2	2	6	11	17	3	1
	Total	**0**	**2**	**2**	**6**	**11**	**17**		
Forestry & Wild life Management	Ratnapith college	10	5	15	10	2	12	1	0
	Total	**10**	**5**	**15**	**10**	**2**	**12**		
DOEACC (for girls only)	Bongaigaon college	0	40	40	0	50	50	2	0
	Total	**0**	**40**	**40**	**0**	**50**	**50**		
Video production & Editing	Cotton college	10	3	13	11	4	15	2	2
	Total	**10**	**3**	**13**	**11**	**4**	**15**		
Secretarial practice & office Management	Bajali college	15	9	24	16	14	30	0	4
	Total	**15**	**9**	**24**	**16**	**14**	**30**		
Creative	Ratnapith	18	3	21	1	3	4	2	0

writing & appreciation literature	college								
	Total	**18**	**3**	**21**	**1**	**3**	**4**		
Folk Education	D.K college	12	28	40	25	20	45	0	3
	Total	**12**	**28**	**40**	**25**	**20**	**45**		
PGDCA	Suren Das college	5	1	6	4	2	6	0	1
	Total	**5**	**1**	**6**	**4**	**2**	**6**		
Photography	Suren Das college	12	8	20	16	3	19	0	1
	Total	**12**	**8**	**20**	**16**	**3**	**19**		
Apiculture, Pisciculture & poultry farming	D.K college	10	0	10	12	0	12	2	2
	Total	**10**	**0**	**10**	**12**	**0**	**12**		
Cutting, Knitting & Embroidery	Suren Das college	0	25	25	0	30	30	1	0
	Total	**0**	**25**	**25**	**0**	**30**	**30**		
Baking & Confectionery	K.R.B Girls' college	0	20	20	0	24	24	3	1
	Total	**0**	**20**	**20**	**0**	**24**	**24**		
Tea Husbandry	Biswanath college	11	0	11	10	0	10	1	2

	Total	**11**	**0**	**11**	**10**	**0**	**10**		
Food Processing & Preservation	THB college	0	8	8	0	18	18	2	2
	Total	**0**	**8**	**8**	**0**	**18**	**18**		
Sericulture	THB college	5	10	15	6	10	16	2	3
	D.K college	5	5	10	5	10	15	3	2
	Total	**10**	**15**	**25**	**11**	**20**	**31**		
Craft & Art	MNCBalika Mahavidyalaya	0	50	50	0	45	45	0	2
	Total	**0**	**50**	**50**	**0**	**45**	**45**		
Communicative Skill	MNCBalika Mahavidyalaya	0	40	40	0	28	28	0	1
	Total	**0**	**40**	**40**	**0**	**28**	**28**		
Montessori Method	MNC Balika Mahavidyalaya	0	36	36	0	31	31	0	1
	Total	**0**	**36**	**36**	**0**	**31**	**31**		