Chapter II

Review of Related Literature
REVIEW OF THE RELATED LITERATURE

2.1 Conceptualisation of Vocational Education and Vocationalisation of Education

The terms vocational education and vocationalisation of general education have to be understood from the review of literature advisable in this area since its origin. Although these terms are used synonymously, there is a clear distinction between them.

2.1.1 Vocational Education

The encyclopedia of Britannica (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, technical secondary schools, or in the job training programmes, or more informally picking up the necessary skills on the job without actual supervision.'

Objectives of Vocational Education

The following are the objectives of vocational education:

→ To learn while earning and dignity of human labour
→ To learn technical skills of economic relevance
→ To learn through socially relevant activities
→ To get higher education with opportunities for employment especially for self-employment
→ To lay emphasis on the creation of new facilities in technical and vocational institutes especially in rural areas
The main purpose of education in any society is to provide such experiences to the child as it would enable him to live individually satisfying and socially useful life. Education is an individual human need and a human right. It is the State’s need and not its gift. And yet a sizeable part of the educated are unemployed and only 352 million people are literate out of 844 million of total population of India as per 1991 census. The mad rush for the often unproductive higher education has been due to a myriad identifiable factors which may include lack of employment opportunities after the school education on one hand and the lack of employability of the product on the other obscuring and defying the cause and effect analysis (Mishra 1984). We have been demanding that the educational programme must be relevant to the needs of society. This would require that the community of teachers in every institution takes interest and assesses the manpower needs periodically both in terms of the region and the country and frame the curriculum accordingly. Various committees and commissions on Indian education have deliberated over the concepts and modalities for implementation of vocational education for many years from Woods despatch (1854) to National Policy on Education (1986). Similar view was also expressed by Prof. Yashpal that vocational training should be made a part and parcel of the entire educational processing from school to college and university stage and should be intrinsically integrated with the educational system of the country as such. The term Vocational Education connotes systematic training or technical knowledge in a vocation given to the students intending to go for gainful employment in a recognised occupation or for self-employment. It also includes guidance and counselling related to the occupations.
The introduction of vocational education marks a deliberate and drastic departure from the conventional education under which literacy and work are kept apart from each other. Educational thinkers right from Rousseau have stressed the importance of work in education urging that all lessons should be given in action rather than in words. Similarly, the Gandhian principles make work, particularly manual labour, the focal point of educational activity. The world of education should find direct relevance and linkage with the needs and requirements of the world of work. There should be effective and continuing interaction between education and productive work. Education with the vocational aim will prepare each individual for an occupation which in the words of John Dewey will balance the distinctive capacity of an individual with his social service. Karl Marx also expressed the idea that vocational education leads to full development and maturity. Jawaharlal Nehru opined that far-reaching changes in the existing educational system are absolutely essential for achieving the national aims and social objective of free India and in particular to train the right type of personnel for the speedy execution of the development plans. He further observed we want a society in which every body is a producer in some way or the other. Since every one is a consumer he must be a producer also. And if he is to be an effective producer he must know his job well. We want first rate men at the top and at the same time we want everyone to be good at the particular job he does. If that is our objective then our whole training must be aimed at that. It should be ideological training, intellectual training as well as physical training (Kailash Chandra Das Vocational Education and Man power Development).
Right type of vocational education will redress the problem of occupational maladjustments. It will generate a spirit of initiative and enterprise, self-reliance and self-confidence through earning capacity and banish a feeling of helplessness. It will instil dignity of labour in our land as is the case in other advanced countries. Education cannot create employment; it can only create persons fit for employment. Whereas vocational education renders it feasible for an individual to get a job or to be self-employed. Vocational education, therefore, seems to be top priority of the new National Education Policy. Worried at the growing unemployment in the country due to what has been called a dysfunctional relationship between education and work linkages, the National Education Policy seeks to re-establish and strengthen this link.

In this context, imparting vocational skills to college students in order to increase their employability assumes importance. It is apparent that vocationalisation of education is not merely for the least intelligent or mediocre students but for each and every individual of society right from the primary to the university stage to make him self-employable and fit for the life he has to lead.

2.1.2 Definitions of Vocational Education

The acceptance of the idea that purpose is the controlling factor in defining vocational education has resulted in a variety of definitions of vocational education illustrating again the problem of interpretation. These definitions, some of which are shown below, illustrate varying interpretations and limitations of purpose in defining vocational education.
The Federal Board for Vocational Education defined vocational education in 1917 as follows:

To the extent that it is subsidized by the Federal Government under the Smith Hughes Act vocational training must be for the common wage earning employments. It may be given to boys and girls who having selected a vocation desire preparation for entering it to boys and girls who having already taken up a wage earning employment seek greater efficiency in that employment or to wage earners established in their trade or occupation who wish to increase in their efficiency and wage earning capacity to advance to the positions of responsibility.

This definition recognizes the purpose of the learner as a factor in the vocational education and suggests that vocational education has responsibility for both pre employment and in service education.

The President's Advisory committee on Education in its report published in 1988 defined vocational education as follows: 'Vocational education is a very inclusive term and viewed broadly may cover all those experiences whereby an individual learns to carry on successfully any useful occupation. These experiences may be organized and institutionalized or unorganized and more or less haphazard. In a narrower sense vocational education may be defined as a series of controlled and organized experiences arranged to prepare a person for socially useful employment. The report stated that all education is vocational as far it prepares an individual for satisfactory living. In this point of view emphasis was placed less on the idea of selection of an occupation as a factor in vocational education. Then too the definition included both planned and vicarious learning. It differed in this respect from the definition suggested by others in which vocational education was limited to planned experience rather than haphazard learning.'
The Southern States work conference composed of vocational and general educators which met at Daytona Beach Florida in the summers of 1944 and 1945 for the study of problems of vocational education formulated the following definition for vocational education. 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 understanding so that the individual may serve happily and efficiently in carrying on the activities in the vocational pursuits of his choice. The conference in its discussion on the implications of this definition suggested that the citizens of the nation face with problems of social living, social relationships, and vocations. The task of the school was that of helping students whether young or old in school or out of school to meet these problems. The conference also suggested that the problems involved in choosing an occupation as well as those involved in preparing for and progressing in it were a part of vocational education. The conference also agreed that public education should assume responsibility for providing adequate programmes of vocational education together with programmes of vocational guidance to assist the individual to make a wise choice of an occupation.

The committee on Research and Publications of the American Vocational association stated in 1954 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 programme and contributes toward the development of good citizens by developing their
physical social civil cultural and economic competencies. This statement is substantially the same as the one included in the 1958 revision of the policy bulletin on administration of vocational education published by the Vocational Division U.S. Office of Education. This definition recognizes the purpose involves various types of outcomes and includes both pre-employment and in-service programmes. It suggests that the vocational education is a part of the total education programme contributing to the development of good citizenship as well as to proficient workmanship.

A somewhat different concept used to identify the Federally aided programme of vocational education on less than baccalaureate degree level is included in the Vocational Education Act of 1963 (Public Law 88-210). It states that vocational education means:

Vocational or technical training or retraining which is given in schools or classes (including field or laboratory work incidental thereto) under public supervision and control or under contract with a state board or local educational agency and is conducted as a part of a programme designed to fit individuals for gainful employment as semi-skilled or skilled workers or technicians in recognized occupations (including any programme designed to fit individuals for gainful employment in business and office occupations and any programme designed to fit individuals for gainful employment which may be assisted by Federal funds under the vocational education Act of 1946 and supplementary vocational education acts but excluding any programme to fit individuals for employment in occupations which the commissioner determines and specifies in regulations to be generally considered professional or as requiring a baccalaureate or higher degree.
Thus there are several differing concepts and meanings of vocational education or training. Most of these have arisen from traditional practices and the meanings of terms used and their implications. An examination of these reveals the basic differences between certain practices and relationships in vocational or occupational education which are fundamental in nature and in programmes.

One such concept is that 'Vocational Education is the education or training of workers'. Its origin may be traced to the early apprenticeship training practice. This concept implies that any kind of education or training in which a worker participates is vocational education. It also suggests that humans have dissimilar abilities and the persons having either the capacity or the desire to study the traditional curriculum be prevailed upon to opt for vocational trades more adapted to their tastes and abilities. Implicit in the concept is the meaning that working class children be trained for factory work simply because that is their destiny. This kind of thinking does not fit in with the principle of equal educational opportunity.

Another concept is that 'Vocational Education is the education for manual work'. This concept centres on the ideas of ability to work with hands rather than mind with a curriculum of certain manual activities like leather work, wood work, metal work, drawing work.

The knowledge and skills learned from such education or training just underline the mental activities relevant to the curriculum but without relevance to specific occupational competence. This concept has resulted in the present-day practice of placing drop outs, physically handicapped and socially disadvantaged young people in vocational courses without considering learners interest and ability. A sizeable proportion of vocational institutions (other than ITIs) in our country may perhaps be described as manual training institutions.
Yet another concept is that *Vocational education is education in certain specified subjects which may be of vocational or technical nature generally confined to secondary stage of education.* This concept implies that a specified part of the curriculum is vocational or technical; the remaining part falls under general or liberal education coverage. Here vocational education is not designed to take the place of general education but to supplement it. The essential merit of the idea is that the total education imparted has both cultural and utility values fitting an individual for progressing in his chosen field of activity with an in-built opportunity for vertical mobility. Technical high school type of education in our country may be cited as an example.

One more concept is that *Vocational education is that education which is craft oriented.* The major objective of craft oriented education is to provide special instruction in a single craft or trade which enables the learners eke out their livelihood. This type of education or training does not have any academic or cultural aspects. Educators therefore feel that any craft or any trade centred system of education is a divisioning process segregating vocational education from the general education mainstream. The learners who fail to profit from the traditional academic learning generally opt for this sort of industrial training as is given in our Industrial Training Institutions. Although the institutions are equipped to offer practical preparation for most of the recognized trades, the courses are not in accordance with the objectives of mass system of common or comprehensive schools as in vogue in the UK, the USA and Japan.
Finally there is the concept that "Vocational education is education for productive purposes or socially useful productive work." When the object is a product or a service for consumer use the work involved is termed as productive work or socially useful productive work. Implicit in this modern concept is the fact that the learners by learning new and improved ways of working through education or training can increase his vocational efficiency. Gainful pursuits regular occupations or vocations are becoming increasingly important in our industrialized society. Vocational education for productive work basically provides learning experience of an avocational nature training learners to satisfy the requirements of a hierarchical work force. This concept is in tune with the present day movement of education for individual needs' education to prepare persons who would contribute to industrial, agricultural and commercial efficiency. This concept also leads to the theme that all education when considered in relation to the great masses of the people of a country must be measured finally by the single test of usefulness and utility. Education imparted in this manner should aim at the development of proficient workers as well as good citizens.

2.1.3 General Principles of Vocational Education

Principles of vocational education serve a useful purpose in the delineation of policies, processes, and procedures underlying vocational education. These principles have been derived from past experiences and judgements deliberation and general agreements among individuals and bodies concerned with vocational education that have proved to be satisfactory and effective.
Dr Charles, a leader in vocational education in the USA, was the first director of the Federal board for Vocational education in USA. He has been acknowledged as a great authority on vocational education. Truly the principles of Vocational Education enunciated by him are given below have stood the test of time and they are as valid now as ever before.

→ Vocational education will be efficient in proportion to the environment in which the learners are trained in a replica of the environment in which they must subsequently work.

→ Effective vocational education can only be given where the training jobs are carried out in the same way with the same operations, the same tools and the same machines as in the occupation itself.

→ Vocational education will be effective in proportion as it trains the individual directly and specifically in the thinking habits and the manipulative habits required in the occupation itself.

→ Vocational education will be effective in proportion as it enables each individual to capitalise his interest, attitude and intrinsic interest, aptitude and intrinsic intelligence to the highest possible degree.

→ Effective vocational education for any profession, calling, trade, occupation or job can only be given to the selective group of individuals who need it and can profit by it.

→ Vocational education will be effective in proportion as the specific training experiences for forming right habits of doing and thinking are repeated to the point that these habits become fixed to the degree necessary for gainful employment.

→ Vocational education will be effective in proportion as the instructor has had successful experience in the application of knowledge and skills to the operations and processes he undertakes to teach.
For every occupation there is a minimum of productive ability which an individual must possess in order to secure or retain employment in that occupation. If vocational education is not carried to that point with that individual it is neither personally nor socially effective.

Vocational education must recognize the conditions as they are and must train individuals to meet the demands of the labour market even though it may be true that more efficient ways of conducting the occupation may be known and that better working conditions are rightly desirable.

For every occupation there is a body of content which is peculiar to that occupation and which practically has no functioning value in any other occupation.

Vocational education will render efficient social service in proportion as it meets specific training needs of any group at the time they need it and in such a way that they can most effectively profit by the instruction.

Vocational education will be socially efficient in production as in its personal relations with learners if it takes into consideration the particular characteristics of any particular group which it serves.

The administration of vocational education will be efficient in proportion as it is elastic and fluid rather than rigid and standardized.

While every reasonable effort should be made to reduce per capita cost there is a minimum below which effective vocational education cannot be imparted and if the course does not permit this minimum of per capital cost vocational education cannot be attempted.

Vocational education involving the institution the home and the industry or business frequently evolves processes and procedures different from those of general education. This fact makes it necessary to understand the importance of the principles presented above.
21 Advantages or Needs for Vocationalisation of Education

Advantages or needs for Vocationalisation of Education

→ It prepares an individual for life for better economic and civic amenities

→ It makes education practical and useful. It can fulfil the need of life in a better way.

→ It promotes economic growth of the country and augments national productivity (GNP) agriculturally as well as industrially.

→ It helps in the best and full utilisation of the human and natural resources of the country.

→ It enhances the competency or efficiency of an individual in a particular vocation.

→ It facilitates the supply of more skilled manpower or technical personnel at the grass root level which in turn benefits the whole society with an enlarged supply of technical leadership of middle grade.

→ It ensures just sharing of the benefits of economic development and social justice.

→ It surely improves the general education attainments of the students.

→ It is helpful to earn a decent livelihood.

→ It is also psychologically sound because it is based on the principle of diversification of human energy and talent. It provides ample scope of the students to select the type of education suited to them on the basis of their interests, abilities, and aptitude.

→ It opens more avenues or channels for self-employment.

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2.2 Historical Development of Vocationalisation of Education

The following is an account of the efforts that have been made made to bring about closer relationship between education and work (Vocationalisation) since 1854

**Wood's Despatch 1854**

It was in 1854 that the attention of the government was drawn towards practical education by the Wood's despatch. It said our attention should be now directed to consideration if possible still more important and which has hitherto we are bound to admit too much neglected namely how useful the practical knowledge suits every situation of life may be best conveyed to the great mass of people who are utterly incapable of obtaining any education worthy of the name by their unaided efforts. But evidently this report did not make any noticeable impact in fact until 1882

**Hunter Commission 1882**

The Hunter Commission was set up in 1882 to examine the problems of education as a whole especially of technical and vocational education. It recommended that at the high school stage there ought to be two distinctive streams first for preparing the students for entrance examinations to the University course and the second for practical occupation. The practical subjects suggested by the commission were Accounts, Elements of Natural and Physical science and their application in Agriculture. These recommendations however were not implemented.
The Calcutta University Commission (Sadlar Commission) of 1917

The Sadlar Commission of 1917 made recommendations for the establishment of intermediate colleges with arts, science, medicine and engineering as the subjects of study.

Hartog Committee (1929)

The Hartog committee recommended that

1. Industrial and commercial subjects should be introduced at the secondary stage of education.
2. There should be provision for professional education at the college level.
3. Instead of being attracted to clerical and sedentary pursuits, the students should take up some practical occupations.

Sapru Committee (1934)

The Sapru committee recommended that vocational courses in secondary schools should be provided side by side with general education course for solving the problem of unemployment among the educated youth.

Abbot Wood Commission (1936-37)

The Abbot and Wood Commission suggested the following recommendations:

1. The vocational education should not violate or overlook the requirements of various vocations.
2. The vocational education in any province should be based on the consideration of the various industries and trades in the province.
3. Vocational education should not be attached lesser importance than literary education nor should its standard deteriorate.
General and vocational education should be treated as separate from each other but they should be regarded as the alpha and omega of education.

The ideals of general and vocational education are difficult. So provision should not be made for them in the same school.

Artisans engaged in small cottage industries should be given the necessary training.

In every province an advisory council for vocational education should be established. Its main function should be to bring about a closer contact between education and industry and trade.

For vocational education there should be junior vocational school. The students who have passed class eight should be admitted in these schools and the period of training should be 3 years. The junior schools should be given the status of the secondary schools. In the senior schools boys should be regarded on par with intermediate colleges.

After the completion of the vocational education diplomas should be awarded containing all the details of work and training.

Vocational schools should be established as far as possible at industrial centres.

Part time schools should be opened for persons in various professions. The schools should be held in the day and workmen should be given holiday for 2½ days every week in these schools.

The Government of India should establish vocational training colleges and technical schools at selected places.
It was Mahatma Gandhi, The Father of our nation who for the first time insisted that manual and productive work should find a place in the school curriculum and education should centre around it. The Wardha National Education Conference in October 1937 endorsed the proposal made by Mahatma Gandhi that the process of education throughout this period (seven years) should centre around same form of manual and productive work and that all other abilities to be developed or training to be given should as far as possible be integrally related to the handicraft chosen with due regard to the environment of the child.

The education ideas of Mahatma Gandhi were given practical shape by the Zakir Hussain Committee and consequently basic education came to be accepted as the national pattern of education for the elementary stage in 1938.

Since then many issues pertaining to the socially usefully productive work have remained controversial e.g. its productive aspects, its relation to other areas of curriculum, the position of textbooks. Clarifications were issued by the Ministry of Education Government of India in the year 1956. As the Basic Education was being implemented, many practical difficulties came to the surface and efforts were made to find out solutions to remove them.

Sargent Report (1944)

Sir John Sargent, an Education Advisor to Govt. of India recommended that

1 Provision should be made for a variety of courses at the middle school stage.
There should be two types of High Schools

a Academic and

b Technical

The objective of both types of schools should be to impart good all round education. While preserving the essential cultural character they should prepare the students for entering industrial and commercial occupation as well for pursuing studies at the university level.

Radha Krishnan Commission (1948)

The Radha Krishnan Commission (1948) on Higher Education felt that a large number of Intermediate Colleges should be opened to divert students to Vocations at the end of the Class X or XII. The aim of these colleges would be to meet a variety of needs by giving a vocational basis to their courses and retaining at the same time their value in a system of General Education as a preparatory for the University course.

Secondary Education Commission (1952-53)

The following are the major programmes suggested by the Secondary Education commission 1952-53

1 Diversification of Courses

The Courses at Secondary stage of education should be diversified to meet different interests, aptitudes and abilities of the students.
There should be provision of comprehensive courses including general and vocational subjects. It means that general education and vocational education should not be like watertight compartments.

For the all round education of students, special practical subjects should be introduced side by side with certain common core subjects of general value and utility.

2 Establishement of Multi Purpose School

For the provision of diverse-courses, Multi purpose Schools should be established in large numbers. These schools will help in:

* removing individual differences
* facilitating vocational education guidance and
* solving the problem of wrongly classified students

3 Unilateral Schools

The Commission recommended that some unilateral schools should also be established for intensive training in particular type of vocational courses in accordance with the needs of the community and locality.

4 Provision of Agricultural Education

In view of the importance of agriculture in our national economy, the Commission stressed on the need of providing agricultural education in rural areas. Agricultural education should not be merely theoretical but application oriented allied subjects like Horticulture and Animal Husbandry may be closely integrated with Agricultural Education. The Commission further recommended that agricultural schools should be made a part of rural multi-purpose schools.
5 Provision of Technical Education

Regarding the provision of technical education the commission has made the following recommendations:

1 Opening of Technical schools  Technical Schools should be opened in large number either separately or as part of Multi purpose schools.

11 Location of Technical Schools  As far as possible Technical Schools should be located in close proximity to related industries and close co-operation of those industries should be sought in the functioning of technical schools.

111 Legislation for Practical Training  There should be suitable law making it obligatory for the industries to provide practical training.

IV Close Association  There should be close liaison between education and commerce and industry. This is essential for planning the technological education in the right direction.

V Industrial Education Cess  Industrial Education Cess should be levied on the industries and the proceeds of the Cess should be utilized for the advancement of the technological education.

VI Central Technical Institutes  There should be Central Technical Institutes in big cities to cater to the needs of several local technical schools.

VII All India Council for Technical Education  All India Council for Technical Education and Bodies functioning under it should be utilized for evolving suitable pattern of technical education at the secondary stage.
Kothari Commission (1964 66)

The chief recommendations of the Commission regarding vocational education are as under

1 Lower Secondary Stage

The Commission stressed that the vocational education should be given an important place even at the lower secondary stage. For this purpose it recommended the following measures

1 Provision of Terminal Courses There should be provision of terminal course in Junior Technical Schools and Technical High Schools for preparing the Students to work in industry. The length of these courses should vary from course to course and emphasis should be laid more on practical work than on theory

11 Provision of Education for Rural Students A large number of rural boys may like to join their family traditional profession. They should be provided with appropriate education for the development of their professional efficiency as well as general education

111 Reducing the Age of Admission In the Industrial Training Institutes (ITI) there is a provision of certain courses for which minimum qualification is primary education and the age of admission is 15 years. To enable a large number of students who have completed the primary education and to have the benefit of such courses the age of admission should be lowered to 14 years
iv **Provision of Part-Time Courses** Fairly a large number of students drop-out after class VII or VIII. Some of them discontinue their studies in the middle of their courses due to some unavoidable circumstances. Some intend to adopt their family or traditional profession while others want to set up their own small scale industry. For these students, there should be a provision of a wide range of part-time courses. These courses should also impart side by side, some general education.

v **Provision of Home Science for Girls** Some girls have their education at the lower secondary level. Such girls should be provided with courses in Home Science combined with general education.

2 **Higher Secondary Stage**

Regarding the Vocationalisation of Education at the Higher Secondary stage, the Commission remarked:

One of the major reforms we envisage is to vocationalise higher education and to raise the enrolment in the vocational courses at this stage to 50 per cent of the total enrolment.

To achieve this aim, the Commission recommended the following measures:

1 **Expansion of Courses in Industrial Training Institutes (ITI)**

There is provision of some courses in Industrial Training Institutes (ITI) for which minimum qualification is Matric. These courses should be expanded.
Provision of Short Condensed Courses

Provision should be made for short condensed courses in Agricultural and Engineering polytechnics. It will help in upgrading the skill of those who have taken up some employment and will also help in retraining and reeducation of those people who are already qualified.

Provision of Vocational Courses in Industry

There should be provision of part-time vocational courses in industry and in polytechnics on either a day release or sandwich or correspondence basis.

Provision of Other Courses

In addition to the courses mentioned above there should be provision of a wide range of other courses in commerce administration, small scale industries, health, etc. The duration of the courses should vary according to the level. These courses may lead to a Certificate or diploma. There should also be provision for part-time and correspondence courses.

3 Provision for Part time Vocational Education

The Commission recommended the provision of part-time vocational education both at the lower secondary and the higher secondary stages.

At Lower Secondary Stage

Part-time vocational courses should be organised for those students who are unable to continue their studies on full-time basis after the completion of primary education and who have adopted some career and want to improve their professional competence.
The Commission emphasised the need for part time courses in agriculture to those students who have adopted farming as a vocation after completion of primary education.

The part time courses should be run as far as possible in the buildings of full time schools. And if possible the teachers should also be drawn from the same source with additional payment. The success of these courses depends upon the flexibility of organisation and the extent to which they meet the demands of the students.

Similarly to those girls who leave their studies after the completion of primary education there should be provision of part time courses in home science and household industries like tailoring, arts and crafts, dairying, poultry, etc. Such courses will prepare them for their earning in their future life as housewife and mother.

11 At Higher Secondary Stage For the organisation of the part time courses at the higher secondary stage the Commission made the following recommendations:

a  Part time Courses on the Pattern of Full time Courses These courses are intended for those students who want to pass Higher Secondary Examination.

b  Part time Course in Agriculture This course will be open to those who have taken up agriculture as a vocation.

c  Part time Course in Industry These courses will be for those who have joined industry.
d Special Course for Girls These courses should be organised on the pattern of courses at the Lower Secondary Stage.

e Special Courses for Self Employment There should be provision of special part time course for those who want to be self employed.

4 Administration of Vocational Education

The success of various Vocational Courses on full time basis and part time basis depends on its efficient administration. In this respect the Commission made the following recommendations:

1 Creation of Special Sections Special sections should be created with in the State Department of Education and these should be assigned with the duty and responsibility of organising Vocational education.

2 Close Co operation of Industry In organizing the programmes of vocational education, close co operation of Vocational guidance centers and employees in industry should be sought.

3 Special Grants by the Center Keeping in view the importance of Vocational Education, the Commission further recommended that Central Government should provide special grants to the State Governments. Citing the example of U.S.A., the Commission said that it has the federal grants for Vocationalisation of Secondary Education in U.S.A. and this experience has a valuable lesson for India.
The Iswarbhai Patel Committee (1977)

The Iswarbhai Patel Committee (1977) which reviewed the NCDRT's document came forward with concept of socially useful productive work as a central component of the ten year school curriculum. It pointed out that work experience which was intended to be an integral feature of the curriculum at all stages did not find a proper place in the teaching-learning process that followed the introduction of the new pattern. It defined Socially Useful Productive work as Purposive and meaningful manual work resulting in either goods or services which are useful to the community.

Adiseshiah Report or Plus 2 National Review Committee (1978)

Major recommendations of the Report may be listed as under

Work Based Learning  Learning must be based on work either through what the Ishwar Bhai Patel Committee call socially useful productive work or through the vocationalised courses.

Agriculture Oriented Vocational Courses  Vocational courses should be in agricultural and related rural occupational areas and in managerial commercial, health and para medical vocations but not in the manufacturing and engineering occupations.

Flexible Streaming  There should be no rigid streaming of courses into the General Education and Vocationalised Educational Spectrums. Each school should be allowed to offer such General Education and Vocationalised Courses in accordance to the facilities available and the demand in the region.

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Counselling and Placement  As vocationalisation is extended counselling and placement officers be appointed in clusters of 3 or 4 schools particularly in rural areas to start with.

Teachers for Vocational Courses  At the start there should not be insistence on post graduate qualification in respect to teachers of vocational courses. What is needed is means of developing the required skills and competencies in particular field of vocations and for this services of persons who have had actual experience of on the job may be fruitfully utilised to teach vocational courses. Part time teachers may also be appointed wherever necessary.

Vocational Survey  With regard to the offering of vocationalised courses in rural or urban schools a vocational survey of the area metropolitan block taluk district or State be undertaken. Such surveys may be conducted even in areas where the vocational courses have been started.

Location of Schools in the Rural Sector  In the location of schools it is recommended that the rural sector be given priority. Since little or no vocationalised education facilities are readily available for rural students it is recommended that all the new schools should be constructed in the rural areas and should be adequately equipped.

Use of Available Facilities  To economise on the financial investment on infrastructural facilities it is recommended that the spare capacity in all these schools be used. The enrolment be increased through running double shifts wherever it is feasible and if it further demands for technical skill and competencies introduction of new colleges in the neighbourhood and the existing facilities may also be strengthened.

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Apprenticeship Facilities

Apprenticeship facilities should be extended to all the students who complete education in vocational streams if they desire to get benefited from such training.

Recruitment Policy

The recruitment policy of the government as well as public sector organizations should be revised and insistence on the university degree as an essential qualification for employment should be given up. Vocationally qualified persons should be preferred to graduates and be entitled to the pay scales on par with the graduates as long as the jobs performed are the same. Such persons should also be given promotional opportunities based on departmental tests or improvement of qualifications through correspondence or evening courses or block time training.

Organisation of National Council of Vocational Education

One of the most important pre requisites for the successful implementation of the vocational spectrum of plus 2 stage for purposes of employment and recognition is coordination among all agencies and departments of government. Such coordination will also economise our scarce financial resources by presenting replication of efforts in various departments offering vocational education and making a well planned effort possible to achieve the national goals more effectively and cheaply. A National Council of Vocational education should be set up and all the agencies such as the Indian Council of Agricultural Research, All India Council for Technical Education, the Nursing Council, the Dental Council, the Pharmacy council and National Council for Training in Vocational trades should be members of the apex body.
State Council for Vocational Education At the State level State Council for Vocational Education be created to perform similar functions under the general guidance of the National Council of Vocational Education.

Local Support Vocationalisation of education requires constant support from local community and other agencies like Panchayat unions Agricultural and Rural co-operatives the Small Scale Industries Corporation Khadi and Village Industry Commission local branches of Nationalised and other banks Financial corporations Krishi Vigyan Kendras and various voluntary organizations. They should help in identification of vocation and in training of pupils and teachers of vocational courses and also in training for entrepreneurship and for provision of loans and credit facilities and marketing of products and services.

Curriculum of Higher Secondary Education

The Review Committee suggested two broad learning components at the Higher Secondary stage. These have been termed as

1. The General Education Spectrum and
2. The Vocational Spectrum

The General Education Spectrum According to the Committee the General Education spectrum of the Higher Secondary School is for the general information of the person and personality through learning centered around languages socially useful productive work and a combination of the starting phases of natural social or human science disciplines. Its aim is
essentially to prepare the students for university education in arts or sciences or for professional studies. This is the bridge stage of the plus 2 stage. This is also the phase of the educational system in which there is a built-in continuity with the past, the main innovation being learning acquired from socially useful productive work.

The Course Pattern of the General Education Spectrum

The committee recommended the following pattern:

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Course</th>
<th>Time allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Language(s)</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>Socially useful productive work</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>Elective (three)</td>
<td>70%</td>
</tr>
</tbody>
</table>

It recognised that this general framework may be applied with a certain amount of flexibility, allowing individual states and Union Territories and even individual schools to adopt the courses and the time allocation to local conditions and pedagogic perceptions.

The Vocationalised Spectrum. The Committee observes that the Vocationalised Spectrum of the higher secondary schools is learning of a skill or a range of skills through study of technologies related sciences and farm or other practical work. This spectrum embraces in the UNESCO language those aspects of the educational process involving in addition to general education the study of technologies and related sciences and acquisition of practical skills aptitudes understanding and knowledge relating to
occupations in the various sectors of economic and social life. Such an education would be an integral part of general education and a means of preparing for an occupational field and as an aspect of continuing education. This spectrum refers to the terminal character of formal schooling that it represents 50 per cent of its entrants.

Since the content and scope of vocationalisation is expected to be in conformity with national goals and the specific needs of the local community at every given point of time, the vocationalisation of higher secondary education recommended for the next five years to aim at increasing the employment potential of the people through education for self-employment with emphasis on agricultural land related occupations including small cottage and agro industries and through preparation for specific competencies in different vocations.

The Vocationalised Course Pattern

The committee recommended the following pattern for the Vocationalised Spectrum

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Course</th>
<th>Time allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Language(s)</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>General foundation course</td>
<td>15%</td>
</tr>
<tr>
<td>3</td>
<td>Elective vocational subjects</td>
<td>70%</td>
</tr>
</tbody>
</table>
General Foundation Course

The objectives of the course are to enable the student to

1. Become aware of the need for rural development and self employment
2. Understand the place of agriculture in the national economy
3. Develop skill and managerial abilities to run small scale and cottage industries
4. Gain insight into the problems of unemployment, underemployment and economic backwardness of India

Two Parts of the General Foundation Course

The course is meant to be taught for 4 to 5 hours per week for a period of two years

Part A of the course is common to all vocations Part B will have optionals and the unit related to the particular vocation may be chosen

Part A comes under five heads (1) Gandhian concept of education (2) Agriculture in the national economy (3) Rural development (4) problems of urban slums and (5) Health hygiene and sanitation

Part B Any one of the 9 sections to be chosen (1) Small scale and cottage industries (2) Entrepreneurship (3) On operation and credit facilities (4) Marketing (5) Sales promotion (6) Unemployment, underemployment and man power utilization in India (7) Human relations (8) General exposure to world trends and changes and (9) Environmental protection and development
Elective Vocational subjects

These are to be selected from among the following groups

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Courses</th>
<th>No of Vocations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agricultural and related vocations</td>
<td>(15 in all)</td>
</tr>
<tr>
<td>2</td>
<td>Business and office management</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Para medical</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Educational service</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Journalism</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Local body and other services</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Home science related vocations</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Other general services</td>
<td>7</td>
</tr>
</tbody>
</table>


The national working groups on vocationalisation of education 1985 appointed by the Ministry of Education Govt of India New Delhi considered in-depth the concept and operation of work experience/socially useful productive work its implementation by various states and underscored its conceptual aspects as applicable to primary middle and lower secondary stages. It suggested certain improvements to be incorporated in the educational programme in future.
National Policy of Education (1986) Concerning Vocational Education

The details of provisions regarding Vocationalisation of Education in the National policy (1986) are here under:

1 **A Distinct Stream** A distinct stream of vocational education will be provided to prepare the students for identified occupations spanning several years of activity.

2 **Flexibility** The vocational courses will ordinarily be provided after the secondary stage but keeping the scheme flexible. These courses may be made available after class VIII.

3 **Health related vocational courses** Health related vocational courses will be introduced for effective health planning and health service management. Health education will start right from the primary stage and will ensure the commitment of the individuals to the family and community health. This will further lead to health related course at +2 stage of Higher Secondary Education.

4 **Other vocational courses** Vocational courses based on Agriculture, Marketing, Social Service etc. will also be introduced at the higher secondary stage of education.

5 **Emphasis on self employment.** The emphasis in vocational education will be on the development of attitudes, knowledge and skills for entrepreneurship and self employment.

6 **Provision of Bridge Course** There will be provision of Bridge Courses for professional growth, career improvement and later entry into courses of general, technical and professional education.
7 Provision of Non formal Vocational Education

There will be provision of Non formal vocational education for

1. Neo literates
2. School drop outs
3. Those who have completed primary education
4. Those who are engaged in some work and
5. Those who are unemployed or employed on part time basis

Non formal vocational education will be flexible and need based

8 Provision of Tertiary Level Courses

There will be provision of Tertiary Level Courses for those who have academic stream and require vocational education

9 Dual responsibility

The establishment of vocational course or vocational institution will be the responsibility of the Government as well as of employers in private and public sectors

10 Vocational Education for the Deprived Sections of the Society

Special steps will be taken by the government to cater to the needs of rural and tribal students and the deprived section of the society

11 Targets

It is proposed in the National policy of Education (1986) that vocational courses should cover 10% of the higher secondary students by 1990 and by 1995 the percentage should rise to 25. It is further proposed that a substantial majority of the products of vocational courses should either be employed or become self employed
A Programme of Action has been adopted by the government to implement the National Policy of Education. It provides a broad strategy within which detailed schemes will be subsequently drawn up. Regarding development of vocational education, the Programme of Action underlines the following four areas:

1. Development of the Organisation structure
2. Programmer of Vocational Education
3. Vocational Education for Special groups and Out of School population
4. Preparation for development

Let us discuss these one by one in detail.

1. Development of Organisation Structure

An effective and efficient organisational structure is needed for the development of vocational education. The programme of Action recommends the following in this regard:

1. Establishment of Joint Council for Vocational Education A Joint Council for Vocational Education (JCVE) will be set up by the Ministry of Human Development. This council will be the apex body for policy planning and operation of vocational education at the national level.

11. Establishment of Central Institute of Vocational Education

A Central Institute of Vocational Education (CIVE) will be set up under NCERT. This institute will perform the functions of research, development, and evaluation.
Establishment of Appropriate State Bodies. The State governments will set up appropriate bodies like the State Council of Vocational Education (SVCE), State Institute of Vocational Education (SIVE), Department of Vocational Education and District Cooperation Committees according to their requirements.

Strengthening of Existing Organisations. Organisations like the NCERT, Regional colleges of education, SCERTs, Technical Teachers Training Institutes (T T T Is) etc. will be strengthened.

2 Programme of Vocational Education

The following vocational education programmes have been mentioned in the Programme of Action:

1 Vocational Education at 8+ Level. Vocational education for 8+ students will be introduced on experimental basis by the state Departments of Vocational Education.

11 Vocational Education at 10+ Level. The SCERTs and the SIVEs will formulate vocational education programmes at 10+ level. The guideline for such programme will be given by the NCERT.

Establishment of more Vocational Institution. 100 more vocational institutions will be established to provide more opportunities to 10+ students for vocational courses in engineering and technology.
iv Tertiary Level Programmes Tertiary level programmes like Diploma in vocational subjects Advanced Diploma programmes Degree programmes etc will be introduced in some selected polytechnics affiliated colleges and special institutions set up for this purpose

v Vocational Education Programme for Self employment Special training programmes will be introduced for the development of self employment/Entrepreneur skills

vi Establishment of Career Guidance Cell District Career Guidance Cells will be opened by the State Directorate of Vocational Education under the guidelines given by the NCERT/ the CIVED

3 Vocational Education for Special Groups

Vocational education programmes for special groups and out of school population as mentioned in the Programme of Action are as here under

1 Involvement of Industry/Community public and private sector in industry will be involved in vocational education through appropriate incentives and rewards For this involvement the JCVE will evolve proper schemes The JCVF/SCVEs and the State Departments of Vocational Education will identify and support those voluntary organisations which are already engaged in imparting vocational education to special groups like women the handicapped etc
Vocational Education Through Non formal programmes

Non formal vocational education will be provided to the rural people. For this purpose all polytechnic institutions ITIs selected higher secondary schools/colleges and other vocational and technical institutions will be engaged.

Part Time Vocational Education Programme

Part time vocational courses will be started for the benefit of special groups in selective engineering colleges polytechnic colleges Industrial training Institutes and other Vocational and Technical Training Institutes.

Establishment of Special Institutes for the Weaker Section

The State Department of Vocational Education will establish special institutes for Vocational Education for women, tribals and other weaker sections of the society to meet their identified needs.

Establishment of Special Institute for the Handicapped

Special centers of Vocational training will be set up for the handicapped.

4 Preparation for Development

Keeping in view the target of diversion of 25 per cent students to vocational courses by 1995, the State and Central government would take advanced action in terms of building the required infrastructure and facilities. In addition to it, a phased programme for the training of teachers, principals, and the officials in the vocational educational scheme would be undertaken using the available facilities in organisations like the NCERT/SIVEs and the TTTIs etc.
D Centrally Sponsored Scheme

A Centrally-Sponsored Scheme of Vocationalisation of Secondary education was started in February 1988. Under this scheme, financial assistance has been provided to State Government/Union territories for introduction of Vocational Courses in schools at the plus two stage. It has the following components:

i. Conduct of area surveys so that vocational course to be introduced in selected institutions are need based.

ii. Preparing curricula and course material.

iii. Organising training of teachers.

iv. Providing apprenticeship training and modification of recruitment rules to enable students from vocational stream to find employment in the organized sector.

v. Establishment of a Joint Council for Vocational Education at the National State and District Levels.

vi. Stressing the need for creating a Management Structure at various levels for effective implementation and monitoring of the programme.

The Scheme also seeks to promote experimentation and innovations in Vocational Education through Non-Government organizations.
Efforts are also on to provide employment to such trained students in the public and private sectors and to plan strategies for their self employment. There are over 3200 schools in the country offering about 8900 sections over 150 different courses relevant to the local employment opportunities (Sources India 1991 Reference Annual)

Ramamurthi Review Committee 1990

The committee recommended that socially useful productive work should be integrally linked with various subjects both at the level of content and pedagogy.

An integrated design of vocational education to be operated for classes IX to XII may be established as per the following model with a General core and Vocational core and flexible combinations of academic and vocational subjects.

<table>
<thead>
<tr>
<th>Classes IX to XII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core General</td>
</tr>
<tr>
<td>Core Vocational</td>
</tr>
<tr>
<td>Operational</td>
</tr>
<tr>
<td>Groupings</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Flexibility should be provided for children to opt for different combinations of academic and Vocational subjects as per the pattern given above.
The Janardhana Reddy Committee 1992 report recommended that work experience programme may be systematically implemented by allocating 12.5 per cent to 20 per cent of the school’s time for these activities having practical orientation in relation to the various subjects offered.

More recently the revised policy formulations of 1992 assigned a very important place to work experience in the school curriculum at all stages. It reverted to the term ‘work experience’ which was earlier used by Kothari Commission.

The Revised Programme of Action 1992 stated that it has been observed in actual practice that work experience has degenerated into trivial activities in the school and in many states the time allocation rarely exceeds 10 per cent. It further stated that all states/union territories should ensure that work experience is actually included as an integral part of the curriculum. The teachers are trained to impart the instructions and that necessary financial provision is made. Work experience programmes are aimed at developing learners’ confidence and sufficient psychomotor skills to facilitate their entry into the world of work at a subsequent stage. In school where work experience already forms a part of the curriculum these courses need to be toned up in keeping with the perceptions reflected in the NPE.
2.9 Research on Vocational Education and Vocationalisation of Education

During the 1950s and the 1960s, the researches in the area of vocational education focussed their attention on evaluation of institutions, students undergoing training and those who after training found employment. These researches were evaluative in nature and used survey designs to gather data necessary for research studies. During the same period, many theories of vocational development emerged. Thus, during 1960s and 1970s researchers in the fields of psychology, sociology, and economics contributed to the researches on vocational education.

Between 1970s and 1980s, researchers paid much attention to economic aspects of the vocational education programme. They covered cost/benefit studies dealing with the general versus the vocational education, vocational training within institution versus outside institution i.e., at work spots. On the Job Training (OJT) versus apprenticeship within factories and industries, formal training versus non-formal training and vocational training programme offered on varied courses. These studies were comparative evaluative exploratory in nature. Attitudinal surveys and opinion polls were also carried out to get feedback of the benefits accrued by students and employers followed by socio-economic surveys. Between 1980s and 2000s, there was concentration on policy-oriented and investment decision and related studies.
Studies are multi-dimensional and multi-faceted encompassing historical studies, descriptive studies, correlational studies, comparative studies, longitudinal tracer studies, case studies, evaluative studies, implementational studies, problem solving approach studies, and experimental studies.

Besides these studies from disciplines other than education figure prominently in this area. They cut across the disciplines of economics, sociology, psychology, education, and are interdisciplinary. In some cases, research on vocational education covers all sectors of population: youth, adults, women, and the disabled.

Most of the investigations/researches have prepared questionnaires. Interview techniques are used wherever the sample size is small. Mostly tests and tools not standardized in nature have been used in these studies. Self-prepared and administered tools have also been reported in the studies. Hardly a few studies have used rating scales, checklists, attitude scales, opinionnaire and interval scales (either Likert or Thurstone’s method).

The methodology adopted for drawing the samples have been simple randomization, multi-stage stratified sampling and stratified and clustered etc. depending on the nature and objectives of the study. Mostly survey designs and case studies have been used.

Statistical designs/data processing used in the case of majority of studies have been computer-assisted techniques or SPSS packages. These range from percentage analysis to regression and factorial analysis. Non-parametric statistics such as chi-square has been used. ANOVA, correlation is used in a few studies.
Ihl. Research studies reviewed by the investigator are presented cronologically under two heads viz studies conducted in India and studies conducted in Foreign Countries

STUDIES CONDUCTED IN INDIA

Singha (1967) conducted a survey on craft education in the higher secondary schools and teachers colleges of West Bengal. Craft was being taught in most of the 400 surveyed schools from class VI to IX. Absence of properly trained teachers, low salary, over crowded classes, inadequately facilities led the investigator to observe that craft education in West Bengal was far from satisfactory.

Raizada (1972) studied the patterns and problems of typewriting education in the secondary schools of Madhya Pradesh. It was considered to be far from satisfactory since the time allotment for the course was inadequate and teachers did not have any practical experience.

Reddy (1972) studied the vocational needs in relation to the occupational choices of 9600 IX, X, and XI grade students. He observed that while the social and economic status of the students was significantly related to their vocational needs, the occupational choices had significant relationship with their social status only.
Munjal (1972) studied the problems of dropouts from pre-vocational training centres in Haryana. 25 to 37 per cent students dropped out in three institutions. Parental indifference, improper attitudes to labour, unsuitable curriculum, and unattractive trades, poverty, and social maladjustment among pupils, temporary tenure of teaching staff, etc., were found to be the causes for drop out phenomenon.

Kulkarni (1976) discovered that a great majority of parents, teachers, and pupils held favourable and positive attitudes towards work experience programmes in IV to VII standards. Drawing was most preferred, and spinning was least preferred by both boys and girls. Boys preferred gardening, while girls preferred sewing.

Gupta (1978) conducted an experimental study of the impact of vocational training on behaviour of 40 IX standard male students each of a school from Kota, Rajasthan. The results showed that while training alone led to positive improvements, the impact was higher when reinforcement was coupled with training. However, the impact was more pronounced in the case of punctuality and completion than in the case of profession and concentration.

Bhandarkar (1980) used a self-standardised Thurstone type 50 items scale on 400 urban, semi-urban, and rural teachers from 18 polytechnics of Maharashtra to study the attitude towards teaching content training, students, colleagues, institution, and administration. One significant finding was that training of polytechnic college teachers rather than their qualifications had a significant association with favourable attitudes.
Patel (1980) critically examined the organisation of vocational education in the higher secondary schools of Gujarat State. The absence of clear guidelines, lack of orientation of teachers, the blind rush to the commerce stream, absence of diversification due to inadequacy of grants were some of the findings of the study.

Mowji (1983) studied the vocational and educational problems of 1800 XI and XII standard arts, science, and commerce students of Greater Bombay. Some of the problems reported by the researcher are absence of guidance for choice of courses, lack of co-ordination between schools and colleges, paucity of trained teachers, uninteresting syllabi and books, defective admissions, large classes, and inadequate facilities. Dissatisfaction among teachers regarding low wages and heavy work load.

Deshmukhiya (1984) examined the secondary school curriculum in Assam in the light of needs for Vocationalisation. The documentary analysis was done and unstructured interviews and informal discussions with the officers of the departments of education, educational administrators and policy makers of various states and union territories in general and Assam in particular were carried out. A questionnaire was used to determine the attitudes of parents, administrators, social workers, teachers, etc. towards Vocationalisation of secondary education curriculum in Assam. The major conclusions of the study declared the national pattern 10 + 2 + 3 needed to be accepted with minor modifications after considering the peculiar problem of the region or locality. The secondary curriculum should prepare the pupils to become individually competent. Phase wise teachers should be recruited from outside the state and provide them necessary orientation to suit the new curriculum.
Cokhalte (1984) conducted a study of Vocationalisation at +2 Stage (Commerce stream) the sample of the study included two colleges of Nagpur City. The findings of the study were (i) The presently run vocational courses were useful as compared to general courses but failed to prepare a student for any job or self-employment venture (ii) The government was not providing any job or financial assistance to the students passing out with vocational courses (iii) The practical training imparted by visits to different institutions and by arranging guest lectures was not sufficient (iv) Teachers needed to be trained on all practical aspects in their respective subjects (v) The grants provided by government were insufficient for imparting practical training.

Reddy (1984) conducted a survey of existing Vocationalisation of school education in Andhra Pradesh. The major findings of the study were (i) nearly fifty per cent of students dropped out at various stages between the sixth and tenth classes. The chances of introducing Vocationalisation were only possible from classes VIII to X (ii) socially useful productive work was conceived in schools as work oriented educational activity contributing towards the total development of the learner's personality (iii) socially useful productive work was given a weightage of 15 per cent of classes VI and VII and eight per cent for classes VIII to X in terms of time (iv) in the implementation of the socially useful productive work programme in schools the problems encountered included non availability of specialized teachers, inadequate physical and infrastructure facilities, non supply of copies of syllabus, non availability of funds and absence of guidelines for the disposal of finished products produced in the socially useful productive work programme.
Centre for Advanced Studies in Education (CASE 1985) conducted a study on Vocationalisation of education at the higher secondary stage in Maharashtra, Karnataka, and Gujarat states. The sample covered 140 higher secondary schools, 133 principals, 392 teachers, and 3405 students of vocational streams. The study revealed:

1. Institutions were mostly situated in urban areas.
2. Most of the students were males who belonged to backward communities.
3. Most of the principals had no technical education/background, thus they did not pay proper attention to the functioning of the courses.
4. Most of the teachers had technical education qualification. However, because of lack of job security and low salary, highly qualified and experienced teachers could not be attracted.
5. Except in a few cases, the courses did not match the local needs of employment as perceived by principals and teachers.
6. The syllabi were very lengthy and could not be completed in time.
7. Practical experience could not be provided to students appropriately because of lack of funds, lack of transportation facilities, and non-cooperation among teachers.

Deshpande (1985) conducted a study of the restructured courses implemented by Marathwada University and discovered that vocational and craft training courses did not create potential for paid or self-employment. Facilities for laboratory and fieldwork were inadequate. Though the attempt at restructuring has been welcomed, much was still left to be desired in its implementation.
Advent (1985) discovered intra regional imbalances in the introduction of vocational courses at the +2 stage in the Marathwada region. There was an imbalance in the choice of courses with the larger number of colleges offering secretarial practice while need was felt for courses in animal and crop science, small scale and ancillary industries, mechanical repairs, etc. Shortage of human resources (trained skilled and experienced vocational teachers) was one of the major problems faced by institutions offering vocational courses.

Barooah (1986) traced the development of polytechnic education in Assam during the period 1948 to 1978. He discovered that demand for technical manpower far exceeded supply. Some of the problems affecting polytechnic were defective selection procedures, outmoded syllabi, poor administration, inept management of examinations, in proper utilisation 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.

Kudesia (1986) demonstrated through an experimental study that the discussion method is superior to the lecture method in teaching technical English to first year students of polytechnic at Bhopal.

Mohanty (1986) made a survey on vocational education of Orissa from 1947 to 1981. An inventory was developed and sent to 118 vocational and technical schools so that heads of institutions could answer the schedule. Officials were interviewed. Major findings were the following: (1) Though very few schools imparted vocational and technical education in 1947, by 1981
there were 124 schools (ii) More men were attracted towards the courses than women (iii) There was shortage of skilled persons and an unemployment problem from 1961 to 1981 (iv) There was no placement service wing (v) Courses were not need based (vi) Dropout rates were high (vii) Students coming out successfully were technically unsuitable for jobs as they lacked practical experience

Potdar (1986) conducted a critical study of procedures followed for admission of candidates for nursing courses (B Sc) in 17 colleges of nursing in India. The major findings of the study were that entrance examination marks and qualifying examination marks showed better predictive value than interview marks with regard to performance of students.

Gogate (1987) conducted a survey in Andhra Pradesh, Tamil Nadu and West Bengal to study different aspects of vocational education and thereby to suggest improvements in vocational education. The major findings in relation to Andhra Pradesh that the students found the medium of instruction difficult and the staff engaged in teaching vocational subjects were either inadequate or untrained.

Sharma (1987) studied the effectiveness of the vocational exploration programme at secondary school level for Vocationalisation of education. The study indicated that vocational exploration programme was highly significant in attaining its objective. It was also found that both high and low intelligence groups gained significantly.
Robert (1988) conducted a study to find out if the vocational choices of higher secondary students depend upon their socio economic status. The study found that vocational choice of higher secondary students were independent of their socio economic status and also the vocational aspiration of their parents. Both boys and girls had similar vocational choices towards agriculture, arts, literature, executive, commerce, science, and social work. However, girls preferred the vocation household work than boys.

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

Muthiah (1989) surveyed the vocational education system for the disabled in Tamil Nadu. The study found that the vocational training imparted was not in accordance with the interests and aspirations of the children. These instead reflected the needs and requirements of the institution.

Choudhury (1989) conducted a study to find out the vocational aspirations, occupational choices, and academic choices of students. The sample consisted of 196 class IX students in the city of Pune. Using the descriptive survey method, it was found that 40% of the total sample wanted to become doctors or engineers. A majority of the students preferred the science stream for continuing their studies and future career. The study did not find any relationship between the occupation of the fathers and the occupational choices of the students.
Immanuel (1990) studied some major problems of implementing the programme of Vocationalisation of Education in the state of Andhra Pradesh. It was found that although there is a need felt for vocational courses in the state, there was neither a proper management structure to implement the scheme nor regular teaching personnel and necessary infrastructure facilities in the vocational institutions.

Gupta (1990) investigated the implementation of the programme in the schools of the Union Territory of Delhi. The study concluded that the management of vocational school was weak, the courses were not need-based and linkages were yet to be established.

Javed (1990) made a critical study of vocational interests of the students of arts, science, and commerce. It was found that the rural students were disinterested in vocations based on agriculture. They showed more interest in science-based vocations. While students of arts and commerce expressed high interest in persuasive and executive vocations, students of all the three faculties showed low and little interest in social vocations. They preferred and were highly interested in white collar jobs as against vocations requiring physical labour in which they were the least interested.

Kaur (1990) studied the educational and vocational aspirations of students belonging to different socio-economic locales of Jammu Division. It was found that sex, SES, and locality influence both educational and vocational aspirations when taken independently. Urban students differed significantly from their rural counterparts in their educational preferences and vocational aspirations. While rural students were found to aspire for high academic degrees or a degree in arts, the urban students aspired for high professional degrees or a degree in science.
Misra and Varma (1990) undertook a quick appraisal study of the implementation of Centrally Sponsored Scheme (CSS) in the state of Uttar Pradesh. It was found that the management system as suggested in the CSS had not been fully implemented at various levels. The district vocational surveys for identification of courses and institutions were not completed. There was a dearth of textbooks, teacher's guides, practical manuals, and other instructional material in almost all the vocational courses. No full-time teachers were appointed. The in-service teacher training programmes organised were grossly inadequate. While work sheds were constructed in 197 out of 200 institutions, a majority of them had a shortage of furniture and library books. No provision was made for raw materials and other contingencies.

Mohan and Gupta (1990) studied vocational students' career behaviour and their adjustment in courses at the +2 stage. Covering a total sample of 198 boys and 208 girls from the vocational stream and 166 boys and girls from the academic stream, the study findings did not by and large differentiate between academic and vocational groups on personal characteristics. Girls in the vocational stream showed a greater sense of satisfaction with availability of vocational curricula in comparison to girls in the academic stream. While girls in the vocational stream showed a rise in career maturity, boys showed a decline. Girls also developed more positive attitude towards these courses. A significant finding of the study related to the recommendation of the boys for introducing vocational courses at the secondary stage rather than the senior secondary stage.
Raiyada and Sacheti (1990) made quick appraisal of the implementation of the Centrally Sponsored Scheme of Vocationalisation of secondary education in Gujarat. The study highlighted certain inadequacies and drawbacks in the implementation of the scheme. These related to selection of institutions, management structure, district surveys, selection of courses, curriculum design, instructional materials, collaborative arrangement, students' future, and utilisation of available funds.

Sen Gupta and Dhote (1990) made a quick appraisal of the implementation of the Centrally Sponsored Scheme (CSS) on Vocationalisation of secondary education in the state of Himachal Pradesh. The study was very clearly and candidly listed the shortcomings in implementation like non-release of funds in time, no effective collaborative arrangements, absence of instructional materials and textbooks, no on-the-job training facilities, non-availability of raw materials, apprenticeship training and placement or guidance services, etc. Specific recommendations were made in the study to improve the situation as per the CSS.

Subramanian (1990) studied the Socio-economic status of students of polytechnic and their attitude towards manual jobs. The study found a significant relationship between lack of education and manual jobs. Students who hail from the higher and the lower income groups have a negative attitude towards manual work. The same was true about girls also. However, no significant relationship was found between personal development and manual jobs.
Vaid and Sen Gupta (1990) undertook a quick appraisal study of the implementation of Centrally Sponsored Scheme (CSS) 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 76% of students and teachers reported inadequate instructional materials and equipment. 76% teachers have not undergone any specialised training in vocational education.

56% of the students who joined vocational courses had obtained the second division and another 11% were first division in their high school examination. No vocational guidance was provided to students.

Varma (1990) undertook a similar quick appraisal of the implementation of the Centrally Sponsored Scheme of Vocationalisation of secondary education in Delhi. Weak points in the implementation included employment of only part-time teachers, no vocational survey, inadequate vocational guidance and dearth of instructional materials on the job training and collaborative arrangements. Sponsored courses were in greater demand.

Bhargava (1991) studied the interests of the students studying in the vocational education stream in Rajasthan and identified the difficulties faced by them. Questionnaires were administered to principals, vice principals, and subject teachers of the schools having vocational stream students studying vocational education and the concerned parents. The study found that a majority of students were interested in vocational education because of its employment preparatory nature. Lack of physical facilities, non-availability of trained teachers, non-release of funds in time are some major shortcomings identified.
Das (1991) made an analytical study of vocational interest of primary teachers. It was found that the vocational interest of urban primary teachers (male and female) differed from that of rural teachers. The rural primary teachers both male and female showed more interest in the teaching profession than the urban teachers.

Dhote (1991) made an investigation on the job study in the state of Maharashtra. The sample included 25 institutions, 19 heads of institutions, 113 teachers, and 769 students. The study found that the programme implementation in terms of the administrative setup, teachers, and infrastructure facilities was going well. The major lacunae identified were lack of suitable instructional materials, inadequacy of on-the-job training, and non-recognition of vocational courses for employment.

Patel (1991) studied the work experience programme in secondary teacher's college. It was found that in more than half the sample institutions, work experience was neither a compulsory subject of study nor evaluated, resulting in the absence of seriousness in its implementation. The facilities provided in terms of equipment, tools, workshop, trained teachers, and funds were grossly inadequate. The time devoted to teaching its content and methodology too was inadequate.
Rathor, Saini and Sharma (1991) investigated the problems and prospects of entrepreneurship promotion in polytechnics. Collecting data by interviewing polytechnic teachers, students, and diploma holder entrepreneurs, the study found that the majority of the teachers (58%) perceived that not more than 5% students opt for an entrepreneurial career. Such students, by and large, belonged to traditional engineering disciplines. The majority of the teachers wanted to undergo training in entrepreneurship and expected financial incentives to teach it. The teachers were of the view that poor financial background, lack of entrepreneurial information, lack of entrepreneurial attitude, lack of trained faculty, and inadequate policy support were the main problems in promoting entrepreneurship amongst polytechnic students. Diploma holder entrepreneurs indicated industrial visits, project work assignments, and guidance and counseling by teachers motivated them to opt for an entrepreneurial career.

Guru Dhote and Ray (1992) made an on education 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. Viz., delay in creation of the management structure at different levels. Lack of monitoring and 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.
Josh (1992) conducted the study on vocational achievement and problems faced by students after passing the +2 vocational examination. The study, which included 72 vocational products of Rajasthan, found that only 12.8% of them were self-employed. No student could get loans from any agency. A large number of students found the theory portions of the vocational curriculum very difficult. Their practical training was inadequate due to lack of tools, equipment, and materials. Even those students getting jobs remained dissatisfied because of inadequate salaries, lack of desired competencies, and insecurity of jobs.

Rathore et al. (1992) studied the impact of various assistance schemes on technical entrepreneurs with specific reference to Haryana State. The study revealed that technical entrepreneurs faced a number of problems like cumbersome procedural formalities, rampant corruption, non-cooperative attitude, red tapism, and wastage of time. The entrepreneurs were not aware of the schemes launched for their benefit. The support agencies generally reported that if the project was hi tech, export-oriented import substitute or environment friendly assistance is provided on priority basis. Support agencies emphasized formal training for the loanees. Some agencies are involved in conduct of Entrepreneur Development Programmes (EDPs) also.

Saraswathi (1992) undertook a study to investigate the problem: Are the various dimensions of the personality of school students related to their vocational interests? Taking a sample of 400 students, the study concluded that personality dimensions and vocational interests of tenth standard students were not related. Vocational interests were also not related to their academic achievement.
Swain (1992) conducted an evaluative study of the Socially Useful Productive Work (SUPW) programme at the secondary stage in Himachal Pradesh. It identified certain weaknesses in programme implementation like untrained teachers, no provision of in-service training, unavailability of instructional material, etc.

Sathumadhava Rao (1994) mentioned in his report that (i) the content of vocational subjects would in no way be inferior to the content of the non-vocational subjects that a student will choose. (ii) The employment potential has to be given top priority so that the students can get both theoretical and practical knowledge so that they are successful in their ventures. The four important components of the scheme relating to vocational courses are (a) Preparation of reading material for the teachers and students (b) Training for the teachers (c) Monitoring and evaluation and (d) Creating awareness of the programme among the public through media, etc.

Usha (1994) conducted a study of the problems in the implementation of vocational courses at +2 stages in Karnataka with special reference to institutional and situational variables and stated that (i) there were no significant differences in the intensity of problems faced by administrators in urban and rural areas. (ii) There were no significant differences in the intensity of problems faced by administrators in government and private managements. (iii) There were no significant differences in the intensity of problems faced by teachers in urban and rural areas. (iv) There were no significant differences in the intensity of problems faced by the teachers in Government and Private managements.
Bajaj (1995) pointed out that (i) Inadequacy of resources lack of trained manpower to teach the courses non availability of reading material hesitation on the part of industry to absorb the products of such courses are some of the hindrances to Vocationalisation (ii) The thrust of the vocational courses is to bring about social transformation through different areas of Arts Humanities Social Sciences Commerce Science and Technology in such a manner to make the students in these courses self reliant enough so as to become employable (iii) Many courses do not enjoy convenient and natural flowing linkages with the average academic level of +2 students who are to take these courses at +3 level (iv) The courses also require to be suitably aligned and re aligned to the industrial needs For this the participation of both the teachers and representatives of the industry is needed

Usha Ramkumar (1995) reported that (i) vocational training should spell out clearly the values that need to be developing during teaching learning process (ii) Teacher Training and teachers education programmes need to be restructured to make teachers aware of the values that should be imbied while teaching vocational subjects (iii) Organisational climate of institutions should be democratic in nature so that the students not only have choice of occupational training but also have freedom to practice certain value which they think are needed in the training for their future choice/career development (iv) The administrators and teachers of vocational schools should have a well developed philosophy of life and carefully planned educational practice This means that they should be effective leaders to disseminate considerable knowledge about the social context of education
Sethumadhava Rao (1996) pointed out about the undergraduate education needs flexibility and innovation in its academic structure (i) To provide a career orientation within the present theoretical subjects to make undergraduate education a terminal stage by developing competencies for the world of work (ii) To provide mobility in changing institutions from one college to another conventional to the universities and from one state to another such exercise would help in a greater degree of mobility for both the students as well as the teaching community.

Matani (1999) pointed out that National Technological University (NTU) in the USA and the excellent and extensive achievements of the African Virtual University in a very short time of its operation have proved beyond doubt that the concept of satellite based universities and technical institutions is the only way forward for large scale production of engineers and large scale retraining and upgrading of the existing engineering workforce. The concept should be applied globally and a number of satellite-based universities and technical institutions should be set up in different parts of the world including India.

Rameshwari Pandya (2000) reported that (i) the acceptability of vocational courses would make vocational students get suitable employment on completion of the training. Rules of recruitment in government, public and private sectors need to be amended (ii) Conduct short training programmes for functionaries and teachers of vocational education and ensures quality or standard of the course (iii) In vocational training the cost per students is very high as compared to general education sometimes three times higher (iv) It is usually beyond the capacity of an education system especially in a developing country to vocationalise the curriculum through the stage of secondary schooling (v) An attempt should be made for an alternative strategy for vocational education which is not exclusively school based or formal in nature.
Sehgal (2001) in the book Work Education he suggested that the improvement of work experience programme in schools included (a) Principal's active participation in the implementation of work experience programme (b) Proper allotment of work experience activities according to aptitude of students (c) More training programmes for teachers (d) Availability of raw material to schools (e) Proper motivation of teachers and students

Qureshi (2001) stated that National Vocational Qualifications (NVQs) will open new avenues in the all round development of the person. The technical institutions like Industrial Training Institutes and Polytechnics have a great scope to play an important role in the NVQs system.

Prasanthakumar (2002) said that the purpose of on the job training is to make students familiar with the atmosphere and problem of actual working conditions. Study tour, coaching apprenticeship, job rotation, special assignments, etc., are the important methods of successful vocational training. On the job training aids and techniques such as charts, lecture manuals, oral and written explanations, demonstrations, audio and videotapes and other aids. Therefore, specialisation in every branch of study is essential for a better placement. Here we feel the relevance of job oriented vocational education. More over vocational education may equip young man for self employment leading to a betterment of their standard of living.
STUDIES CONDUCTED IN FOREIGN COUNTRIES

The Research Studies conducted in foreign countries on vocationalisation of education are mostly descriptive and analytical in nature. A few studies reviewed by the investigator are mostly related to the description of the vocational education programmes existing in their respective educational systems and the conclusions in general are suggestive to bring changes in policy making of vocational education in the respective countries. A brief description of the studies collected by the investigator are given below.

Lennart Nilsson (1988) conducted a research study on Vocational Education in Swedish Secondary Schools trends and reforms. The study says that Sweden's policy in vocational education placed an emphasis on creating a system responsive both to the demands of industrialisation and to social demands for equality between practical and theoretical education at the level of the school for 16 to 19 years olds from 1960 to 1970. This resulted in the structural reforms of 1968 comprising essentially a new comprehensive school at the 16 to 19 year old level (the fackskolan or continuation school and the gymnasium). Vocational education was reorganised to provide a broad mutual education with progressive specialisation from branch orientation to specific job preparation. Similar changes occurred in other Scandinavian countries during the same period.
Marsha Rehm (1989) in the article "Emancipatory Vocational Education Pedagogy for the work of Individuals and Society" reviewed three viewpoints that currently predominate in debates over vocational education: (a) that it should be eliminated because its content is too often trivial and obsolete; (b) that job-specific vocational education must be provided for students who are not going to college; and (c) that it should be provided to all students because it teaches important work concepts, values, and skills. Although the third viewpoint reflects Deweyan ideals of a pragmatic and creative vocational aspect to general education, the review suggests that all three arguments share a common shortcoming: They all fall victim to a narrowly utilitarian view of worker education.

Vocational education is important because vocational life is important, but it must not be construed merely as an instrument to increase individual and national productivity. Students face significant decisions about what forms of work to perform and how to interact within the sociopolitical structures that condition vocational purpose and opportunity. We must not allow the school's potential to prepare students for liberating forms of work to become lost amidst a storm of debates that depend on rigid and stereotypical definitions of vocational education. Rather, we must imaginatively think of pedagogical patterns by which students will be empowered to transform themselves and the world with meaningful work.

Peter Van Den Dool (1989) presented a paper on "The Netherlands selection for vocational education starts early." In this paper, vocational education is seen in the context of the fact that compulsory schooling in the Netherlands lasts for ten years full time plus a further two years of part-time attendance (two days per week) at an educational establishment.
The first phase of vocational education (LBO) is offered in the second half of the four year junior secondary course usually in separate schools for each occupational grouping (see below) Many of these schools also cater for children who need special attention including a relatively high proportion of children from ethnic minorities The main emphasis is on general studies but vocational courses in a range of subjects start in the third year The same range of subjects can be continued up to a maximum of a further four years in senior secondary vocational schools (MBO) which draw pupils from general as well as Junior Vocational Education (LBO) establishments

The arrangements for school based vocational training largely date from the 1968 Secondary Education Act which tried to remedy the perceived deficiencies of the earlier system such as the lack of possibilities for differentiating pupils according to their abilities and special interests poor selection procedures resulting in pupils not ending up in the type of school most suitable for them as well as quality concerns Eight different types of vocational school were distinguished

for technical subjects domestic science agriculture commercial subjects and retailing the schools operate at junior (LBO) and senior secondary (MBO) and higher (HBO) vocational levels

teacher training social work and para medical courses are offered only at senior secondary (MBO) and higher (HBO) vocational level

fine art is available only at higher vocational level

Nevertheless these establishments focus mainly on general education until the higher vocational stage
Liebrand (1991) conducted the study in the Recent Developments in the Dutch System of Vocational Qualifications. This article outlines recent development in the Dutch qualification system, the problems with qualifications which became apparent at the end of the 1970s, the changes in national policy as a result of these problems, and the way in which the quality of qualifications will be assured in a reformed Vocational Education and Training (VET) system. It is argued that these efforts to make the qualifications more coherent may ease the difficulties of comparison.

Cathy Howeson (1993) in the article Parity of Academic and Vocational Awards considers the experience of modularisation in Scotland and its impact on the status of academic and vocational awards. It focuses on the national certificate: the modular system of vocational awards in 1984 and in particular its use in the general secondary school sector alongside traditional academic courses. It is here that the issue of the parity of vocational and academic awards is most visible. This sector is also currently the focus of debate in Scotland about vocational and academic routes following an official review of the upper secondary school and proposals to establish a two track system of academic and vocational courses.

The alternative strategies to improve the status of vocational education and training are very familiar: a unified system which combines academic and vocational elements and leads to single certificate versus a dual or multi track system where each track has a different curricular emphasis and leads to different certification (see Raee 1992 for discussion of any analytical model of multi track and unified systems). A modular approach is basic to
most strategies for a unified system since it provides a way to respond to the need for differentiation among students. Scottish post-compulsory education has elements of both systems (Raffe 1992). For example, we have separate institutional tracks with a division between the largely academic secondary school track and the vocational tracks of further education and Youth Training. But we also have elements of a unified system for example, there is no explicit tracking within the upper secondary school and school students choose varying combinations of academic courses and National Certificate modules. But it falls short of a unified system in two key areas: students courses – the academic and the vocational – are subject to different assessment and certification systems and it excludes non-school education and training.

Jaap Dronkers (1993) wrote a paper on The Precarious Balance between General and Vocational Education in the Netherlands. The Dutch educational system shows that educational systems do not inevitably give academic awards higher status than vocational training. Generally speaking, senior vocational training gives better opportunities on the labour market than senior secondary school or grammar school. This results in the rise of vocational training as the final stage of education followed before entering the labour market. However, the subject or discipline is of equal importance for the differences in labour market opportunities. So there is not a simple contrast between general or academic education on the one hand and vocational training on the other in the Netherlands. Thus contrast is muted by the differences between disciplines within each route.
Diagram of full time education
The educational system is an important institution for the distribution of unequal life chances. The integration of general and vocational education into one school community poses the threat of downgrading one route to the rubbish bin of the other. This is especially true if the possibilities of upward mobility within the educational system are more available in one route than in the other. This has happened in the Netherlands at the lower stage of the second level. Junior vocational training was integrated in school communities with other types of general education with the aim of improving the equality of educational opportunities. But what happened was that junior vocational training became the last option within the school communities and its attractiveness to parents and pupils diminished. This integration also meant the partial loss of avenues from junior vocational training to senior vocational training. However, the policy fixation on achieving more equality of educational opportunities through school communities is still very strong, and observers expect junior vocational training to collapse. This may mean that it will be difficult to fulfill the still existing need for low and medium skilled workers.

Senior vocational training took a very different route. It was not integrated into broad school communities but developed strong senior vocational institutions with many options aimed at pupils from junior general and even senior general education. This development is not yet finished, but integration with general education is improbable. Stronger links with vocational colleges are more likely because of the upwards options connected with these stronger links.
Vocational training gives better or equal average opportunities on the labour market compared to general or academic education. However, this does not mean that the variation in life chances of vocational and general education are equal. The variation in life chances of general education are larger on the whole. This means that general education offers more opportunities to achieve exceptionally high benefits than the analogous vocational education. A consequence of this difference between variation in life chances combined with equal average life chances is that students and their parents tend to prefer general education because they overestimate their own abilities to obtain these exceptionally high benefits. The difference between variation in life chances between vocational and general education originates from the larger number of options open to those with a more general education. The equal average in life chances between vocational and general education originates from the more clear options open to those with a vocational education. Despite the higher average benefits from technical disciplines, the number of options is smaller than for more general subjects. There is a clear tendency among parents and pupils to keep the largest number of options open as long as possible because of the growing uncertainty of careers on the labour market. This swing in vocational training away from technical training towards types of more general training may become a more important issue during the next decade than the parity between vocational and academic awards.
Brunyn E DE & Howieson (1996) in the paper Modular Vocational Education and Training in Scotland and the Netherlands between specificity and coherence states that modularisation has frequently been advocated as a means to reform and modernize vocational education and training to make it more flexible and responsible to economic, technological, and social change to take more account of individual differences and needs and to improve its coherence and efficiency as a system. In this article, developments in modularising vocational education and training in two countries—Scotland and The Netherlands—are compared. The analysis is restricted to modular initiatives within initial vocational education and training at a non-advanced level (that is at craft/technician level). Features and developments of the modular system in both countries seem to be closely related to strategies chosen to deal with the need to offer customized vocational (that is specific) training for various client groups which at the same time does not limit opportunities for progression and transfer—the coherence of the system. In confronting the modular systems and strategies with these somewhat contradictory needs, this comparative analysis drawn on two perspectives—a sociological and a psychological educational learning theory. From these perspectives it might be argued that collaboration and/or certain characteristics of modular vocational training offer a way out of the quandary of specificity versus coherence.
THOMAS BALS (1999) In the Paper ‘Fostering Talents in Vocational Training: current strategies in Germany’ presents an overview of the status and organisation of vocational education in Germany in general and discusses a pioneering effort of providing for the vocationally gifted in particular. The basis for this presentation is personal observation and research particularly in the light of major multidisciplinary research project launched by the German Federal Minister of Education and Science aimed at evaluating recent efforts to promotes vocational giftedness and to suggest a workable understanding of the theoretical construct. The effort of focusing vocational giftedness is still in its infancy but results so far are promising and bode well for the future.

Dianne Mulcahy (2000) Body matters in vocational education; the case of the competently trained discusses the role and significance of situated practices in competency based training (CBT) most particularly embodied knowledge and tacit skills. Using empirical material collected in the course of a recent research project on competency based training (CBT) the argument is made that the body as currently constituted in vocational education & training (VET) products is understood more as a symbol/informational than material/physical entity. This understanding gives rise to a thin conception of vocational competence and sometimes a thin practice of developing this competence. More broadly, the body is a critical site of contestation between radically different goals (e.g. industrial / educational, global / local). Bodily specificity (e.g. that skills experienced judgement) can be mobilized to challenge the universalizing impulses of
competency based training (CBT). Indeed this specificity completes or is necessary to these impulses. It plays a constitutive role in the practice of vocational education and training and could with profit be more fully recognized and supported in its policy. Vocational education and training competency based training (CBT) process commonly involves harnessing tacit powers or putting tacit knowledge (Polanyi 1967) to work.

Geoffrey Shacklock, Robert Hattam & John Smyth (2000) conducted a research study on Enterprise Education and Teachers Work: Exploring the links, the article explores the emergence of enterprise education in Australian schooling during the late 1990s. It investigates links between the rhetoric of enterprise culture, policy development in vocational education and the broader social terrain. Specifically, it scrutinises claims about the restorative potential of enterprise education as new vocational learning for the reinvigoration of work education in schools. The link between Key Competencies and enterprise education as related policy initiatives for vocational education is explored. Further, the discursive implications of new metaphors for teaching and learning associated with enterprise education and their likely impact on teachers' work is discussed. The article concludes with an outline for a cultural studies focus in work education for schools.

Nigel T. Bagnall (2000) in the paper The Balance between Vocational Secondary and General Secondary Schooling in France and Australia has attempted to address two problems. The first is the low status of technical and vocational education. The second is how two countries have responded to a global problem that of high levels of youth unemployment. The answer to
the first problem helps inform that of the second. By increasing the options open to students studying at the post compulsory years of schooling in particular by offering the Bac Pro as a genuine vocational qualification that doesn't restrict later movement into higher education the French have effected a 'double play'. Those who wish to begin work immediately have a qualification that allows for a transition directly into the workforce and those who do not may continue on with a higher education course of study. The direction in which the McGaw Report is heading is extending the vocational pathway considerably. Thus both France and Australia are responding to global forces outside their control and the responses they have found are remarkably similar.

The main argument underlying this paper is concerned with youth transition from school to work. As attested in Green et al (1999) the transition from youth to adult life has become more complex and more delayed in recent years (Green et al 1999 p 17). The global picture emerging as exemplified in the two disparate but related cases in this article France and Australia is one of increasingly varied and incremental routes into the adult world. The need for education provision to move away from stereotypes that have evolved over centuries of compulsory schooling is urgent. No longer can providers give status and prestige to one system and not another. As Green et al (1999) point out 'The increasing complexity and flexibility of pathways and proliferation of personal choices which they engender put a premium on the availability of continuing and impartial counselling and guidance (p 18).
If the vocational and technical educational strand is undervalued not only in the compulsory phases but also in post compulsory provision educational policy makers and professionals undermine the very fragile but essential solution to youth transition uncertainty. The necessity for diversity and flexibility of provision has never been greater. By restricting the provision of status to academic education alone professionals are undermining and unequivocally damaging the future pathways of not only the youth cohort but also the life courses of many adults. The pattern of the lifelong linear career traditionally enjoyed by skilled and professional males (sic) is becoming less typical as technological and organisational change shortens the shelf life of skills and as economic competition leads to continuous corporate restructuring and down sizing (Green et al. 1999 p 18). This article has used a comparative analysis to explore two examples of the impact of this trend and the different ways currently being found by governments to engage with it in developing education and training provision that will meet the needs of working life in the twenty first century.

Tillema Kessels & Meyers (2000) in their paper Competencies as Building Blocks for Integrating Assessment with Instruction in Vocational Education - a case from the Netherlands have given the changes in the system of vocational education in The Netherlands which based on the idea that the curriculum should focus more on competencies and work related experiences. In a competency based curriculum the content is not the central issue but the assessment and monitoring of what is learned and acquired relevant to (later) successful performance. Therefore it is essential to link
assessment with instruction that is focused on performance and aligned with later work. In their paper a framework is developed showing how to organise curriculum and instruction around competencies in vocational education. As an example, the Educational Development and Assessment System is introduced to highlight procedures and experiences of the integration of assessment with instruction in an institute for vocational education and to draw some lessons from this case for future design and construction of curricula.

The Educational Development and Assessment System (EDAS) clearly shows the interconnections between evaluation and assessment and the curriculum and attainment of competencies. Teachers play a crucial role in this link because of their experience in content and delivery. However, they may also endanger a successful link because a teacher’s outlook on competencies and ability to frame competencies in the format of the curriculum requires a new perspective and special attention to the outcomes of education while at the same time it places new demands on the ability of teachers and staff to incorporate the world of work into their teaching programmes. Teachers can be given substantial help by providing them with the necessary tools that go along with the new thinking about incorporating competencies in the curriculum. Valid assessment procedure and evaluation arrangements open up new horizons in discussing and exploring solutions in the teacher’s own work.
Anja Heikkinen (2001) in the article 'The Transforming Peripheries of Vocational Education: Reflections from the case of Finland' questions the transforming meanings of centre and periphery and the methodological and political implications to development of historically and culturally more sensitive research on vocational education conceived as a co-constitutor of centres and peripheries.

The influence of the different contexts between Finland and the third world countries can be identified in three aspects of vocational education. Firstly, in Finland vocational education became to be conceived as a distinctive form of education not as pre-vocational or integrated in general (upper secondary) education institutions like in the third world countries. Secondly, vocational education became primarily organised in branch specific institutions corresponding to occupational or industrial areas, not in general technical schools. Thirdly, the role of teachers as occasional educators and co-constitutors of occupations and the working life has become very influential. Until recent years, teachers have been proponents of the occupation and not of academic and general education like in most third world countries. An indicator is teacher training which has traditionally been organised in branch specific institutions separate from general teacher training.

(Vocational) School as a place of work starts to resemble more of a service company than an institute. Its activities and management are based on the principles which have proved successful in industry such as quality thinking. School can be conceived as a learning centre which is utilizing the various resources of the outside society. Vocational institutes build up companies for offering educational services co-operative all over of the country and abroad. Co-operation is thus expanding into sectoral
transnational clusters A networking school functions in clusters which are compositions of various competence centres. Networks within the clusters are exchanging knowledge of customers needs changes in markets management philosophies trends in economy and technology the state of money markets visions of future shortly of everything that is crucial to the success of a company. In networks the contextual and innovative learning processes are being accomplished by external impulses and emerging social interaction. New innovative activities and technology flows are also emerging promoting positive outward impulse. In the transformation of schools models from the development of organisational cultures in industry could be utilised (Helakorpi and Suonpera 1995).

Bell (2001) in the paper Challenges for Inservice Vocational Education writes that human talent must be in wide variety and progressively developed in unison with the rapidly changing and technically oriented vocational demands of society. As one of the applied sciences vocational education seeks to translate knowledge into human services through the world of work. Increasing demands for programs of vocational and career education are presenting new challenges to our systems for generating vocational education leadership and personnel development. These challenges must be confronted if we are to be successful in in-service education endeavors within the reality of our rapidly changing society.

Christine Mayer (2001) conducted the study on Transfer of Concepts and Practices of Vocational Education and Training from the Center to the Peripheries the case of Germany. Using the example of Germany this article examines how a center for vocational education and training (VET) is created what reasons exist for being a center and which factors determine
the centre periphery relation. Taking a historical systematical analysis as basis the contribution depicts the formation and development of modern German vocational education and explores the influences and effects this development has on the policies and concepts of the national development aid in the field of vocational education assistance. The analyses makes clear the close connection between support programs and features and structures of the German vocational education system, in particular its concentration on a dual organized apprenticeship system on technical and industrial training occupations and on gender based characteristics. It also illustrates how national notions of vocational education determine the level of development assistance in this field. One of the conclusions drawn is that due to the fact of the strong historical societal and cultural embeddedness of vocational education the transnational transfer of vocational education systems or components thereof seems rather impossible whether the transfer be to another developed country or to a developing country.

DAVE Whittington & Alan McLean (2001) in their paper “Vocational Learning Outside Institutions Online pedagogy and deschooling” discloses key benefits of online learners. On the basis of the capabilities of online technologies and current developments in education the authors predict that vocational learning will be profoundly changed. Inevitably these developments will also challenge established colleges and universities including their current dominance in major areas of vocational education and training. Education will probably become more pluralistic and more international.
Vocational education and training are available from a growing number of large profit-making organizations some of which already have a major share of other global markets like software and electronic communication. Some of these developments are more important that the exploitation of new communications technologies for training and for profit. Until recently defining the curriculum and accrediting learning has largely been the prerogative of government bodies and traditional educational institutions. Examination boards and other not-for profit organizations have traditionally defined school curricula, college curricula and assessment regimes. The curriculum and its accreditation in higher education have remained largely with the universities.

Online learning technology is developing rapidly in response to the technological opportunity offered by the Internet a drive towards better quality and cost effectiveness in education and the intervention of commercial interests. The relationship between the increased popularity of online learning as activity and the technical development of the technologies which support it seems symbiotic and it is reasonable to anticipate accelerating growth. Thus online technologies have the potential to support informal learning by people who want to enrich their lives and advance their capacities without attaching themselves to any formal program of learning or institution — and without regard to certification. Professional educators have a part to play in making online learning available to them.
Le Bach Duong & Morgan (2001) wrote a paper entitled The Contribution of Vocational Education and Training to the Integration of Refugee Returnees in Vietnam. The paper reviews major developments in Vietnam over the past decades as it moves from a socialist to a market economy focusing on the changing labour market situation the present Technical and Vocational Education and Training (TVET) system and its role in helping returned exiles find employment opportunities. It finds that despite tremendous effort only limited success was achieved and that the organisation and operation of the technical and vocational education system contributed only nominally to the reintegration of returnees into the labour market.

Madhu Singh (2001) worked on Reflections on Colonial Legacy and Dependency in Indian Vocational Education and Training (VET) a societal and cultural perspective. The article by Singh examines centre periphery relations in terms of colonial legacy in the field of technical and vocational education in India. Colonial neglect of vocational education had the effect of destroying existing indigenous systems of vocational learning that were embedded in distinctive local socioeconomic and cultural contexts. This legacy has continued even after India's Independence and is strongly reflected in manpower development plans and discourses of international agencies which cater primarily to the needs of the formal economy. However, as the informal economy increasingly comes to be seen as the key ground both for economic growth and poverty eradication, so the ability of education and training to promote informal sector activities needs to come to the fore even further in government and agency concerns. The article draws upon empirical studies to provide a comprehensive picture of the educational processes and the
competency people in the informal economy want need and utilise. For if vocational training and education is to cater to both the formal and informal labour markets then it is necessary to learn from the periphery and to take into account the traditions and values of the system of vocational learning in working life. What the author describes for India has applicability for many countries in Africa and Southeast Asia. Hence it is thus concluded that vocational education system is a dependent variable in a complex socioeconomic and cultural system hope for reform lies within the vocational education system itself i.e. by making vocational learning processes relevant to the masses the excluded and the marginalised in the peripheral informal economy. At the same time local development will have to be reworked. What needs to be addressed also is the sustainability of local and cultural solutions in view of macro economic and megaeconomic dynamics. One has to go beyond the narrow perspective of vocational training to the entire range of variables at the national and international levels that influence the formal entitlement and formal security of producers. The state has an important role to play with regard to formal entitlement concerning rent conditions access to workshops and markets insurance raw materials and formal property rights in short the right environments of rules institutions and core services.

Okolo and Srilington (2001) in their study Mildly handicapped learners in Vocational Education. A statewide study gathered data regarding general instructional practices within second vocational education programs and practices specifically related to handicapped learners in these programs. Surveys were mailed to a stratified random sample of 615 Indiana secondary
vocational educators with 388 analyzable surveys returned (63%). The following results were obtained: (a) a high level of independence was required of all vocational education students, especially in the vocational laboratory. (b) Vocational educators often used hands-on experience and demonstrations in the laboratory setting but they relied heavily on reading and writing skills in the classroom. (c) The primary modifications made for handicapped learners entailed the provision of extra resistance or additional time with curricular or instructional modification occurring much less frequently. (d) Although the educators in the sample were veteran teachers and highly educated, 38% had not received any type of training in working with handicapped learners. (e) Vocational educators appeared to have minimal involvement in decisions regarding placement of handicapped learners in their programs. (f) Consultation regarding handicapped learners in vocational education appeared to be unsystematic, and (g) the vocational educators in this study were comfortable in having a handicapped learner in their classroom. The results of this survey highlight the critical need for more coordinated efforts between special and vocational educators toward the occupational preparation of mildly handicapped students. Special educators will need to solicit information from vocational educators regarding the characteristics of their programs and their expectations for student performance within those programs. Given the academic and behavioral demands of the classrooms and labs surveyed in this study, it is likely that special education students will require resource support to meet these expectations. Vocational educators appear to need and indeed to be desirous of (Peterson & Thomas, 1987) additional training and assistance in working
with the handicapped learners in their classes. Given the positive attitudes of vocational educators documented in this and other studies (Claxton 1986; Moorman 1980) activities that focus on improving these teachers' attitudes toward handicapped learners are probably unnecessary. Moreover, the extensive nature of these respondents' educational backgrounds should be taken into account. Vocational educators' experience and positive attitudes are indeed strengths upon which further collaboration and cooperation can be built.

Thomas H. Arcy (2001) in the paper 'Policy and Policy Making: A View for Vocational Education Administrators' writes that policy making is becoming more complex in the years ahead. Today's vocational educational leaders need to be aware of the process and importance of the social, political, economic, and technological forces that affect the future of the programs they administer. Careful observation of the negative process between teacher organizations and school boards indicates that persons who plan certain careers in education should be aware of the developments in the area of their planned professional development.

Xavier Bonal (2001) in the article 'Expansion of New Vocationalism and Realities of Labour Market: View from the Spanish Periphery' presents an analysis of the recent vocational education and training (VET) policy in Spain. The article presents the particular characteristics of mass schooling in Spain, some points of historical information are provided to highlight the simultaneous process of consolidation and crisis of mass schooling in Spain. It is argued that the State had to face the democratisation of the access to
education in times of fiscal crisis and heterogeneous demands coming from different social sectors. This theoretical and historical framework is used to look at policy documents and academic materials that show the central role of new vocationalism in official education discourses and its rhetorical function to legitimise education policy. The article argues that Vocational Education and Training discourses and policies have played a significant role as a symbolic production resource for coping with shortcomings and contradictions. Qualitative and quantitative data are given to show both the real dynamics of the Spanish labour market and the specific logic of both the State's Vocational Education and Training (VET) policy and the employers discourses in shaping what they expect from the education system and the type of skills they ask for.

Hubert Ertl (2002) in the paper The Concept of Modularisation in Vocational Education and Training the debate in Germany and its implications summarises the debate on modularisation in initial vocational training provisions in Germany in the context of the German dual system. This system has been increasingly criticised in recent years and the paper describes the ongoing discussion regarding potential strategies for the modernisation of this system. The paper then introduces three different concepts of modularisation in training provisions that have emerged from the recent debate in German training framework. Finally, a potential strategy for the modularisation of initial training in Germany is proposed. It draws on research regarding modules and units in training in other European countries and shows how it might be possible to embed the concept of modularisation within the pre-existing training frameworks in the German context.
Calvert and Al Shetarwi (2002) explore the mismatch between skills and jobs for women in Saudi Arabia in technical and vocational areas on the basis of the views expressed by private sector business managers of Saudi Arabia.

Saudi Arabia's rapid development has highlighted the shortage of national technical manpower and the subsequent need to recruit non-Saudi technical workers on the one hand and the difficulty of replacing these workers with qualified Saudis on the other. Therefore successive Development Plans have tried to raise the quality and quantity of technical and vocational education for both men and women. In 1995/96 only 5 percent of Technical and Vocational Education (TEVT) enrolled students were female. This compares with an average of 29 percent in other Islamic countries and 45 percent in Japan (UNSECO 1997 1999). Part of this may be due to the preferences of female students in education part due to the structure of Technical and Vocational Education (TEVT) in Saudi Arabia part due to the availability of technical and vocational jobs available for women after completing their training and part due to the natural place of women in Saudi society. The Seventh Development Plan (2000-2004) assumes that the private sector will play a very significant role in employing a Saudi labour force including both men and women. As part of a comprehensive study concerning the factors affecting women's employment in the Saudi private sector business managers in four large cities were surveyed to see what factor they felt were important. The main factors affecting employment of women in technical and vocational education were seen by the managers as those relating to the structure of Technical and Vocational Education (TEVT) in Saudi Arabia rather than preferences of women or pressures from society. The conclusions are as follows.
The current system does not have the breadth of subjects in Technical and Vocational Education (TEVT) for their needs. It is suggested therefore that the expansion of the range of subjects in Technical Institutes in the six areas planned by the government should be implemented as soon as possible to produce women trained in computing, electronics, accountancy and the other subjects needed by the private sector. This will satisfy private sector needs and lead to a replacement of non-Saudi workers.

The skills provided by the current system are not appropriate to the needs of our sample managers. It is therefore suggested that more cooperation should take place between the public and private sector in the planning of Technical and Vocational Education (TEVT). Also direct links should be established between women's education and the labour market. Following the survey it is suggested that progress can be made by altering the structure of Technical and Vocational Education (TEVT) in Saudi Arabia directly rather than by trying to change things indirectly by trying to change the attitudes of girls in schools, colleges or universities.

These suggestions all have the advantage that the changes proposed are implementable, measurable and controllable without compromising the Islamic principles underpinning Saudi Arabian Society.
2.4 Conclusion

A glance at the review of literature presented in the previous pages reveals that there is a clear gap between the ideology and practice of Vocationalisation of Education. Theoretically, different policies of Vocational Education and Vocationalisation of Education envisage a strong ideology in support of Vocationalising Education which probably reduce educated unemployment, encourage self-employment among younger generations apart from making them confident, self-dependent, and work-oriented at any stage of their education.

But the research studies reveal that most of the vocational programmes are unable to yield the expected results although a strong ideological base and good policies are implemented. The reasons are obvious. The wide gap between the theory and practice in vocationalising our education and mismatch between competencies developed through different programmes and employment market are making our educationists think of introducing innovative approaches to vocational education.

It is essential to analyse the situation by gathering the viewpoints of different people involved in vocational educational programmes. Apart from lack of sufficient teachers, insufficient infrastructural facilities, paucity of funds, lack of linkage between the training programmes and the demand of employment market, etc. It appears that there are two (i) ideological and (ii) practical objections for the failure in realising the goals of Vocationalisation of Education. The ideological objection is lack of parental support to the so
called vocational trades in which training is being imparted due to low social/economic status prevailing in the community on these programmes. The practical objection is that in no programme of vocational education the trainee is exposed to practical work and their by the trained personnel are unable to stand their own either by finding a suitable employment or by creating a self employment. All the objections can be brought under these two major heads. How do parents think of these vocational programmes? What are the attitudes of principals, teachers and students towards these vocational programmes? Shall we have to provide vocational education by establishing separate institutions or vocational element is to be incorporated as one of the component of formal school? These are all the questions which are to be answered thoroughly through investigation so as to suggest modification in our policies and programme to realise the expected results of Vocationalisation of Education.

On the basis of these conclusions and the insights accrued through review of literature the problem is stated with its significance and objectives in the subsequent chapter.