Vocational Higher Secondary Education in Gujarat : a Critical Evaluation

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ABSTRACT

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Govind Desai

Over the last thirty years there has been a vigorous debate on the role of vocational education in developing societies. Critics have asserted that vocational education cannot deliver the economic and social benefits claimed for it. Despite the debate vocational education has continued to expand. India has followed the example of other developing societies with national plans for the extensive implementation of a programme of vocational education at the higher secondary level. The target was that by 1995 25% of the students in higher secondary education should be in the vocational stream. However progress has been slow and there has been considerable variation between states.

In order to examine the problems of implementing vocational education this study examines the progress made in one state, Gujarat. It draws on examination of official statistics, documents and interviews with officials. The major part of the study is a comprehensive survey of the perceptions of the major stakeholders in vocational education - the Principals, the Teachers, the Students, Ex-students and Employers.

The thesis examines the implications of the findings for the broad debate on the role of higher secondary vocational education in developing societies and more specifically for developments in India and Gujarat. A series of recommendations relating to areas such as the selection of schools and vocational courses, their management structure and staffing and their curriculum are made.

Table of Contents

List of Figures and Tables

LIST OF APPENDICES

CHAPTER ONE

VOCATIONAL EDUCATION IN DEVELOPING SOCIETIES

1.1 INTRODUCTION

The history of vocational education in developing societies is a confusing one. From colonial times vocational education has been viewed as consisting of measures "to stabilise traditional agricultural life and to curb educational 'over-production' - the tendency of individuals from rural areas to continue in school past the capacity of labour markets to absorb them". (Grubb 1985 pp.527-28). However the major calls for the development of vocational education came at the end of the 1950s and in the 1960s. After independence, many governments thought that investment in education would significantly improve their prospects for economic and social development and put forward plans for ambitious educational expansion in pursuit of universal primary education and national development. However the expansion led to the appearance of large numbers of school graduates who were unable to secure white collar jobs. Between 1960-73 unemployment in these societies grew from 37 million to 54 million, an increase of about 54%.

Critics such as Balogh (1962) and Dumont (1966) argued that the unemployment problem was due to the academic nature of the school curriculum and advocated the introduction of a vocational education programme. They believed that the academic nature of the secondary curriculum contributed to negative attitudes to agriculture and manual work in general while fostering unrealistic vocational aspirations. Balogh wrote that:

> "Since between 80 and 95 per cent of Africans are dependent upon agriculture, the essential need in African education is the development of large-scale technological and agricultural

> programmes within the school at all levels. The school must provide the nucleus of modern agriculture within the villages, and play a central role in the general raising of standards of living within the subsistence sector. Present educational facilities constitute an obstacle to rural progress because people are not trained for agriculture, and academic systems of formal education are the chief determinants of attitudes hostile to the practice of rural agriculture". (Balogh cited in Foster 1966 p.142).

Balogh continued the argument through the decade writing in 1969 that "As a purposive factor for rural socio-economic prosperity and progress, education must be technical, vocational and democratic" and suggesting that "elementary education must impart technical knowledge to rural youth in an eminently practical way". Balogh (1962) and Dumont (1966) proposed that the essential need was for the creation of technical and agricultural programmes within the schools. It was argued that this would prepare students for rural jobs including agriculture, fishing and crafts, so that they would settle in the rural areas to become the change agents of the rural economy. This would help halt the urban drift and remedy the situation of unemployment among school graduates at the pre-university level.

These writings influenced the governments and educators of the developing countries who introduced diverse forms of vocational programmes into the educational system to help solve their socio-economic problems (see, for example, the report on the Addis Abada Conference UNESCO 1962). African countries setting out the plan for the future proposed that :

> "To meet the demands of .... African social and economic life.... is the need to expand the curriculum at the second level in the direction of more technical and vocational education. Such programmes are necessary to provide the skilled and semi-professional manpower essential for economic growth". (UNESCO 1961 p.6).

The case for vocational education retained the support of key agenda setting bodies. Organisations such as UNESCO and the World Bank played a leading role in reviving and furthering the cause of vocational education or diversified secondary education. UNESCO adopted in 1974 an important detailed recommendation concerning technical and vocational education, and argued for technical and vocational education as 'an integral part of general education', as a 'means of preparing for an occupational field' and as an instrument to abolish barriers between levels and areas of education, between education and employment and between school and society. The World Bank's sector policy paper on education (World Bank 1974) attacked school curricula as excessively theoretical and abstract, insufficiently related to local conditions, insufficiently concerned with attitudes and with manual, social and leadership skills.

1.2 FORMS OF TECHNICAL AND VOCATIONAL EDUCATION

Technical and vocational education has generally been located in one or more of three distinct institutional settings; in formal schools; in post-school vocational training institutions where institutions are variously labelled as 'polytechnics', 'technical colleges' or more rarely 'junior colleges' (Middleton et. al. 1993 p.9); or in enterprises, whether large or small, industrial or commercial (King 1993). In most countries there is a dominant approach although everywhere there are examples of technical and vocational education in alternative settings. In this study the concentration is on the school setting while remembering that even within the school setting there are major variations.

> "Societies attempting to vocationalise education through schools have focused on the diversification of the secondary school curriculum. The term diversification refers to efforts by the schools to include in their curriculum those practical subjects which are likely to generate among the students some basic knowledge, skills and dispositions that might prepare them to think of becoming

skilled workers or to enter manual occupations". (Bacchus 1988 p.31).

In some countries, particularly in the developing world where primary schooling may be terminal for many of the students, governments have encouraged varieties of exposure to practical subjects, manual activities and even elementary business awareness within the primary phase (see, for example, Sifuna 1992).

Types of diversified secondary education

King (1993 p.202) has identified three broad differences in approach at the secondary level.

(1) The first is a multi track comprehensive school in which several vocational fields coexist with an academic course of study. Within the school, many areas of study such as agriculture, commerce, technical subjects, and home economics are offered under one roof. Students in such schools are encouraged to specialise in one of many vocational subjects and at the same time to continue academic courses. By encouraging flexibility, diversified schools allow students the options of pursuing either advanced technical or vocational training or continuing with university education. The main advantage of such a system is that it permits students to be exposed to academic courses while simultaneously pursuing a rigorous vocational programmes.

(2) A less common diversified system is one that combines only one major vocational course (rather than two or more) with high-quality academic curriculum, again under one roof. These double-system schools were created by modifying the curriculum in previously all-academic schools. As in comprehensive schools, students pursue vocational course work in conjunction with academic subjects. Frequently, such schools require all their students to take some vocational courses.

(3) There is the tradition of separate vocational and technical schools running alongside the general secondary school.

Another way of looking at diversified education is to concentrate on the proportion of students' time devoted to academic or vocational subjects rather than on the type of institution in which the instruction is offered. Middleton et. al. (1993 p.9) has differentiated between secondary schools in terms of the curriculum time they allocate to vocational education. He called vocational preparation for skilled workers in schools that devote at least half of their curriculum to occupationally specific theory and practical courses "vocational education" or "vocational schooling". Schools that provide comparatively fewer occupational courses in an otherwise academic curriculum are called "diversified" schools, and their programmes "diversified education".

Of the three differences in approach identified by King (1993), the World Bank preferred the first solution of establishing vocational courses alongside general courses in multi-purpose secondary schools. Accordingly the Bank suggested the increasing vocationalization of the curricula of academic schools and supported agricultural, technical, commercial and home economics options in regular secondary schools. During the period 1960-1985, Psacharopoulos and Loxley (1985) have estimated that the World Bank have invested about 20 per cent of its total education lending in diversified secondary levels of education. Heyneman (1984) has calculated that one hundred seventeen secondary education projects assisted by the World Bank between 1963 and 1982 contained provisions for a diversified curriculum.

Justifications of the investments were frequently based on the following hypotheses (see Tilak 1988b p. 245).

(i) Differentiation of occupation in the developing economies requires secondary school graduates with varied skills, and hence links can be formed between occupational

differentiation and educational diversification. Thus diversified secondary education establishes a closer relationship between education and work. It is based on the assumption that traditional education, apprenticeship, and on-the-job training cannot train enough workers to meet the training needs of current and future jobs, in particular the demands for skilled labour.

(ii) Given the goal of economic progress, vocational education itself is found to be promising in contributing to such progress, both by reducing unemployment through employment in the fields of pre-vocational specialisation and self-employment, and by engendering a higher propensity for labour force participation at the end of secondary schooling, improving productivity and correspondingly resulting in higher graduate earnings. Those arguing for an emphasis on vocational courses in secondary education argue that a system of academically oriented education predisposes students to enter white-collar jobs and not ones that require manual labour and skills in short supply. It is often argued that schools should equip students with the knowledge, skills, and attitudes they need to enter specific vocational fields, such as commerce, agriculture, and technical trades , whether as employees or self-employed.

(iii) Vocational education is also seen as an equity measure. The vast majority of citizens in developing nations are rural and uneducated. If governments wish to retain the support of their principal constituents, they must find means to satisfy the social demand for "free" education. As an antidote to urban-biased elite education, vocational education will promote equity with a rural bias and serve the needs of relatively poor people. Vocational education has been seen as the answer to an enrolment problem: the tendency of some students (particularly lower class students) to drop out of schools without occupational skills - a problem that vocational education promises to resolve by providing a more interesting and job-relevant curriculum. More specifically it is believed to be an effective answer to rural problems, 'to alleviate unemployment; to reorient student attitudes to rural society; to halt urban migration; to transmit skills and

attitudes useful in employment' (Lillis and Hogan 1983) and an important measure of development for 'disadvantaged youth' in rural and urban areas (Corvalan-Vasquez 1983).

1.3 THE EMERGENCE OF THE CASE AGAINST VOCATIONAL EDUCATION

Running alongside the development of vocational education has been a body of literature critical of its effectiveness. The main thrust of the criticism was that vocational schooling by definition is related to fairly narrow job skills, requires conditions of employment growth and buoyant demand for training skills, in order to meet its objectives in the economic and wider social sphere.

In the mid 1960s Foster (1965) published his seminal paper challenging support for developing vocational education and elaborating the 'vocational school fallacy'. Foster argued, as did later economists of education, that changes in curricula were limited in their effects. He argued that unemployment among the educated was the result of rapid educational expansion set in a relatively stagnant economy. The modern sector was not expanding quickly enough to be able to accommodate the constantly rising number of school graduates. The existence of a rural and an urban economy encouraged school graduates to drift into the urban centres in search of a job. Vocational instruction in agriculture would not in itself therefore induce young people to enter farming unless the existing economic structure and its pay differentials underwent a transformation. He argued that aspirations are formed by perceived opportunities in the labour market, not by the school curriculum. As he challengingly wrote "the idea that children's vocational aspirations can be altered by massive changes in curriculum is no more than a piece of folklore with little justification". (Foster 1965 p.405). As Achola and Kaluba (1989) pointed out respect for, and attraction to jobs in agriculture, rural areas, the informal sector and traditional service industries appears more related to the objective realities of income, working conditions and prospects for betterment than to the influence of

vocational schooling on the attitudes of labour market entrants. As Blaug (1973 p.22) pointed out vocational schooling may therefore create "a sense of second class citizenship among both teachers and taught which militates against effective learning".

Studies carried out in the 1960s were already raising key questions about the effectiveness of specialised secondary vocational programmes. Bukhari (1968a, 1968b) looked at short and long range benefits derived from programmes in Jordan and Tunisia and concluded that (1) the more specific the vocational training, the less likely it was to be relevant to the actual needs of the job market; (2) vocational secondary schooling in Jordan cost ten times more per pupil than academic secondary schooling; and (3) the benefit-cost ratio for vocational graduates was 2:1, while for academic secondary graduates the ratio was 3:1. Bukhari argued that vocational schools should be integrated into the general academic educational system to create comprehensive schools because few students were later employed and the costs of educating vocational students exceeded those of general secondary students.

In 1971 El Salvador implemented diversified secondary schools programmes that provided academic and commercial subjects as well as industrial arts, agriculture, health, navigation, fishery, and hotel administration. The objective of the programmes was to improve the employability of secondary school leavers and to prepare them for further specialised studies in secondary schools. McGinn and Balart's (1980 cited in Psacharopoulos and Loxley 1985 p.30) evaluation was a cross-sectional study of a sample of members of the first cohort to pass through the programme to determine their success in the labour market one year after graduation. The basic hypotheses tested referred to the relationships between employment and field of specialisation, earnings and academic success, and secondary school stream and higher education career. The findings showed no significance differences among graduates of different fields of study with respect to labour market success (in terms of employment opportunities or earnings), even though the unit costs of different educational streams varied

considerably. In terms of higher education, no relationship was found between the course taken in secondary school and the field of specialisation in higher education. The evaluation concluded that the diversification reform in El Salvador was a failure because (1) the results of target schools were no different from those of traditional academic secondary schools, and (2) diversified schools were on average more expensive than traditional secondary schools.

Opponents of vocational education (see, for example, Grubb 1985 p.542) argue that:

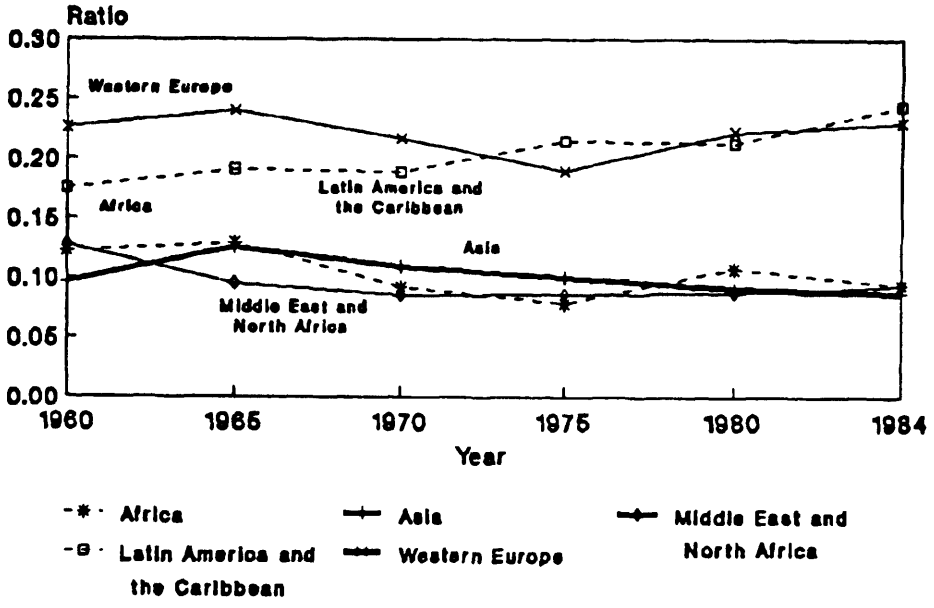
> "Employers should be the judges of its effectiveness. Because most employers, according to these observers, do not prefer vocational over academic school graduates, and because most students seldom find jobs in areas for which they were specifically trained, the economic value of vocational education as panacea for the ill of structural unemployment can be challenged".

1.4 TRENDS IN VOCATIONAL SCHOOLING

Despite the support of the World Bank, Benavot (1993) showed that there has been a general shift away from vocational schooling in relative terms since the mid 1950s. Looking at regional trends (Figure 1.1), decreasing vocational schooling ratios (though not absolute numbers) is the prevalent pattern, except in Eastern Europe (not shown) and in Latin America, where the ratio is also more than double that in other developing country regions.

Figure1.1

Vocational Enrollment Ratio by Region

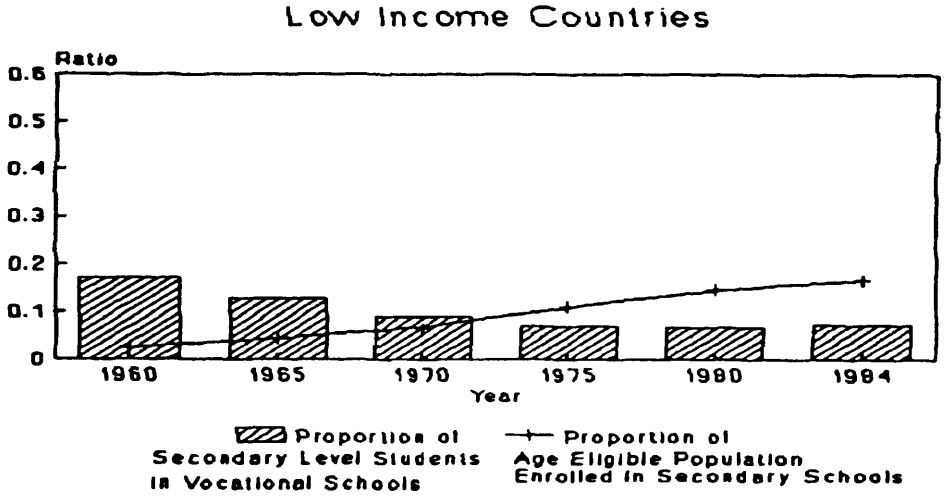


Source: Arriagada and Ziderman (1992 p.2).

Trends over the period 1960-84 differ markedly between low (those with a GNP per capita below $1,810 in 1986) and middle income countries (those with a GNP per capita in the range $1,810 - $7,410). In low income countries, the subject of this study, as total secondary school enrolments (as a proportion of the age population of secondary school age) rose from 3 to about 20 per cent, the vocational schooling ratio declined from 19 per cent levelling off to 8 per cent (see Figure 1.2). Thus the albeit slow growth in secondary schooling in low income countries has taken place primarily in the academic / general streams. Figure 1.3 shows that in middle income countries there has been a more rapid growth in secondary school enrolments but again there has not been a rapid expansion in vocational schooling.

Figures 1.2

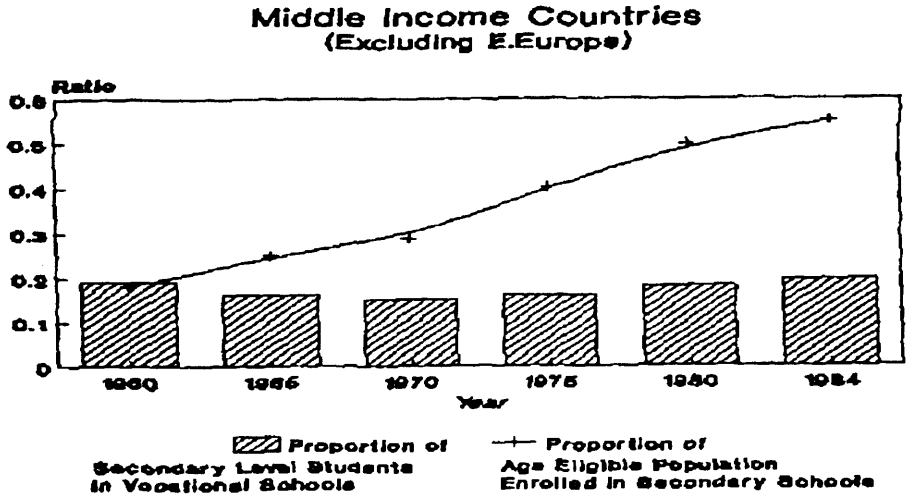
Vocational Enrolment in Low Income Countries



Source: Arriagada and Ziderman (1992 p.3).

Figure 1.3

Vocational Enrolment in Middle Income Countries



Source: Arriagada and Ziderman (1992 p.3).

1.5 THE NEW RESEARCH

An internal review of diversified education components in World Bank projects over the past two decades (Haddad 1979) identified several questions. The review indicated a lack of evidence that the new type of schools improved the quality of education, changed student attitudes towards the labour market, or had the desired effect of directing graduates to areas of employment where they allegedly were most needed. It argued that diversified education projects assisted by the Bank had not contained enough tracer (follow-up) studies or other types of evaluation to show whether diversification has met its objectives. In the 1980s a number of syntheses of research carried out over the previous decades led to a re-examination of the question of the effectiveness of diversified secondary schooling and challenges to some of the prevailing orthodoxies The research evidence can be considered under a number of broad headings.

The Cost of and the Returns to Vocational Education

A large empirical literature reviewed by Zymelman (1976), and Tilak (1988a) has developed over the last twenty-five years arguing strongly against vocational schooling on cost-benefit grounds. Research showed that the costs of providing vocational education at the secondary level, whatever the structure, were higher than the costs of providing academic education. Psacharopoulos (1988) reported a number of studies which found that the vocational curriculum was considerably more expensive than academic curriculum. Lauglo (1983) in an evaluation of secondary technical schools concluded that in terms of teaching costs and supplies, vocational education was twice as expensive as other subjects. When capital costs were considered, the differences in costs of the curriculum were even more dramatic.

The high costs of vocational education did not seem to be compensated for by a high return. Psacharopoulos and Loxley (1985)'s research in Colombia indicated that the social return on the diversified curriculum was no higher than for the regular schools, despite the higher rate of capital investment, while in Tanzania the return might even have been somewhat lower.

Large-scale tracer studies showing rates of return for vocational schooling and training programmes were lacking for most developing countries. One reason for this was that the programmes were started too recently to gain a clear picture of their graduates' earnings (Perry 1981). Some studies (see Schiefelbein (1979) in Chile and Colombia and Puryear (1979) in Colombia) reported benefits with vocational education graduates in these countries obtaining higher salaries than those from academic tracks with the same number of years of education. According to Schiefelbein, students were increasingly aware of the labour market payoff from opting to follow a particular curriculum. The key question raised by such studies is the effect of the general economic context on the impact of vocational education. Gouveia (1972) examined preferences for types of secondary schooling by social class origin in Sao Paulo, Brazil. Because Sao Paulo was a dynamic industrial setting at the time of the study, the author found no difference in the choice of vocational subjects by either middle-or working -class youth; all showed a predilection for industrial courses. A principal cause of this was the structure of the Sao Paulo economy at the time: the wages paid to skilled labour were higher than those paid to clerical and sales employees.

The Relationship between Involvement in Vocational Education and the World of Work

Researchers pointed out there was no reason to believe that graduates of vocational education would be more likely to find work in their field of specialisation than graduates of academic education. This was because many employers prefer to hire

graduates with the highest level of educational performance because they believe that they are the easiest to train. Most employers, according to research, did not prefer vocational over academic school graduates, and because most students seldom find jobs in areas for which they were specifically trained, the economic value of vocational education as panacea for the ill of structural unemployment can be challenged. Moreover research began to show that the provision of vocational education did not mean that the students would automatically seek work after graduation or that they would take a technical or manual job. Many students who fail at the academic route use the vocational schools as an alternate route to higher education. When unwilling students are 'forced' into the vocational streams, the graduates from these programmes frequently find their way back into higher education. A study of Bangladesh (FREPD 1981 cited in Tilak 1988b) found that as many as two thirds of the graduates of vocational and technical education were unemployed with only 10 per cent of the graduates entering self employment. Moreover other studies have found that vocational education does not change students' attitudes to manual work or further education (see Wanasinghe 1982b).

Other studies of vocational school programmes in Sri Lanka (Wijemanne and Welkala 1975a), India (Fuller 1976), Barbados (Oxtoby 1977), and Swaziland (Sullivan 1981) pointed to similar conclusions. In general, (1) if they have a choice students attend an academic school; (2) teachers who possess both theoretical and practical ability in vocational education are difficult to find; (3) industry is reluctant to pay the salaries expected by vocational graduates; (4) there is a realisation that maintaining up-to-date shop equipment similar to that used in modern industry is too costly for most school budgets; and (5) students often do not take jobs in the field for which they were trained.

Vocational Education and Equity

Vocational education has been seen as a way of making secondary education accessible to students from poorer socio-economic backgrounds. However researchers have pointed out that vocational education has played a significant role in the reproduction of inequality within society. The elites in society view any type of vocational education as being irrelevant to their needs since their power is linked to academic education (Lillis and Hogan 1983 p.95). As Davies has written:

> "Parents with any influence or cultural capital tend by and large to reject the official vocational education in favour of the true vocational curriculum which comprises the academic preparation and access into elite white collar jobs". (Davies 1993 p.432).

They do not place their children in the technical / vocational schools which are filled therefore with the 'rejects' from the academic schools and the children from poor socio-economic backgrounds. There is a constant danger that vocational education will be seen to "provide a second-class education and track some individuals - lower class or lower caste, racial minorities and women - away from academic education and access to jobs of the highest pay and status". (Grubb 1985 p.529). Experiments in providing more appropriate vocational curriculum such as the experiment of providing a rural curriculum in Tamil Nadu in India were abandoned not only because there was no demand for such an education but also because they came to be viewed as a "ruse to keep the under-privileged away from the prestigious academic curriculum". (Wijemanne 1978b).

In advanced industrial countries Loxley (1983), using data for Europe compiled by the International Association for the Evaluation of Educational Achievement (IEA), found that parents of students attending vocational schools differed in their level of educational attainment from those of students attending academic schools. Parents of vocational

students tended to be engaged in manual occupations and have less educated backgrounds than did parents of students attending academic programmes. The secondary vocational school population drew from families headed by predominantly blue-collar workers and persons with less than a full secondary school education. In Italy, for example, fathers of fourteen- and eighteen-year-old students in the academic track had an average of one more year of schooling than fathers of students in non-academic courses. Those finding are similar to profiles for students in the United States (Silberman 1978, Lecht 1979).

Vocational students are not a homogeneous group, however; some vocational curriculum programs are likely to attract a greater percentage of enrolees from families in which the father received more education than the typical father of a vocational school student. For example, in Italy, eighteen-year-old students enrolled in the technical field had a mean parental education two years higher than students in industrial fields, which implies that more of their fathers were foremen and craftsmen. Similarly in the Federal Republic of Germany, fathers of fourteen-year-old vocational students were generally in more highly skilled occupations than fathers of students in the academic track.

In assessing differences in the social background of both fourteen and eighteen-year-old vocational and non vocational students in eight industrialised nations, there appears to be a typical pattern : the education systems are highly differentiated, separating students by social class characteristics fairly early in their school careers.

Student Achievements in Vocational Education

Within advanced industrial societies such as the United States and Europe there are substantial differences in vocational and academic students' achievement, with non-academic track students performing less well than college preparatory students (Husen

1975). These variations often are attributed to differences in ability rather than social class. The consensus of educators is that offering either a vocational or an academic curriculum seems to produce gains for some students at the expense of others, but that these gains do not always occur for the same socio-economic groups (see Rosenbaum 1976 for a review).

Few researchers have studied vocational test results because they have been more interested in knowing how well students perform on universally accepted standard tests of verbal and quantitative skills, rather than on narrower, vocationally oriented subjects. Thus it is known that vocational-track students perform less well in academic pursuits than do students in college preparatory courses (Woods and Haney 1981; Wiley and Harnischfeger 1980; McPherson, Gray, and Raffe 1983) and this might be expected because the vocational curriculum is less tied to those pursuits than the academic curriculum. It is not known whether students in vocational programme outscore academic students on tests of vocational content. Again, no studies have ever attempted to measure these differences because tests of commercial or industrial content are not given routinely to students studying mathematics, science, and the humanities.

Studies of educational achievement have recently been undertaken in many developing nations, but they have seldom been directed at determining differences in achievement between students following vocational and non-vocational courses. What little evidence exists suggests that students in a vocational course do poorly in academic subjects, compared with students enrolled in academic programmes (Comber and Keeves 1973 (Thailand, India, Iran, and Chile); Fuller 1976 (India). Again, however, the tests measured achievement in maths or science, to which all students had had some exposure, rather than achievement in vocational subjects, with which the academic track students had little familiarity. Further, it is not known whether the lower test scores might be the results of students taking courses for which they are not well suited, pre-

selectivity based on ability grouping, or social class differences across curriculum programmes.

The Effects on the Demand for Higher Education

Governments use pre-employment vocational education as a means to divert young people into futures other than higher education or white-collar work. These policy packages generally contain three elements. First, students are channelled to vocational courses on the basis of educational achievement, by national or school examinations. Second, vocational schooling and training is intended to improve student attitudes towards skilled and technical jobs. Third, either by regulation or by the content of university admission examinations, vocational students are cut off from all or part of post-secondary education. In the first case governments cannot afford the higher education of all those who might qualify; in the second, they have an interest in reducing the pressures that unmet social demand for higher education can bring. In both cases governments seek to avoid an excess supply of university graduates, with high expectations. The issue is clearly of considerable political significance.

In Kenya, for example , half of the students with four years of industrial education courses in elite lower secondary schools selected a practical or technical job when asked to choose freely among desired occupations, while fewer than 20 per cent of students without such courses did so. However, there was very little difference in activities after graduation: 40 per cent of industrial education students and 43 per cent of the other students continued to higher secondary education (Lauglo and Narman 1988).

In countries where vocational schooling and training does not lead to the university or to more prestigious white-collar employment even when there are jobs, surveys show that students in vocational schools are often poorly motivated and try very hard to get reassigned to non-vocational, general courses that promise more desirable educational

and employment opportunities. In Kenya in 1986 nearly all students in industrial arts course wanted to go on to further education, and nearly two-thirds aimed at the university. In Bangladesh in 1988 the vast majority of students in vocational schools and centres did not want to be there (Middleton, Ziderman and Adams 1993 p.62). In Hong Kong in the same year, students preferred to pay for general education in private schools rather than to take up free places in government craft centres, recognising the greater flexibility of general education in the rapidly changing labour markets of a dynamic manufacturing and service economy (Cheng 1987).

The situation is even worse in those countries where formal pre-employment vocational education does not lead to wage employment, not to mention better earnings. In these countries, aspirations for general education can be powerful indeed, and Government policies aimed at blunting their force have proven problematic. The government of Somalia sought to reverse the status accorded general and vocational education by assigning the higher achieving students to vocational schools. Correctly perceiving the low demand for demand for vocational skills (1985 projections indicated a total of 325 jobs for the 11,452 people who graduated from secondary school each year), students continued to choose general education, and the vocational schools were under-utilised even as the number of vocational classrooms was being expanded (Chapman and Windham 1985). These cases illustrate the vocational school fallacy referred to earlier, a powerful and persistent deterrent to effective vocational education.

The evidence therefore indicates that contrary to policymakers hopes, when vocational education expands, demand for higher education does not necessarily contract.

1.6 THE CHANGE IN THE APPROACHES OF THE WORLD BANK

By the mid 1980s the World Bank had decided that this type of school-based vocationalisation was not effective. As the World Bank concluded "these 'diversified'

programmes are no more effective than academic secondary education in enabling graduates to enter wage or self-employment". (World Bank 1991b p.9). The World Bank agenda changed to the support of vocational training outside the formal education system. Psacharopoulos (1987 p.201) argued that the:

> "provision of skills in a given economy does not have to be school-based, and that even if it were school-based, it does not have to be in the mainstream of the educational system".

It was now argued that vocational education should be more employment based, so that the skills needed are inculcated into the trainees, and the process becomes more efficient.

The New Wave

However more recent studies have challenged the established orthodoxy that vocational education cannot be justified on cost benefit grounds. Recent studies have produced evidence far more supportive of vocational schooling. Studies carried out in the US, Israel and Hong Kong have found significant earnings advantages for vocational schools graduates working in vocational areas related to their spheres of study. These earnings advantages are much higher than those for vocational school graduates working in non-related fields and also to academic school completers. Fredland and Little (1980) contrasted the earnings of "users" and "non-users" of vocational education in the actual jobs of a sample of males from the National Longitudinal Survey in the US. Rumberger (1983) matched vocational education credits in school with current fields of work. Neuman and Ziderman (1991) examined the earnings effects of vocational school completers in "matched" and "non-matched" occupations in a sample of prime age males in Israel. Chung (1990) compared the earning of vocational schools "users" to those of "non-users" and academic school graduates in sub-samples of males in Hong Kong.

These studies report results that are far more favourable to vocational schooling than is the main thrust of the traditional evaluation literature. They show that when employment opportunities are available or growing and there is a match between training and available jobs, vocational schooling has produced higher productivity (China) and wages (Brazil) than general education (for a review of the evidence see Min and Tsang 1990; Arriagada and Ziderman 1992; Neuman and Ziderman 1991). More frequently however these favourable conditions are not present and net returns to vocational schooling are comparatively low. In low income countries where training capacity exceeds employment demand, studies have shown that a third to a half of vocational school graduates cannot find employment for as much as three years. The most comprehensive recent review of studies evaluating returns to vocational education shows that there is considerable variation in the conclusions of the studies. In 44% of the studies the rates of return to vocational education were higher than those for academic general education, in 37% lower and in 19% the results were inconclusive (Chung 1994, p.5073). There may be different reasons for the inconsistencies of the results. The target programmes under consideration are not the same ; the times and countries, and hence the economic contexts, of the programmes under study are not the same and finally, the criteria of measurement and the methodology of analysis are not the same.

1.7 WHY STILL THE EMPHASIS ON VOCATIONAL EDUCATION ?

Despite the scepticism expressed by researchers on the ability of vocational education to deliver its objectives, most societies still at least maintain their vocational education programmes or are attempting to expand them. As Grubb (1985 p.530) has written "the persistence of ineffective programs indicates that the power of vocationalization needs to be explained on grounds other than its effectiveness". The reasons for this power are difficult to ascertain. Psacharopoulos (1987 p.203) attributes this in part to the seductive appeal of the slogan of vocationalism. As he writes:

> "because of the inherently logical and simplistic appeal, Vocationalism will be with us for years to come, and more countries will attempt, *in vain,* to tune their educational systems to the world of work".

Grubb (1985 p.547-48) argues that vocational education is powerful because

> "it appeals to many groups, especially in its more general forms. It gains support from students in search of jobs; businesses in search of trained workers; educators in search of students and an important social function; and politicians in search of popular reforms that appear to address social and economic problems. The power of vocationalism also comes from its ability to serve several contradictory roles of education simultaneously. It promises to reward individual students while still addressing more collective goals like unemployment and national development, and to use public resources in support of collective goals while still mobilising them for the private ends of businesses and individual students. It can prepare students for an increasingly differentiated set of occupations while still allowing a common core of knowledge and values. It promises equality of opportunity through education within unequal societies where the pressures to reproduce inequality are even greater".

One has to acknowledge the importance of political considerations in these efforts at vocationalizing the curriculum of schools in the developing countries. However to see them simply as attempts by the dominant groups to reproduce the existing social order and maintain social control over the masses by moderating or reducing their "unrealistic" levels of aspiration would be too limited an explanation of why these attempts continue. Social control considerations are not the only explanation of why political leaders, including those in the developing countries, continue to press the case for vocational education. If one tries to ascertain why there is continuing faith in vocationalization among key educational policymakers in the developing countries, one

sees that there are some eminently logical and reasonable arguments which are either formally put forward or implicitly accepted for such programmes.

First policymakers still believe that one of the major functions of schooling is the development, among the young, of appropriate skills and attitudes, or competencies and commitments, that are needed to make the economic system function more efficiently. This is an assumption that has dominated and still continues to dominate much of the thinking about the content of education, supported by the human capital theorists who argue that the major contribution of education to economic development has been through its qualitative improvements of the manpower resources of a society. Educational policymakers seem to take it as axiomatic that if individual in a society has the "appropriate" skills, they will be more productive than those without such skills. Following this line of argument they have made what seems to be a reasonable conclusion- that if students at schools were provided with some useful, practical or vocational skills relevant to the needs of that society, they would be better equipped to contribute to its economic development. As they looked around their existing schools systems they saw that the type of education which students were receiving was "too academic", leading them to aspire to white collar jobs which were becoming relatively more difficult to obtain. Therefore, they felt that if schools could provide students with, or introduce them to, other more useful skills this would widen their range of occupational choices, make their aspirations more "realistic" and increase the possibility that such education/ training would better prepare them to meet existing manpower shortages in these societies.

Further, the skills and attitudes that such individuals would develop were likely to make them keener to enter the labour force even earlier and hence decrease the demand for more schooling - and it is this demand which has been rising faster than many countries can afford. This kind of preparation would also, it was believed, help those who still could not find wage employment to create jobs of their own and thus become self-

employed. So within this context it was felt that a more effective educational policy would be for schools to attempt to provide students with relevant practical or vocational training. This seems to be a reasonable assumption and it is difficult to fault the logic of the argument. It is this kind of reasoning which largely explains why educational policymakers in the developing countries keep returning to this solution. These attempts are usually revived whenever the authorities consider that there are too many school graduates unable to find the white-collar jobs for which they are looking. In fact, such efforts have been sighted more recently in many other developing countries where the output from their schools systems, especially at the secondary level and above, has been increasing faster than jobs in the modern sector. It has, of course, been the modern sector where "educated individuals" in these societies have traditionally looked for employment.

1.8 AN ANALYSIS OF THE PRESENT SITUATION OF VOCATIONAL EDUCATION IN LOW INCOME COUNTRIES IN SOUTH ASIA

In order to situate developments in vocational education in India, the focus of this study, it is worth examining developments in other low income countries in South Asia. There is considerable variation between these countries, as regards their stage of development, their economic condition, the state's approach to the provision of vocational education, and the problems which affect its implementation.

Economic Conditions

Many nations in the region are developing countries, which have only recently moved away from agriculture forming the basis of their economy, or are still largely dependent on agriculture, or mineral exploitation for national economic well being. On the other hand a number of countries in the region have significant manufacturing and service

sectors, and are moving to embrace the information society. Most countries have a target of becoming a developed country within the time frame of a decade or so.

All countries in the region are striving to improve their economic condition and are stressing the importance of a well educated and trained workforce, particularly at 'skilled worker' and 'technician' level. This is seen to be an important factor in providing the inputs necessary for rapid growth. In spite of strong economic growth by many countries in the region, and a shortage of educated and competent personnel in many key occupations, there is significant unemployment and under-employment in a number of economies, even at graduate level where there is a mismatch between economic demand and individual competencies.

Economic growth tends to be uneven within the countries. In many countries, those regions which rely on agriculture have tended to have lower rates of economic growth, more unemployment, and frequently lacked opportunities for education and training. In many situations population migration from rural to urban areas has created further difficulties as many cities have severe infrastructure problems. New arrivals to urban areas frequently lack the necessary skills for employment in many industries, other than in low paid unskilled work. Although some countries in the region have a large unskilled workforce which is paid low wage rates, as the economy of a country improves, this loses its advantage and becomes a problem for development.

Most of the countries are market driven economies, or are moving towards market economies, (in some instances from a centrally controlled model), and in the direction of economic systems more directed at manufacturing and the growth of a services sector. Government employment or employment with state controlled bodies is tending to become less significant, both in real terms, and also as a likely destination for school leavers. Running alongside these changes is the growth in trade between countries. Increasingly, countries in the region look outwards in their trading relationships, which

is reflected internally by the need to improve both productivity and quality. In striving to create an efficient economy, governments of the region seek to attract foreign investment and technological transfer from abroad.

Human resource development

Improvements to human resource development, both quantitatively and qualitatively, have been seen as essential for continued economic growth. Most countries in the region are attempting to direct human resource development in a targeted way to enhance national economic welfare, often devoting additional resources towards sectors of particular interest to a country in the short and long term.

Generally, there is a trend towards more general education and avoidance of early educational specialisation of career choice, where this is economically possible. Gradually countries in the region are attaining near universal attainment of primary education and despite economic constraints, most countries are making significant provision for secondary and tertiary education, including the provision of vocational education at secondary level or post-secondary level.

In spite of the very strong demand for entry to higher education institutions, there is a general inability and unwillingness of governments to supply sufficient funding for higher education to satisfy the demand for places. Graduate unemployment has emerged in a number of countries, which has led policy makers to argue for better provision of vocational education programmes directed at many of those who would otherwise wish to enter higher education institutions. Although funding of vocational education frequently represents a burden for individual countries, it is increasingly recognised more as an investment in future economic well being rather than simply a cost.

The existing Vocational Education System

There is considerable variation regarding the provision of vocational education between countries in the region. Most south Asian countries have a long history of colonial and/or feudal rule and only after independence, and particularly since the 1950s, has increasing attention been given to vocational education. The very first educational development plan of Pakistan envisaged technical and commercial education as an integral part of general education, with diversification of the secondary education curriculum. The National Education Commission in Bangladesh, appointed immediately after independence, recommended in 1972 the diversification of secondary education from Grade IX onwards, and expected 20 per cent of students to join the vocational stream. There have been a large number of organisations responsible for technical and vocational education in Sri Lanka, where initial efforts at vocationalization date back to the 1930s. In South Asian countries it is commonplace for education ministries to conduct vocational education programme of 3 years duration, and in some cases up to 6 years duration, as an alternative to more general secondary education which is directed at university or other forms of tertiary education.

In a number of countries vocational education is also undertaken subsequent to secondary or post-compulsory education, especially in polytechnics, and technical and further education colleges. In a number of countries, reflecting current World Bank thinking, institutions outside the control of the education ministry, offer training programmes, especially at the skilled worker level. However in other countries institutions of this type are still the responsibility of a Ministry of Labour or a similar ministry. Whilst some institutions of this type offer lengthy programmes that integrate industry placements, programmes are more likely to be of a short term nature. Industry based education and training tends to be provided on a limited basis in most countries in the region, directed at the acquisition of skills immediately useful to the enterprise and is rarely integrated with mainstream provision.

Available data on enrolment in vocational as compared to general secondary education in the countries in the Indian subcontinent, are presented for selected years in Table 1.1

Table 1.1
Enrolments in Secondary Education in Indian sub-continent
(%) of age group

Country	Year	% (*)	%(@)	Country	Year	%(*)	%(@)
Afghanistan	1951	48.1	51.9	Maldives	1970	0.0	100
	1965	14.5	75.5		1983	15.0	85
	1981	9.1	90.9		1992	0.95	99.5
Bangladesh	1976	0.5	99.5	Nepal	1983	15.0	85
	1985	0.6	99.4		1992	0.95	99.1
	1990	0.7	99.3	Pakistan	1950	0.7	99.3
Bhutan	1962	0.0	100		1960	0.2	98.8
	1970	5.5	94.5		1965	0.8	99.2
	1980	3.7	96.3		1976	6.4	93.6
	1985	37	67		1983	1.8	98.2
India	1950	7.3	92.7	Sri Lanka	1970	0.4	99.6
	1965	6.0	94.		1976	0.4	99.6
	1970	0.8	99.2		1990-91	1.3	98.7
	1975	0.7	99.3		1991-92	1.8	98.2
	1980-81	1.25	98.8	Burma	1980	3.7	96.3
	1983	1.4	98.6		1985	37	67
	1985-86	1.52	98.5		1990	0.5	99.5

* of students in vocational education. @ of students in general education.
Source: Calculated from figures presented in UNESCO Statistical Yearbook Paris 1969, 1975, 1980, 1986, 1996

Table 1.1 indicates that, despite the hopes of policy makers in the Indian sub-continent, the proportion of students in vocational education has not reached the target figures that have been set. Except in the Maldives, enrolment in vocational education nowhere constitutes, according to the most recent statistics available, more than 10 per cent of total secondary enrolments. Although in certain countries after particular initiatives there are dramatic rises in enrolments in vocational education these are usually followed by equally dramatic falls. Secondly, in a number of countries we find the proportion of students in vocational education to be consistently declining - in India from 7.3 per cent in 1950 to 0.7 per cent in 1975, in Afghanistan from as high as 48 per cent in 1951 to 9.1 per cent in 1981, and in Bhutan from 5.5 per cent in 1970 to 3.7 per cent in 1984. In other countries over the years there is either a marginal increase or relative stability in the figures.

There have been a number of case studies of vocational education in different countries in the region conducted under the auspices of the International Project on Technical and Vocational Education (UNESCO 1995, UNEVOC 1995a-r, Haas 1996). Wallenborn (1995 p.102-103) has identified a number of core problems in the establishment of technical and vocational education in Asian countries.

Financing Technical and Vocational Education and Training

In most countries the institutions of vocational education within the formal field of education - more often than not - must be supported entirely by the state, because the private sector is not willing to make funds available. Consequently, the state is mostly left with the sole responsibility for vocational education. It is obvious that sophisticated technical and vocational education and training commits large amounts of public funding (Bolina 1994). Societies are faced with difficult choices between providing nation-wide vocational education and establishing centres with a sufficiently high quality level.

These problems are also evident in the private sector. For a variety of reasons companies lack the financial funds for vocational training. In small firms this can often be attributed to the dearth of capital of the individual companies. Medium sized and large companies have often not yet grasped the eminent importance which vocational training has for productivity-boosting and quality enhancing measures.

The same also applies to the possible participation of companies in co-operative forms of training. In Vietnam, for example, only 30% of the costs are borne by the public sector, with the balance being defrayed by private industry which has to shoulder the bulk of the expenses for the German Dual System. Yet obviously, only very few Vietnamese firms are in a position or willing to assume the costs for such qualification schemes.

Management and Implementation Problems

A serious problems seemed to be the fact that much training fails to respond to real needs for training. There is often a mismatch between the types of occupations for which students are trained, and the jobs currently available. Also according to the opinions of employers and analysts, vocational schools' programmes curriculum and training facilities are often obsolescent. Training programmes are offered for occupations for which there is often no demand in the labour market. To compound matters, there is a gender-specific component : many courses are offered which are predominantly taken up by male youngsters while there are no or too few courses for women and girls in their principal areas of activity.

Such mismatches are, among other things, attributable to a lack of information on the labour market and the employment system. Information is frequently unavailable on the training needs of specific segments of the labour market and there is a lack of

systematic data on local labour markets and areas such as the gainful employment of women and their qualification needs.

A key problem in also played by the teaching staff in schools as well as in companies. Their pay is too low and often they have to look for a second occupation which in turn has a detrimental effect on their teaching activities. Moreover, quite often no adequately qualified teachers and instructors are available. 'Experts' who could assume such tasks in firms and schools tend to migrate into the areas of production where pay prospects are better. The vocational teachers themselves are using out of date information about production technology processes and techniques.

Apart from management problems complaints are also frequently voiced about the frequent lack of a national policy on vocational education. It is not accorded the priority which it should receive for the economic and social development of the country. This is also reflected in the continuing preference for white-collar jobs with wage and salary prospects not being sufficiently attractive for those who have successfully concluded such training.

Labour Market and Employment Problems

In many countries there is the paradoxical situation that many job seekers look in vain for employment, while at the same time in specific segments of employment qualified skilled workers cannot be found in the labour market. The explanation lies in the fact that often training is being offered in the wrong occupations and the training does not meet the requirements of the firms. The 'graduates' of the programme, trained remote from shop floor practice, are not accepted by industry.

Lack of Co-operation among Providers of Education

In many countries there is a lack of co-operation among providers of education which continues from the policy level right through to the implementation level. In most countries there are no effectively working institutions which could promote, monitor and guide this co-operation.

Insufficient Infrastructure

The forms of training, but above all the available supplementary equipment and the machinery used for training, are often obsolete. One contributing factor identified has been that there is no adequate maintenance of the machinery and facilities available for training purposes. Apart from that there is no long-term planning in place for various systems of further training nor for the replacement purchases of the machines and equipment necessary for vocational training.

Public expenditure of vocational education in India has been remarkably low compared to the other countries in the region. Pakistan, Bangladesh and Afghanistan invest more than one-fourth of secondary education expenditure in vocational education. However, this proportion has been in decline in almost all countries of this region.

1.9 IMPLEMENTATION ISSUES IN VOCATIONAL EDUCATION IN DEVELOPING COUNTRIES

Alongside the research challenging the untested hypotheses which were the basis of the expansion of vocational education, studies have also pointed to considerable implementation problems associated with the introduction of diversified curricula. In most of the developing countries including the South Asian countries where vocationalisation has been implemented, the common constraints have been : a lack of

clarity of the curriculum, problems in assessment, a shortage of teachers, the lack of attractiveness of vocational schooling to students and their families, the high costs, and difficulties for managers in funding the resources for effective curricula implementation.

Researchers have pointed to the need to distinguish between the rhetoric of diversification and its reality as experienced by teachers and students within the schools. Particular areas of concern have been the need for new instructional materials, teachers with new qualifications and associated workshops and laboratories with appropriate equipment. Popalzai and Hashmi (cited in Tilak 1988b p.253) noted in Pakistan that:

> "problems arose because of the meagre resources available. Teacher training was conducted on a mass scale and the quality of the teachers produced was not ideal. The shortage of competent teachers was a constraint on implementation. Suitable candidates for teacher training, with sufficient and relevant prior experience, were hard to recruit. The skills required are also so distinct from the general 'academic background' which teachers of other subjects had, that most practical subjects cannot easily be covered by teachers who were not trained in the subjects".

The limited resources for vocational education leads to few incentives being available to attract qualified and experienced teachers. This reduces the quality of teaching, and shows students how little society values the trade they are learning. Middleton, Ziderman and Adams (1993 p.110) showed that in Egypt salaries were so low that teachers in vocational schools had to hold two or more jobs, often at schools some distance from each other.

In this Chapter, the arguments for and against vocational education have been examined the research evidence as to its effectiveness has been evaluated. The different forms of vocational education at school and post school level have been identified and the reasons for the continuing appeal of vocational education have been considered. In

the final part a broad overview has been presented of vocational education in a South Asian context. In Chapter two a detailed examination will be made of the development of technical and vocational education in India with special reference to Gujarat.

CHAPTER TWO

TECHNICAL AND VOCATIONAL EDUCATION IN INDIA AND GUJARAT

2.1 THE DEVELOPMENT OF EDUCATIONAL POLICY IN INDIA

Introduction

In considering developments in any area of education in India it is important to keep in mind the complexities of the process of policy implementation (see Dyer 1994). All policy and plan initiatives are implemented through existing bureaucratic structures. There are two basic tiers of government: the central (union or federal) government at the centre; and separate governments in the 25 States and the 7 Union Territories (UTs). Centre and State / UT governments share responsibility for Plan and policy implementation, according to the three lists set out in the Constitution (Dyer 1994 p.243). Broadly, items of national importance such as defence or foreign policy are placed on the central list; items that are self-contained at the local level such as the state industry policy are on the State list; those which are essentially a State subject but which the centre considers to be of national importance are placed on the concurrent list.

In 1976 a constitutional amendment placed education on the concurrent list. The responsibility of the central government is for educational planning and policy, for co-ordination and maintenance of standards. The Ministry of Human Resource Development (which comprises the Department of Education, Culture, Youth Affairs, and Sports and the Department of Women and Child Development) has the principal responsibility in respect of education. In each state, there is a secretariat for education and separate directorates for higher education, school education, technical education,

and adult and non-formal education. The state-level administration lays down policy and regulates the educational system. States are divided into districts and at the head of the district education administration is a district education officer with several deputies and sub-deputies who together inspect and supervise the schools.

This set up has led to tensions which characterise policy implementation in a range of areas of education. Commentators (see Dyer 1994) have noted that under the complex financial arrangements the centre enjoys "superior expertise and control over formulas for central financial assistance to the states". (Baker 1976). Essentially the States depend on the centre for development funds while the centre depends on the States to implement the Plans.

The approach to policy implementation, is still heavily 'top down' which is reinforced by the bureaucratic nature of the system. Administrative procedures have altered little over time, officials are frequently transferred and corruption is 'well institutionalised and predictable'(Wade 1985 p.484).

In discussion of developments in policy implementation, it is also necessary to consider regional variations. Given the key role played by the States, the ways in which Indian states differ with respect to language, historical legacies, economic development, administrative capability and political effectiveness must be considered. Studies have shown that their educational systems vary in a number of important dimensions. For example, Rudolph and Rudolph (1972) use the terms Rimland and Heartland to aggregate states into two large sub national categories and attempt to analyse their distinctive characteristics. While there may need to be adjustments to these categories in the light of recent developments, the significance of regional variations are still important. In this chapter therefore the development of vocational education in India will be considered alongside examination of developments in Gujarat, a state with distinctive historical and cultural traditions.

Technical Education in India before Independence

The dilemma of whether to vocationalise or not has been with us for some considerable time (Psacharopoulos 1987). In India, from Wood's Despatch of 1854 there have been voices arguing for the development of vocational education with the debate over the nature of secondary education being a common theme of government reports and commissions. Wood's Despatch argued that secondary education should be "practically useful to the people of India in their different spheres of life". However the first major development in western education in India was the creation of the universities of Calcutta, Madras and Bombay in 1857 by governmental action. Prior to that the decision had already been taken for a higher education in the English language and the need to pass the matriculation examination prescribed by the universities set the distinctive seal upon upper secondary and collegiate training. The distinctive bias in this system of education was its literary and humanistic content with the bulk of university graduates trying for a position in the civil service or in the subordinate government services.

The domination of the universities on the curriculum of the secondary schools was commented on by the Hunter Commission of 1882-83 The Report notes that:

> "Throughout India high schools have hitherto been regarded ...it may be said exclusively - as preparatory schools for those who are to become students of the University .... the attention of students is too exclusively directed to University studies, and no opportunity is offered for the development of what corresponds to the 'modern side' of schools in Europe. It is believed that there is a real need in India for some corresponding course which shall fit boys for industrial or commercial pursuits". (Report of the Indian Education Commission 1883 p.219-20).

It also recommended that:

> (i) in the upper classes of high schools there be two divisions - one leading to the Entrance Examinations of the Universities, the other of a more practical character, intended to fit youths for commercial or other non-literary pursuits;
>
> (ii) that, when the proposed bifurcation in secondary schools is carried out, the certificate of having passed by the final standard, or, if necessary, by any lower standard, of either of the proposed alternative courses, be accepted as a sufficient general level of fitness for the public service". (quoted in Hartog 1939 p.45).

The recommendations were accepted and alternative examinations were organised in every province. However out of 23,000 candidates appearing for Matriculation in 1902-03 only about 2,000 appeared for the alternative examinations and 1,200 of these came from Bombay (Aggarwal and Agrawal 1987 p.21).

This failure to diversify the curricula of the secondary school became a central concern of the various Committees set up to examine Indian secondary education prior to Independence. The Hartog Committee (1939) reiterated many of the comments of earlier Committees. It said that :

> "In fact, the present type of high and middle English school has established itself so strongly that other forms of education are opposed or mistrusted. ...There is nothing corresponding to the exodus from many English secondary schools either into practical life or into a vocational institution. ..the figures .. are disturbing in that they point to the lack of other and more practical forms of training than those given in the high schools. The reason for the uniformity of the course in the middle English and high schools is not far to seek; it is the influence of the matriculation and all that this means to the Indian boy, both as an immediate qualification for (government) service and as a gate to a university course. In some provinces a School Final examination has been set up, distinct from

> the matriculation examination, with the double object of providing an alternative qualification for .... government service and of widening the secondary curriculum by permitting the inclusion of vocational and pre-vocational subjects. But this innovation has been to a great extent a failure". (Indian Statutory Commission 1929 p.104-105).

It argued for more preparatory vocational courses in middle schools and the establishment of specialist technical and industrial schools. The Abbot-Wood Reports on Vocational Education (1937) and the Report on post-war Educational Development in India (1944) (referred to as the Sargent Report) both reinforced the arguments for separate academic and technical education. The Abbot-Wood Reports led to the establishment of Technical, Commercial and Agricultural High Schools as well as Polytechnics. The similarities to the tripartite structure created by the 1944 Education Act in Britain are striking. On the whole it may be said that some effective measures to provide alternative vocational or pre-vocational courses at the secondary stage were taken for the first time, in the decade between 1937 and 1947. The progress however, was slow, partly due to lack of funds and partly due of lack of trained teachers and even in 1946-47, the type of high school which prepared the students for arts and science courses at university still dominated the scene (Nurullah and Nayak 1974).

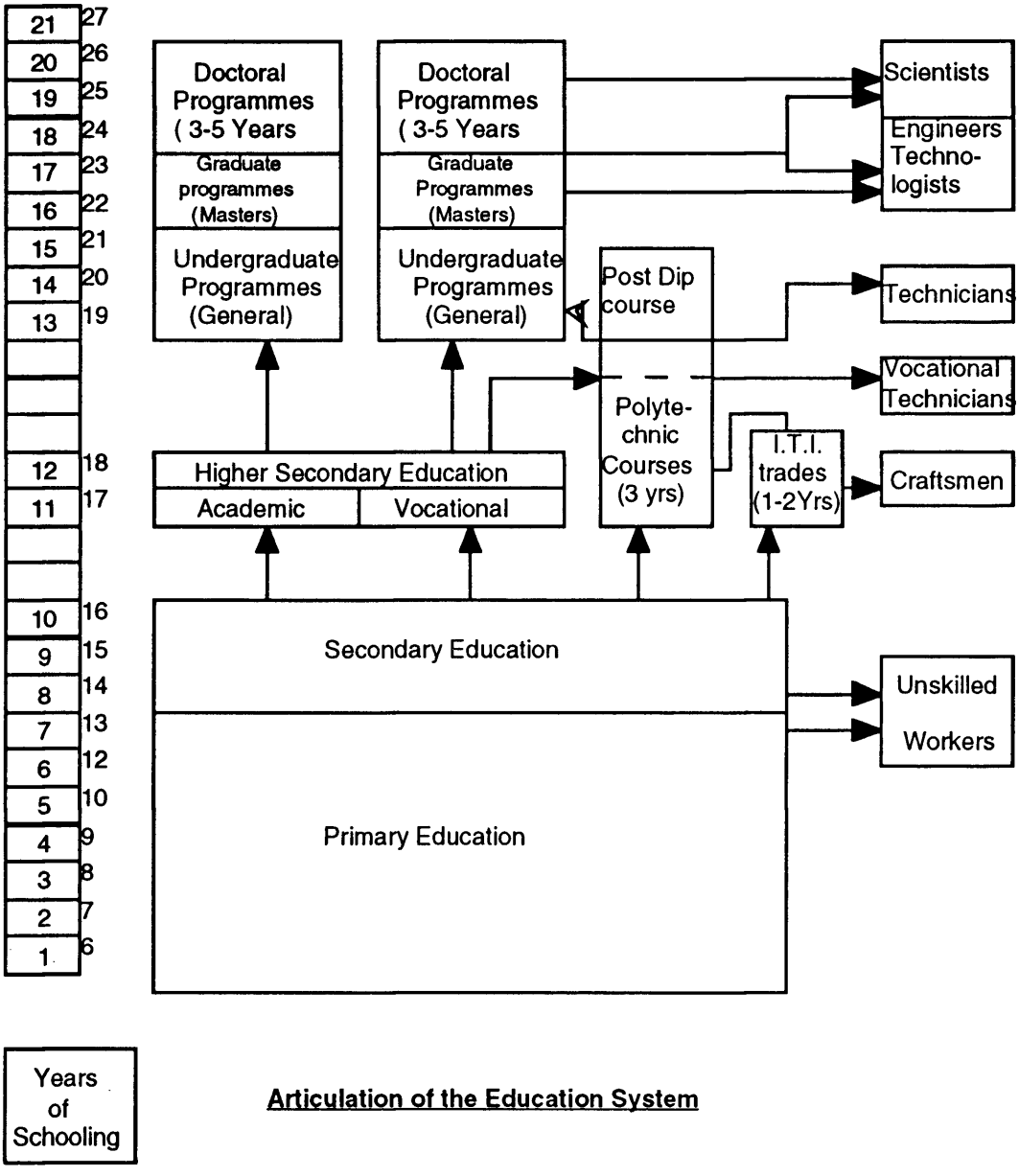
The Development of Vocational Education Post-Independence

As we have seen in Chapter One commentators have noted that technical and vocational education has generally been located in one or more of three distinct institutional settings; in formal schools; in post-school vocational training institutions where institutions are variously labelled as 'polytechnics', 'technical colleges' or more rarely 'junior colleges' (Middleton et. al. 1993 p.9) ; or in enterprises, whether large or small, industrial or commercial (King 1993) and that in most countries there is a dominant approach. In India post-independence the strongest tradition was the provision of technical education for technicians and skilled workers in separate post-school

vocational training institutions. This tradition is still the strongest in India as can be seen from Figure 2.1 which plots the Indian technical education system.

Figure 2.1

The Technical Education System in India

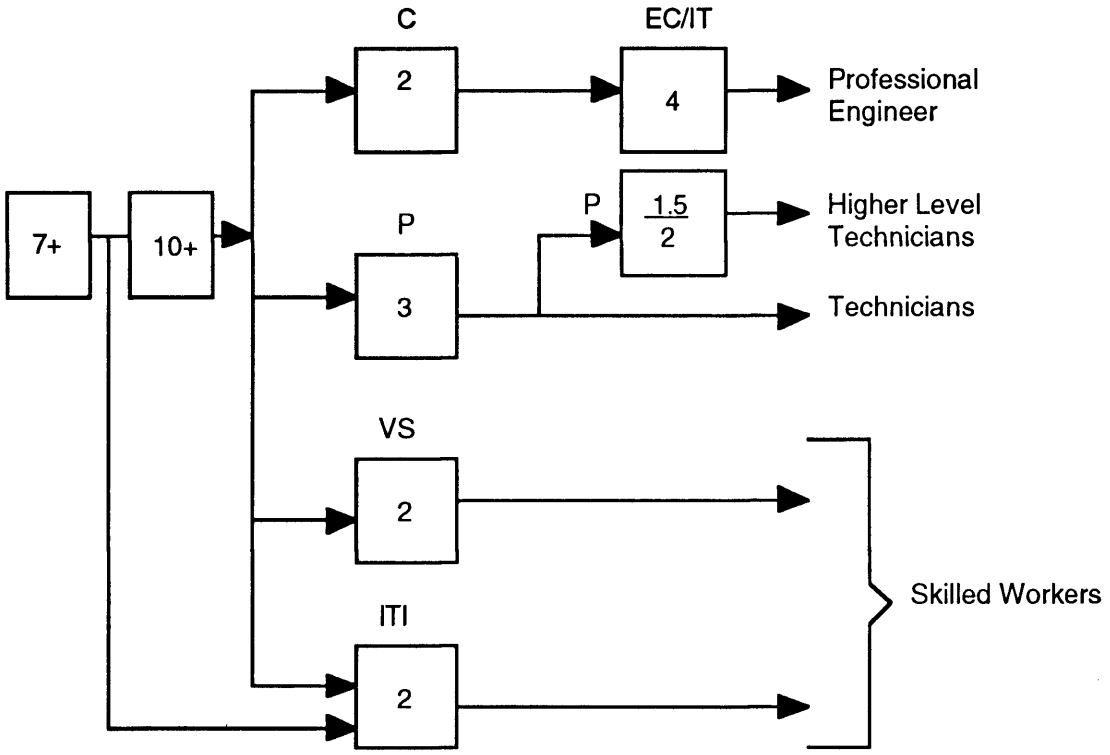


Source: adapted with some corrections from World Bank (1990) Staff Appraisal Report India Technician Education Project p. 141

The linkages between the forms of technical and vocational education and levels of entry to the labour market are described in Figure 2.2

Figure 2.2

Technician Education System in India



LEGEND
ITI - Industrial Training Institute
VS - Vocational School
P - Polytechnics
C- Colleges
EC/IT- Engineering Colleges / Institute of Technology

Source: adapted from World Bank (1990) Staff Appraisal Report India Technician Education Project p. 142

This publicly financed technical education system operates at three levels.

1) Certificate Level

There are specialist vocational institutions called Industrial Training Institutes (ITIs) which are run by the Directorate General of Employment and Training (DGET) in the Ministry of Labour. They offer Certificate level programmes and produce skilled workers. Students are trained in programmes lasting from six to eighteen months in about 140 trade areas. The entry requirements to these programmes are 7 years primary education and 10 years of basic education. These programmes attract students who are not academic high achievers and on completing the course hope to become skilled workers.

2) Diploma Programme

Another type of specialist vocational institution called Polytechnics offer Diploma programmes producing middle-level supervisory staff who hope to gain employment as technicians. Admission to this programme requires 10 years of basic education, and courses are of three years duration in the conventional disciplines of civil, mechanical and electrical engineering. About 20% of the Polytechnic offer programme in other fields such as computing. In all, programmes are offered in 90 engineering and non-engineering disciplines attracting high quality students who have often obtained First Class Secondary School Certificates.

3) Degree Level

There are three types of specialised vocational institutions offering degree level courses,

a) Indian Institutions of Technology (IITs)

b) Regional Engineering Colleges(RECs)

c) State Engineering Colleges(SECs).

The scale of the technical education courses can be seen from Table 2.1 which documents the number of students in the institutions.

Table 2.1
Number of Technical Education Institutions, Enrolments and Outputs 1986-87

Type	No. of institutions	Enrolments	Annual Output
Industrial Training Institutes			
a. Government	852	228,278	80,350
b. Private	1,035	98,831	25,327
Advanced Vocational Training School	22	10,000	10,000
Polytechnics (AICTE approved)	467	194,000	68,000
State Engineering Colleges	272	100,000	25,000
Regional Eng. Colleges	17	21,000	5,500
Indian Institutes of Technology	5	4,000	1,300

Source: World Bank 1991a. p.iv.

2.2 THE DEVELOPMENT OF DIVERSIFIED SECONDARY EDUCATION IN INDIA POST-INDEPENDENCE

In the early days of Independence there were continued arguments for establishing a different form of vocational education, diversified secondary education based in multi-purpose institutions. It was felt that only a small proportion of young people would be able to obtain places in Colleges of Engineering, Medicines, Agriculture and allied courses at college level, polytechnics and Industrial Training Institutions (ITI) after completion of the Secondary School Leaving Certificate (SSLC). The pressures from

expanding numbers in higher education courses and the growth of educated unemployment were felt earlier in India than in other low income countries.

It was not surprising therefore that the Radhakrishnan Commission (1948), the first major education commission in post independence India, emphasised the need for vocational education in schools:

> "to meet the variety of needs of our young men and women by giving vocational base to their courses while retaining at the same time their value in a system of general education as preparation for University Courses".(sic) (cited in Aggrawal and Agrawal 1987 p.30).

The Mudalliar Commission, examined secondary education which had been described as 'the weakest link' by the Radhakrishnan Commission (1948-49). The Commission argued that:

> "In the past, our education has been so academic and theoretical and so divorced from practical work that the educated classes have, generally speaking, failed to make an enormous contribution to the development of the country's natural resources and to add to national wealth. This must now change and, with this object in view, we have recommended that there should be much greater emphasis to create the productive work in all schools, and in addition, diversification of courses should be introduced at the secondary stage so that a large number of students may take up Agriculture, Technical, Commercial or other practical courses which will train their varied aptitudes and enable them either to take up vocational pursuits at the end of the secondary courses or to join technical institutions for further training". The Secondary Education Commission (Ministry of Education 1952-53).

In 1952 the Commission felt that at the end of the post-secondary stage, the student should be in a position, if he or she wishes, to enter life and take up some vocation. It argued that:

> "there should be a greater emphasis on crafts and productive work in all schools and that the courses in secondary schools should be so diversified as to prepare a large number of students for agricultural, technical, commercial and other pursuits. The vocational bias will not only create a new attitude to work but will promote technical skill, and efficiency at all stages of education so as to provide trained and efficient personnel to work out schemes of industrial and technological advancement".

The Commission again argued the case for multi-purpose schools which seek:

> "to provide varied types of courses for students with diverse aims, interests and abilities... endeavour(s) to provide for each individual pupil suitable opportunity to use and develop his natural aptitude and inclinations in the special course of studies chosen by him". (quoted in Kohli 1979 p.266).

The report of the Education Commission headed by Dr Kothari from 1964-66 was the first systematic attempt to formulate a policy for progressive vocationalisation of education in India. The Commission started from the uncontrolled meaningless rush to universities and the drafting of university students for a variety of occupations which did not require university education. The Commission suggested the restructuring of education and recommended distinct tracks of general and vocational streams at higher secondary level to interrupt the goalless ascent of youth on the educational ladder. The report argued for the expansion of vocational courses so that they represented 50 per cent of the enrolment and that diversification of studies should begin in Standards XI-XII. The Commission studied all the earlier recommendations and suggested a uniform system of 10+2+3 (10 years for 7 years primary education and 3 years of secondary schooling, +2 for Higher Secondary Schooling and +3 years for bachelor

degree in University) pattern of education. It considered a range of possible types of delivery with a continuing emphasis on the role of the polytechnics, the possibility of part-time study and developing linkages with industry. The report was accepted by the Parliamentary Resolution on National Policy of Education (1968) which emphasised the "terminal nature of the vocational stream of studies". Bhatt (1972) in a comparison of Indian and German approaches to vocational education reflected on the success of the German system and highlighted the positive attitudes to manual labour, the support of industry, the relevance of courses, the course materials and the curriculum balance between vocational and general education. He noted India was found wanting in all these respects.

The Central Advisory Board of Education (CABE) endorsed the Policy Resolution with its 10+2+3 pattern of education and re-asserted that the +2 stage of education should be regarded not merely as college preparatory, but also as a period for preparing an increasingly large number of school leavers for different vocations in life. The CABE entrusted the National Council of Education, Research and Training (NCERT) to prepare curricula and help the state governments in implementing vocational education. In 1976 the NCERT document " Higher Secondary Education and its Vocationalization" was presented to the country setting out a conceptual model and a framework for the implementation of vocational secondary education. The document observed :

> "the characteristic feature of the last two years of schooling (called the higher secondary) is 'diversification,' the aim of which is to avoid forcing students into the academic channel alone and to offer them opportunities to choose subjects and programmes of study in a much wider field of education in keeping with their aptitudes, interests and abilities, with a view to increasing their employability which would, in turn, provide society with personnel having a wide spectrum of knowledge and training for its own needs and upliftment (sic). It also aims at the reduction and elimination of frustration among the youth resulting from non-productive and aimless of education offered of present". (Higher Secondary

Education and its Vocationalization - Report of Curriculum Committee 1976, cited in Aggrawal and Agrawal 1987 p.40).

The document asserts that vocationalisation is a major transformation in education and cannot be achieved without important structural and functional changes. The scheme of implementation and its financial implications was presented by the Working Group on Vocationalisation of Education (1977) but it was implemented only by 11 states of the country. In 1979 The National Review Committee examined the NCERT documents, studied the syllabi and courses of the CABE and a few State Boards and gave detailed concrete recommendations in a report entitled "Learning to Do" on the introduction of vocational courses at the higher secondary state. In term of the meaning of vocationalisation, the committee observed :

> "the Vocationalised Spectrum of the Higher Secondary School is learning of a skill or a range of skills through study of technologies, related sciences, and farm or other practical work (sic). This Vocationalised learning must be distinguished from technical / vocational education imparted in the ITI's, technical high schools, agricultural or industrial polytechnics, where a certain level of skills as craftsmen or technician or extension agent is aimed at and attained". (Aggrawal and Agrawal 1987 p.47).

The Committee's general view of the role of vocationalized education was that while it was recognised that education could not of itself produce jobs :

> "...it (vocationalized education) makes it more likely for an individual to get a job or to be his own master by either starting a new productive activity or a service which may satisfy a felt need of the community. By broadening the educational horizons for the individual it enables him to reach higher levels of achievements through self-learning. Since the content and scope of vocationalisation must 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 here aims for next five years at increasing the employment potential

> of the people through education for self-employment, with emphasis on agricultural and related occupations, including tiny, small, cottage and agro-industries and through preparation for specific competencies in different vocations". (sic) (Aggrawal and Agrawal 1987 p.47).

Progress however has been slow and only a few regions in the country have implemented this policy. The coverage in the vocational stream in 1983-84, accounted for only 2.7 per cent of the total enrolment in vocational higher secondary school (Aggrawal and Agrawal 1987). In 1986-87 Sharma (1994) found the then intake in the vocational stream to be of the order to 72,000 students representing only about 2.5 per cent of the student population entering the higher secondary stage.

This has led to a number of national level working groups and review committees which have studied the problems in making progress in the implementation of the programme of vocationalization. The National Working Group on Vocationalization of Education, Ministry of Education (1985), led by Dr V.C. Kulandaiswamy undertook an extensive review of vocational education in the country and provided new guidelines for the development of programme. It formulated the concept of vocationalization at different levels and recommended the linkages required among different agencies running vocational programmes, the setting up of a well-knit management system, an action plan for the promotion of vocationalisation in the country and liberal central financial assistance for achievements of fixed targets. In addition, the Institute of Applied Manpower Research at New Delhi and similar state level agencies have studied and reported on the programmes and planning of vocational and technical education in the country. All these efforts have not been wholly successful in putting vocational and technical education on an even footing. A number of problems still persist in the field.

The National Policy on Education (NPE 1986) accorded high priority to vocationalization of education at secondary stage. Its fifth chapter, contains eight key

paragraphs about vocational education. It states that the introduction of systematic, well-planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganisation. These elements are meant to enhance individual employability, to reduce the mis-match between the demand and supply of skilled manpower, and to provide an alternative for those pursuing higher education without particular interest or purpose. Further it writes " Vocational education will be a distinct stream, intended to prepare students of identified occupations manning several areas of activity". It also suggested that the scheme should be made more flexible with students able to enter the vocational stream after standard VIII (the end of primary education). It also suggested that Industrial Training Institutes (ITIs) should be more effectively integrated into the larger vocational pattern. Employers in the private sector were encouraged to establish their own schools or courses and special steps were proposed to cater for the needs of women, rural and tribal students and the deprived sections of society. Graduates of vocational courses were to be given opportunities for professional growth, career improvement and lateral entry into courses of general, technical and professional education through appropriate bridge courses. Targets were proposed for vocational education with vocational courses covering 10 per cent of higher secondary students by 1990 and 25 per cent by 1995. It was anticipated that the substantial majority of the products of vocational courses would be employed or become self-employed. Regular review of the courses would be needed to ensure that they were providing an appropriate curriculum and meeting emerging labour needs.

The proposals were made against a set of perceived directional changes taking place in Indian society. Among the most important changes identified were:

1) the low success rate of students in grade X and XII public examinations making secondary education wasteful for nearly half the participating students;

2) the continuing problems of the pressure on the higher education system;

3) the high levels of educated unemployment with attendant problems of social discontent;

4) the greater emphasis on girls' education and the spread of non-traditional technology courses for girls;

5) the need to develop vocational courses to suit the rural social context so as to benefit the weaker sections of society.

Research from the period was indicating problems. Barooh (1986) discovered that the demand for technical manpower far exceeded supply and identified the following problems of vocational education from 1948 to 1978: defective selection procedures; out-moded syllabi; poor administration; inept management of examinations; improper utilisation of available facilities and dissatisfaction among teachers. Mohanty (1986) studying the growth of vocational education in the state of Orissa from 1947 to 1981 showed that the supply of vocational education and technical skills always fell short of the demand, that women's enrolment was low and there was sex-typing in enrolment for courses.

The Programme of Action (1987) prepared by the Ministry of Education on the Implementation of New Programme of Education in the Field of Vocationalisation accepted the model suggested by the Kulandaiswamy working group. A detailed framework for the programme of vocationalisation of education was formulated in consultation with experts and discussed in the conference of State Education Ministers held in April 1987, and a broad consensus was arrived at on various components of the programme. In the conference the state representatives were of the view that liberal financial assistance by the central government was necessary for implementation of this programme. Accordingly, it was proposed to commence a centrally sponsored scheme

of Vocationalisation of Secondary Education under which substantial financial assistance would be provided to the State Governments for implementation of this programme as envisaged in the NPE.

A Joint Council for Vocational Education (JCVE) was set up in April 1990 for policy formulation and co-ordination at the national level. A Standing Committee of JCVE was also set up in April 1990 to follow up on the decisions taken by JCVE. The JCVE is an umbrella body under the Ministry of Human Resource Development which incorporates representation from all existing vocational authorities / Councils and some State Governments. The JCVE has to perform the following functions:

a) planning and co-ordinating vocational programmes conducted by different organisations / Ministries.

b) laying down guidelines for the assessment of manpower needs, the development of vocational programme at all levels, the training of teachers and educational administrators, the development of textbooks and instructional materials etc.

c) developing schemes for creating vocational facilities at different levels.

d) evolving schemes for involvement of public / private sector industry in vocational education.

e) preparing schemes for undertaking programmes of vocational education for workers and imparting vocational education through non-formal programmes.

f) reviewing periodically vocational programmes

g) identifying and supporting non-governmental organisations engaged in vocational training of special disadvantaged groups.

A Bureau of Vocational Education was established to provide Secretariat support to the JCVE particularly in regard to planning programme development, laying down guidelines for co-ordination and implementation and / or overseeing the implementation of the programme of vocational education keeping in view the recommendations / decisions of the JCVE

The National Council of Educational Research and Training (NCERT) through the Central Institute of Vocational Education (CIVE), known as Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), functions at the apex level as a research and developmental institute. At various stages recognising the 'state of flux' of the vocationalization programme NCERT has tried to produce Strategic Plans for future development. In 1989 it developed the following goals for vocational education:

Goals

1. Improved instruction, self-pacing and individualisation of learning leading to better employability.
2. Development of vocational education system and personnel.
3. Creation and maintenance of a information base on vocational education.
4. Participatory guidance to states on effective on-the-ground implementation of vocationalization of education programme.
5. Increasing the social acceptability and popularising the vocational courses through in-built attractive structural features of the programmes.
6. Increase in vocational education opportunities for adults, out-of-school population and needy target groups.
7. Development of international understanding in vocationalization of education.

The NPE, as revised in 1992, set the target of achieving diversion of 10 per cent of the students at the +2 level to vocational stream by 1995 and 25 per cent by 2000 AD. Accordingly, a Centrally Sponsored Scheme of Vocationalisation of Secondary Education was launched in February 1988 with these objectives:

> "providing diversification of educational opportunities so as to enhance individual employability, reducing the mismatch between the demand and supply of skilled manpower and providing an alternative for those pursuing higher education without particular interest of purpose".

Under the scheme, substantial assistance is provided to States / Union Territories (UT) for introduction of vocational courses in classes XI and XII. This includes:

The creation of a separate management structure at the Directorate, State Council of Educational Research Training (SCERT), Districts and Schools levels for planning and monitoring of the programme.

Strengthening the technical support system for the research and development of curricula and instructional materials, textbooks and the training of teachers etc.,

Conducting of district vocational surveys for assessment of the labour market.

Provision of basic facilities for practical training in the school itself.

So far all states / UTs except few eastern states have joined the programme. In all 18,055 sections have been sanctioned in 6280 schools all over the country. These have created a capacity for diversion of about 900,000 students to the vocational stream which is 11.46 per cent of the enrolments at the +2 stage.

The Central Institute of Vocational Education (CIVE) is to provide technical and academic support to the programme. About 150 vocational courses have been introduced in six major areas i.e. agriculture, business and commerce, health and paramedical home science, humanities and others while 60 vocational courses have been notified under Apprenticeship Act.

Collaborative arrangements have also been made with some governmental departments undertakings such as the Ministry of Railways, Ministry of Health, Government Industrial Corporation (GIC), Life Insurance Corporation of India (LIC) etc. for work placement. Currently the emphasis is on the improving the quality of programme. The States have been advised to strengthen the management structure at various levels and identify experts to infuse professionalism into the programme, to introduce needs-based courses, to strengthen linkages with industry and also to increase on-the-job and apprenticeship training. An amount of Rs 4,100,000,000 has been earmarked for the vocational education programme during the Eighth Five Year Plan. The budget estimate for 1995-96 is Rs 820 millions.

The central government has claimed that a number of the important structural features necessary for successful implementation have been put in place (NCERT 1989 p.10-11). Among these have been the development of curriculum and instructional materials, the development of Guidelines, the organisation of training courses, the provisions of assistance and guidance to the states and the production of non-print materials. (for fuller details, see Appendix 1). These claims need, however, to be viewed with some caution and in the later section of the study the extent to which the support has influenced practice at the state, district and local level will be examined.

2.3 VOCATIONAL EDUCATION AT THE STATE

At the state level, a State Council for Vocational Education (SCVE) is established as the counterpart of the JCVE and functions as the overall policy-formulating and co-ordinating body for vocational education and training. In its functioning the SCVE must keep in view the guidelines of the JCVE. The Directorate of Education provides the administrative leadership to the vocational programme at state level to avoid duality of control at the school level.

In a recent attempt to clarify the scheme, the document "The Vocationalisation of Secondary Education" (1993) laid down the framework that was to be followed by the states when implementing vocational education. Particular attention was paid to the following areas.

(a) Selection of Institutions

Institutions selected for the introduction of vocational education were required to be well-connected i.e. have an electric and water supply, have a reasonably large campus to allow expansion, reasonable buildings and teacher support. The proximity between the selected institution and feeder schools and collaborative institutions would also have to be sufficiently close to be able to provide the desired intake of students (20 to 25) in each class.

(b) Selection of Course(s)

Selected schools would have to offer 3-4 vocational courses in specified subject areas so that the vocational wing in the school would be a viable unit and provide the desired flexibility of choice to students in keeping with their aptitude, interests and abilities. In the beginning, the selection of vocational courses would be on the basis of past

surveys, registrations on the Employment Exchanges (i.e. the unemployment register) and a general assessment of manpower needs made under individual district developmental plans.

(c) Assessment of Manpower Needs

In order to enhance the employment prospects of vocational students it was deemed necessary to make a reasonably accurate assessment of locally available and emerging occupations and the employment potential in the area. At the macro level an accurate assessment of such information was required for planning the curricula of the school, the provision of facilities and the recruitment of teachers. District vocational surveys would therefore be required for each institution, so as to assess the manpower requirements of the area, the range of available occupations, trends of emerging vocations, levels of competence required, the duration for which the demand is likely to subsist and the extent to which educational and training facilities are available in the neighbourhood. A team of experts identified in the SCERT at state level would organise these district vocational surveys.

(d) Curriculum

The curriculum should be needs based, socially relevant and lead to meaningful self employment or waged employment. It was not thought desirable to lay down a rigid structure for all types of vocational courses. The duration of the course would be between 1 to 3 years with the majority being of two years. Vocational theory and practice would constitute 70% of the course time and the balance would be devoted to the study of languages. In order to maintain national standards in a given vocation and promote larger mobility and acceptability of vocational products, it would be ensured that the curriculum would incorporate a core of identifiable competencies. PSSCIVE has developed Minimum Vocational Competencies Based Curricula for 82 vocational

courses. The Vocational courses introduced are grouped under the following major areas :-

* Agriculture
* Business and Commerce
* Engineering and Technology
* Health and Para-medical Services
* Home Science
* Services and others

(e) Instructional Materials

High quality instructional materials are viewed as necessary. Textbooks and workbooks are made available to students at subsidised rates, comparable to the rate for other courses.

(f) Equipment and Raw Materials

A grant of Rs 100,000 would be provided per vocational course for acquiring the necessary equipment / facilities. Out of this Rs 5,000 would be utilised for the purchase of relevant reference books for the library. The onus would be on the state government to bear the cost of extra classrooms and subject teachers required in the school. Also Rs 100,000 would be provided for the construction of workshops and laboratories for each vocational course. A grant of Rs 250 for a Home Science course per student per annum would also be provided.

(g) Selection of Teachers

The qualifications of full time teachers will vary with reference to each group of vocational courses and the availability of qualified people at the salaries prevailing in the

school system. Generally, however a Master's degree will be the basic qualification for the selection of vocational teachers. The selection procedure will be the same as that of regular teachers in other areas. Preference will be given to those who have experience in the practical field of the vocation. Part-time teachers will be obtained from amongst professionals in the concerned vocation, even though they may not have formal qualifications (degree / diplomas or a teacher training certificate) The Heads of the vocational school would be given a free hand to appoint part-time teachers within the guidelines laid down.

(h) Training of Teachers

A large number of courses of short-term teacher training will have to be organised to meet the requirements of training. The States would work out their requirements, vocational-wise and on the basis of this data the PSSCIVE will identify the institutions and check out a suitable training programmes for three to four weeks depending on the needs and requirements of the teachers in different vocational areas. The CIVEs will conduct short duration course for part-time teachers, depending on the needs and conveniences of these teachers. To meet the long term needs of qualified competent vocational teachers, special pre-service teacher training institutions will be set up.

(i) Practical Training and Apprenticeship

Practical work and training are very important components of vocational education and sufficient time would be allocated to this aspect in the course design. The practical ,work would be arranged in institutions such as Polytechnics, ITIs, Nursing schools and through "work benches" identified in commercial and industrial establishments, hospitals, farms etc. The Government departments themselves would be in a position to extend training facilities in many vocational areas and also provide part-time faculty for instruction as well as for monitoring the progress of the students at the work benches.

Training arrangements should also be located in the informal sector. Sufficient time on a half-day or full day basis , on the same days of the week, would be assigned as part of the school time-table for such practical training. Heads of institutions offering vocational courses would approach such institutions and enlist their co-operation in providing practical training to vocational students.

(j) Evaluation and Certification Continuous Assessment

The performance of students in vocational courses will have to be periodically and continuously evaluated. This should be conducted through the concerned full-time teachers of the course and by involving part-time teachers and the concerned collaborating agency. The school should keep a permanent record of such evaluation and the same should be annexed to the certificate awarded by the Board. Besides the internal evaluation suggested, the Board should also conduct a final external examination following the same mechanism as for the academic stream. In both the internal and terminal evaluation, assessment of practical skills acquired will be a very important component: to be judged primarily by practical work/assignments. Since the employability of the vocational graduates would depend largely on the reputation the school is able to make for its courses rather than on the State-wide picture, continuing and intensive efforts will be necessary to help each school develop its own identity and attain a level of excellence.

(k) Educational and Vocational Guidance

One trained graduate teacher in each vocational school should be trained in vocational guidance to help the school graduates in finding on-the-job training and or placement by working in collaboration with employers and the employment exchange. They should also maintain liaison between pupils, schools and the employment agencies at local, district and state levels and help the educational management/ administrators in

identifying the available infrastructure for vocational training in the neighbourhood. One trained counsellor should also be appointed at the district level to organise and run the career advice centre and assist the vocational guidance teacher at school level.

(l) Evaluating and Monitoring

Evaluation and monitoring will be an integral part of the programme. Monitoring of programme implementation will be done at various levels, namely national, state, district and institutional level. The feedback mechanism will ensure identification of deficiencies in instruction, administration, financial management etc. so that the functionaries at each level are able to take timely decisions to fill in the gaps in policy-making, direction, budgeting etc.

The participation of the community is crucial to the success of the programme. Parents, voluntary groups, employers would be persuaded to come forward to support the scheme conceptually as well as financially. Local self-government organisations, Non-governmental organisations, industrial establishments will all be involved in this task. The contribution of these institutions may be advisory, promotional, financial and / or resource mobilisation. Educational administrators / institutions would also have to be sensitised to the needs of the environment, to maintain regular contract with parents and voluntary agencies to disseminate information about vocational education programmes, employment opportunities etc.

This framework will be considered in the conclusion and the extent to which it haw influenced practice will be considered alongside an identification of areas still needing attention and development.

2.4 VOCATIONAL EDUCATION IN DIFFERENT STATES - SIMILARITIES AND DIFFERENCES

There are more than 150 courses in different states which are grouped under the major areas of agriculture, business and commerce, engineering and technology, health and paramedical medical, home science and humanities. There is a common design to the courses consisting of theory and practice relating to the vocational field, related subjects, language and general foundation studies which includes Entrepreneurship. In 1991-92 a total of 333,267 students were enrolled in the two year programme (Mishra 1996 p.5).

The evolution of the vocationalisation programme from 1977 has led to considerable variability in terms of administrative structure, curricular structure and institutional location (school or junior colleges) between the states. While much of this variability still persists, efforts have been made since the National Policy on Education 1986 (NPE 1986) to produce a general uniformity and a broad national pattern of vocational education in the plus two level institutions.

It was proposed that higher secondary vocational courses should have the following patterns.

Language(s) 10 to 15 per cent of curriculum time
General Foundation courses (Environmental Education, Rural Development and Entrepreneurship Development) 10 to 15 per cent of curriculum time
Vocational Theory and practice 70 per cent of curriculum time
The practice component of a vocational theory and practical course varies from 50 to 70 per cent.

The curricula and instructional material are developed by the Research and Development institutions concerned with each sector. For the higher secondary courses, the NCERT prepares exemplar instructional materials and the state also prepares their own instructional packages. The courses developed by NCERT are based on an analysis of job requirements, and have been grouped under a common title of "Competency Based Curriculum". Both curricula and instructional materials are developed in workshops in which the employment sector personnel, curriculum experts, subject experts and classroom teachers participate. So far, these materials have been prepared on the basis of a yearly programme rather than modules or units suited for instruction in a semester system. The semester system, though accepted in principle for implementation, is yet to become a reality in the school sector. All instructional materials, both print and non print, owned by NCERT are freely available for duplication and dissemination by the states.

The students are assessed at the end of two years by the Boards of Secondary / Higher Secondary Education in different states while internal assessment is conducted by the teaching faculty of the concerned school at periodic intervals. The internal assessment is only for diagnostic purpose and the student's performance is judged by his scores in the final examination conducted by the Board. Vocational courses are offered only in those institutions which are accredited by the authorised board in the given state.

Preparation of Vocational Education teachers has been an extremely weak area in the Indian system. So far no pre-service teacher education courses have been initiated by any institution and in spite of its accepted desirability, the cost and other complications have been major constraints. In-service education programmes have been developed by NCERT and followed by a number of states with financing by the central government. These programmes which are generally of four weeks duration are conducted in collaboration with expert teaching or research institutions in the respective fields and besides the theory and practice of education, pedagogical skills are also taken into

account. Attention has been paid to the training of the school administrators. In the past, efforts were made to provide orientation to all the concerned principals and supervisory personnel through a short term orientation course. With the establishment of Central Institutes of Vocational Education a renewed thrust is being given so as to provide orientation to more than 1,000 key functionaries every year.

Despite these efforts, commentators (see, for example Mishra, 1996 p.5-8) have pointed to continuing major differences between the states which can be explored at a variety of levels.

Administrative Domain

In the majority of states, vocational education is handled by the Department of Education which either uses all the personnel of the general secondary education system of the directorate (for example: Andhra Pradesh, Bihar, Delhi, Gujarat, Goa, Madhya Pradesh, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal) or by creating a separate section for vocational education within the department (for example : Himachal Pradesh, Orissa, and Rajasthan). However, in some states, the responsibility for administration has been assigned to a department other than general education (e.g. Haryana, Karnataka, Kerala and Maharashtra). These arrangements have their own historical and administrative justifications in different states and may remain so for an indefinite period of time. However, due to the guidelines of the Central government, most of the states in the first two categories are likely to develop separate wings within the directorates of secondary education with independent responsibility for vocational education.

Location of Vocational Courses

In the majority of states (e.g. Assam, Chandigarh, Delhi, Gujarat, Himachal Pradesh, Madhya Pradesh, Pondicherry, Punjab, Rajasthan, Tamil Nadu) the vocational courses have been located in the higher secondary schools or their counterpart institutions. In all these States and Union Territories the vocational courses are offered as a distinct stream at the plus two stage. However, in Uttar Pradesh the plus two stage is located in the Intermediate Colleges which provide both the academic and vocational streams. On the other hand, in states such as Andhra Pradesh, Karnataka and Maharashtra, the plus two stage is part of the college education and, accordingly, the vocational courses have been instituted in Junior / degree colleges. Yet, in certain other states e.g. Bihar, Kerala and Orissa the plus two stage is part of the college education with vocational courses generally not offered in colleges but in the high schools that have been upgraded to the plus two stage in respect of the vocational stream only. Haryana stands in a class by itself with the vocational courses being taught in separate Vocational Education Institutes. The Institutes do not have grades below the eleventh and do not offer academic stream courses. The diversity of location, however, does not pose any problem of equivalence with the education sector since all institutions in any particular state are accredited to the same Board/ Council in respect of both academic and vocational stream examinations.

Curricular Patterns

Prior to the NPE 1986 there were extreme variations in the curriculum design from state to state and even within the same state from course to course. But all the states which have received Central assistance after 1987 have broadly conformed to a common curricular framework with only minor variations. This includes the study of one or two language(s), a vocational course with seventy per cent of the total time and some foundation courses. Within this framework, variations may occur with regard to the

languages taught, the existence or otherwise of the general foundation course and related subjects. It is important to mention that many of the older variants of curricular scheme still exist on a large scale. This includes the Tamil Nadu pattern (vocational course - 40 per cent of the total), the Maharashtra pattern (vocational course -33 per cent of the total) and the Uttar Pradesh and Assam pattern (undefined and variable mix of electives). There have been some visible efforts on the part of these states to phase out the earlier patterns and to conform more closely to the national pattern.

Collaborative Arrangements of Teaching and Learning

Although industrial collaboration is a vital element of teaching and learning of vocational courses, its extent varies from state to state and from vocational area to area. For example, the health and paramedical courses are all invariably taught through collaboration with hospitals but business and commerce based courses are taught mostly through arrangements within the school. Many agriculture, home science and technology based courses are taught through collaboration but in many instances the collaborating institutions are polytechnics, ITIs and universities. In a few instances e.g. Kerala true industrial linkages have been forged. Within any given state one may see a wide diversity in the extent and nature of such collaborative arrangements.

2.5 EVALUATION OF VOCATIONAL EDUCATION

Evaluation has long been considered a critical area of vocational and technical education. Most of the early studies focused on vocational education in post-school vocational training institutions with only a limited number of the studies concentrating on the vocational senior secondary education. Of these studies the majority were concerned with the imbalances in provision with the students leaving the courses with inappropriate skills for the needs of the local and national economy. This imbalance was shown by a variety of studies on higher level technical and vocational education

(see, for example, Bapat (1985), Gogate (1985), Gharpure (1985), Bhale (1985) and Joglekar et. al. (1985)). Advant (1985) and Dhamankar (1985) discovered that there was an imbalance in the courses offered with a large number of colleges offering secretarial practice courses while the need was for courses in animal and crop sciences, small-scale and ancillary industries, mechanical repairs etc. The studies also pointed to the shortage of qualified staff to teach the courses.

In the 1980s a series of studies were carried out on the implementation of vocational education at the +2 level. Some of these studies were financed by the central or the state government and carried out by research institutes while others were research studies reported for higher degrees. They are reported in the publication entitled the Fourth Survey of Research in Education 1983-88 which covers research across all of India. Unfortunately this was the last of these publications so it is not possible to survey in as full a way later developments. The studies show many of the problems of the implementation identified by international studies discussed in Chapter One.

Reading the results of the studies shows that there was a marked variation between the states in the extent to which they had implemented vocational education at the +2 level. Soundaravalli (1984) and Gogate (1987) found that Tamil Nadu was only the state that had introduced vocational education on a large scale. In 1978 nearly 90 per cent of the schools were upgraded as higher secondary schools with academic and vocational streams. Vocational Courses existed in about 950 government and private schools in all the six vocational areas with as many as 67 subjects available. Gogate (1987) found that in Andhara Pradesh vocational education had been introduced in only 108 institutions out of 752 imparting education at +2 level. Gogate (1987) found in West Bengal that vocational education was only provided in 45 schools with only about 1% of students enrolled on the courses. There were also interesting variations in the locations of the institutions offering vocational education. Central Advanced Studies in Education (CASE 1985) found that in Karnataka, Maharashtra and Gujarat states the

institutions were mostly in urban localities while Gogate (1987) found in Andhra Pradesh that 35% of schools offering vocational education were in urban areas compared with 65 % in rural areas. Most of the schools teaching agriculture and technical subjects had a collaborative arrangement with some other higher educational institutions for the conduct of vocational education but co-ordination proved difficult.

CASE (1985) found that in Karnataka, Maharashtra and Gujarat states the majority of the students were male with evidence from Karnataka and Gujarat that most of them belonged to backward communities including scheduled castes, scheduled tribes, socially and educationally backward castes etc. There was variation across the states in the background of the students attracted to vocational education courses. In income terms, in Maharashtra and Gujarat the students were from high and middle-class families, whereas in Karnataka most of them belonged to poor families.

There was evidence from the studies that there was limited real demand for vocational education courses. Gogate (1987) in his study of Andhara Pradesh found in the twin cities of Hyderabad-Secuderabad that it was very difficult for students to gain admission to +2 classes in the General streams. Students therefore, gained admission to +2 vocational courses where places were available and switched to traditional courses after standard XII. The lack of demand was also found by CASE (1985) who noted no admissions rush and Soundaravalli (1984) in Tamil Nadu found students admitted to the vocational stream without any aptitude test.

CASE (1985) found most of the Principals had themselves no technical education experience and hence struggled to set up proper structures and processes. Soundaravalli (1984) found in Tamil Nadu that only 20% of the teachers were full time and 80% were part-time teachers with a fixed remuneration of RS 300 (£6) per month. Service conditions such as the lack of job security and the low salary were identified by Gokhale (1984) and Gogate (1987) in Maharashtra as keeping good teachers away from

work in this area. A number of studies reported difficulties in attracting experienced qualified and motivated vocational teachers. Gogate (1987) found in Andhara Pradesh that staff engaged in teaching vocational subjects were either inadequate or untrained. Regular teachers were relocated to the vocational stream and frequently had no heart in vocational education. In other states teachers were asked to teach vocational subjects alongside general education subjects as extra work. They were otherwise fully employed in the same institutions or in nearby institutions. The extra salary (or allowance) these teachers received was not commensurate with the extra work they put in.

Studies found that the syllabi provided were extremely lengthy and could not be completed in the time available (CASE 1985). Particular problems identified were lack of funds, lack of transportation and the lack of co-operation from teachers. Soundaravalli (1984) found that in half the schools in Tamil Nadu the instructional materials were inadequate while many studies (see, for example, Soundaravalli 1984, Gokhale 1984) pointed to the lack of involvement of local industry and commerce in support of the courses.

A number of the studies pointed to the lack of relationship between vocational education and the world of work. Soundaravalli (1984) found in Tamil Nadu that 37 per cent of graduates from the vocational course went on to higher education. The research generally indicated that the graduates of vocational education were not prepared for entry to the labour market. Gokhale (1984) found in Maharashtra that the courses failed to prepare students for any job or self-employment venture and that the government was not providing any help in finding a job or financial assistance to the students graduating from vocational education. Mohanty (1986) in Orissa found that the vocational course graduates were technically unsuitable for jobs as a result of their lack of adequate practical experience. Gogate (1987) found in Tamil Nadu that only 10% of ex-students from vocational education courses were employed. Students from poor families and

lower strata of society who had joined vocational education with the hope that they would get jobs were very frustrated. He found that graduates from vocational education did not get priority in admission to polytechnics and that graduates from the academic courses were favoured.

Recent evaluations of the system have pointed to slow progress being made towards the national targets. Indeed as we shall see later in the discussion of the development of vocational education in Gujarat there are indications that the limited progress made has been lost over the last few years. A number of factors have been identified as contributing to this limited progress: the absence of a well co-ordinated management system; the un-employability of vocational graduates; the mismatch between demand and supply; a failure to change societal conceptions of the value of vocational education and the absence of support after school for vocational graduates. Some authors (see, for example Aggarwal and Agrawal 1987 p.67) have argued that the most important factor has been the inadequate organisational structure.

> "While the factors contributing to rather unsatisfactory progress on the vocationalisation front may be many, the single most important aspect pointed out in the Programme of Action is the inadequate organisational structure to the task and its consequent inability of implement the accepted policies. At present the Management Systems for various sectors of vocational education work in isolation and with hardly any co-ordination either at the national, regional or state level". (Aggrawal and Agrawal 1987 p.67).

2.6 THE DEVELOPMENT OF VOCATIONAL EDUCATION IN GUJARAT

The State of Gujarat

The present state of Gujarat came into being on 1 May 1960. It is situated on the west coast of India. The 1991 Population Census lists the population as 41.3 millions,

representing nearly 5 per cent of the population of the country. Gujarat ranks tenth in respect of population and ninth in respect of area among the States of India. In respect of urbanisation, Gujarat ranks fourth amongst the states in India with the proportion of urban population at 34.5 per cent as compared to 25.7 per cent for the country. In respect of literacy, Gujarat ranks ninth amongst the states of India. The literacy rate in the State (excluding children in the age group 0-6 years) has increased from 49.9% in 1981 to 61.3% per cent in 1991. The literacy rate in 1991 was 53.1% for the rural areas and 76.5% for the urban areas.

Agriculture is the largest contributor to the State Domestic Product. It is the key sector from the point of view of employment generation and rural development. Animal husbandry, Dairying, Fisheries and Forestry have played a crucial role in supplementing the income of rural families. Gujarat is the main producer of tobacco, cotton and groundnuts in the country and provides inputs for important industries such as textiles, oil and soap. Gujarat is recognised as one of the leading industrialised states in the country. The trend of rapid development continues with the total numbers of registered Small Scale Industries (SSI) units exceeding 170,000 and large and medium units 1,500. The industrial structure in the state has been gradually diversifying with the development of industries such as chemicals, petrochemicals, fertilisers, engineering, electronics, textiles, pharmaceutical, dyes, cement, dairy, sugar. India's largest petro-chemical complex had led to the considerable development of petro-chemicals industry in the area. According to the 1990 Economic Census there are 1.5 million enterprises in the state accounting for about 6 per cent of enterprise in the country.

The Development of Vocational Education

In 1976 the National Council of Educational Research and Training (NCERT) document "Higher Secondary Education and its Vocationalisation" was presented to

the country setting out a model framework for the implementation of vocational education in the different states of India. In response to this document eleven states developed programmes of vocational education based in schools. Gujarat was one of these states, but as with many of the others, its first response was to strengthen vocational education in non-school establishments. In 1977-78 the State of Gujarat introduced vocational courses of one, two and three years length, the one year courses leading to certificates with the two and three years courses leading to diplomas and degrees. Most of the students studying diploma courses were 18 and above and already held Secondary School Leaving Certificates. The courses were run and financed under the jurisdiction of the Directorate of Education of the State. At first the Directorate prepared curricula in 19 subjects with the courses being run in 28 Polytechnics (Industrial Training Institutes ITIs) in different parts of the state. At this stage higher secondary schools were not involved.

Later under pressure from the central government, the state policy changed and vocational education was introduced into the Higher Secondary Schools. In 1982 some schools offered programmes in agriculture, commerce, technology and home science at the higher secondary level. Developments were given further impetus in 1986 with the introduction of the National Educational Policy which emphasised even more strongly the key role of vocational education based in Higher Secondary Schools. In response to this policy from 1987 there was a rapid expansion in the numbers of schools offering and students studying vocational education in Gujarat. 27 vocational courses have now been introduced in Gujarat, 5 in Agriculture, 6 in Commerce, 9 in Technical and 7 in Home Science (see Appendix 2 for a list of courses).

The Management Structure for Vocational Education

The organisational structure set up to implement vocational education in the state parallels the structure previously set up for managing general education. As in the latter

case, the state is divided into four zones with each zone further sub-divided into districts. District Vocational Officers are appointed to provide guidance at the district level but work separately from District Education Officers. There are four districts in the Ahmedabad zone, three districts in Gandhinagar, seven districts in Baroda and six districts in Rajkot.

Gujarat was relatively late in responding to the central government's recommendation that each state should set up a State Council of Vocational Education (SCVE). Indeed it was not until 1994 that such a body was created. The main role of the Council is to act as an advisory body helping the State government make progress in vocational education. The Council works under the chairmanship of Minister of Education of the State. There are 24 members from government, universities, schools, industry, unions and other related institutions. The Council was set up to work for two years with the main objectives of:

1. setting criteria for selecting schools/institutions in the state for vocational education;

2. providing guidance to District Vocational Education Committees;

3. assessing self employment and wage employment opportunities for vocational students in the state;

4. discussing with financial institutions the provision of loans to graduates of vocational course who desire to start their own businesses.

This is the current organisational structure and given the current concerns, the life of the State Council of Vocational Education (SCVE) is likely to be extended into the foreseeable future.

Curriculum Structure

In Gujarat the National Council of Education Research and Training (NCERT) curricula design has been followed. Nearly all the 27 curricula introduced in the state have been versions of curricula designed at the national level.

The curriculum pattern operating since 1987 is shown in Table 2.2

Table 2.2
The Curriculum Pattern in Vocational Higher Secondary Schools

Details	Number of papers	Practical marks	Theoretical marks	Total Marks
1. Vocational subjects	Three papers each paper carrying 150 marks	80 (240)	70 (210)	450
2. Entrepreneurship	One Paper	50	50	100
3. General Foundation Subject	One paper	00	100	100
4. Language: English / Hindi /Gujarati	One paper	00	100	100
OVERALL	Total Marks	290	460	750

Source: adapted from Annual Administrative Report 1994-95 Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad p.12

The Gujarati curriculum pattern differs from some of the other states, for example, in terms of the pattern of vocational subjects. In Gujarat the assessment pattern contains 60% devoted to vocational subjects while in Tamil Nadu it is 40% and Maharashtra 33%. However, it is the Gujarati pattern which is closest to that recommended by the Centrally Sponsored Scheme (CSS).

Schools operate 45 periods in the week with each period lasting about 40 minutes. The details of time allocation per subject are as follows.

Table 2.3
Time allocation per subject per week in Vocational Higher Secondary Schools

Name of subject	Time in Hours	Percentage
1. Language	4	13.3
2. General Foundation Subjects	4	13.3
3. Entrepreneurship	4	13.3
4. Three Vocational Subjects	18	60

Source: adapted from Annual Administrative Report 1994-95 Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad p.13

For Language and General Foundation subjects all the time is allocated for theory work while in Entrepreneurship two hours are allocated for theory with the rest available for practical work. Each vocational subject has three hours for both theory and practical work. Any training outside the schools in fields, farm or factory required by the vocational trade is included in the practical time allocation for the vocational subjects.

Admission to vocational courses in Higher Secondary schools is open to all students who have passed either :

1. the Secondary School Leaving Certificate (SSLC) examination conducted by the Gujarat State Secondary Education Board;

2. the Indian Certificate of Secondary Education Examination conducted by the Council for the Indian School Certificate Examination;

3. any other examination recognised as equivalent to Gujarat S.S.L.C. Examination

The Gujarat Government has prepared separate recruitment rules for vocational teachers. The institutions can appoint two full time teachers and one full time instructor per vocational course. The minimum qualification and experience prescribed for the appointment of full time teachers in technology are a 2nd class diploma in engineering and for other groups a 2nd class Masters degree. If teachers possessing these qualifications and appropriate experience are not available the Department of Education may grant relaxation on the basis of merit of each case. All teachers and instructors have 21 hours work load in each week. The training programme for vocational teachers is organised by the Gujarat Textbook Board.

Assessment Structure

At the end of standard XI all students take an internal school assessment consisting of term papers, practical assignments, participation in practical activities, punctuality in the class etc. This internal assessment of students is conducted according to rules and regulations supplied by the State Government and the Higher Secondary Board (HSC). For conducting practical tests, the tools used by the teachers are practical performance tests and oral questioning, assessment of finished products and the student's journal. At end of standard XII a public examination is taken. Up to 1992 both the theory and practical elements of the assessment were conducted by the Board. From 1992 the practical assessment has been undertaken by the school and the marks passed to the Board.

Overall students have to achieve more than 35% in all subjects to pass. Candidates who obtain above 70% are awarded a Distinction, between 60% and 70% First Class, 48-60% Second Class and less than 48% Third Class. Those who do not pass first time may take the examination again in the following year.

2.7 THE 'GROWTH AND DECLINE' OF GUJARATI VOCATIONAL SCHOOLS

In examining developments in vocational education in Higher Secondary Schools it is necessary to start by considering the courses alongside the more 'traditional' General and Science courses running in these schools. Table 2.2 presents changing patterns of enrolment in Standard XI programmes in Higher Secondary Schools in Gujarat.

Table 2.4

Results of Secondary School Certificate Examination and Enrolments in Standard XI Programmes in Higher Secondary Schools in Gujarat

Year	Appeared in Secondary School Exam at 16	Passed Exam-ination	Percent-age	Enrolment in General (including Science) courses N %	Enrolment in Vocational courses. N %
1989-90	491,900	254,245	51.69	183,863 72.3	10,510 4.1
1990-91	508,455	250,790	49.32	183,423 73.1	12,618 5.0
1991-92	549,761	301,060	54.76	206,771 68.7	13,827 4.6
1992-93	532,684	332,395	62.40	253,513 76.3	15,211 4.6
1993-94	530,179	283,420	53.46	234,527 82.8	15,898 5.6

Source: Constructed from the Educational Statistics Information Report 1994-95p34-38 Published by the Commissioner, Higher Education, Gujarat State, Gandhinagar and the Annual Administrative Report 1994-95 p.6, Published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan, Ahmedabad.

Table 2.4 indicates that despite a general increase in the proportion of students 'staying on' after passing the Secondary Schools Examination Certificate, the vocational course has shown a markedly smaller growth rate than the general course. Moreover there is still a sizeable group of students who have passed the Secondary Schools Examination Certificate who are not 'staying on' beyond Standard IX.

Students are still opting to join the General courses despite the indications that such courses are more difficult for the students to pass (see Table 2.5).

Table 2.5

Higher Secondary School Examination Results - Science, General and Vocational Stream in Gujarat State 1989-1994

Year	Science Stream	General Stream	Vocational Stream
	% of students passing	% of students passing	% of students passing
March 1989	34.51	59.80	66.01
March 1990	33.23	60.85	75.62
March 1991	33.22	57.37	66.80
March 1992	51.98	76.20	73.23
March 1993	40.46	72.63	74.67
March 1994	42.71	69.73	72.65
Average Result	39.35	66.1	71.5

Source: Constructed from the Educational Statistics Information Report 1994-95 p.23-25, Published by the Commissioner, Higher Education, Gujarat State, Gandhinagar and the Annual Administrative Report 1994-95 p.6-7, Published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan, Ahmedabad.

The actual number of schools approved to run vocational courses and the number of students enrolled in vocational courses has shown considerable variation over the years as can be seen in Table 2.6

Table 2.6

Number of Higher Secondary schools in Gujarat approved to run Vocational Courses and number of students enrolled in Vocational Courses

Year	Nos. of Schools	Students in Standard XI	Students in Standard XII	Total number of students	Average number of students in each school
87-88	47	2780	-	2780	59.1
88-89	131	8280	1674	9954	76.0
89-90	179	10510	4878	15388	86.0
90-91	216	12618	7763	20381	94.4
91-92	244	13827	10268	24095	98.8
92-93	264	15211	13577	28788	109.0
93-94	274	15898	17464	33362	121.8
94-95	284	15598	17073	32671	115.0
95-96	80	6425	6332	12757	159.5

Source: adapted from Annual Administrative Report 1994-95 Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad p.1 and personal communication from the District Educational Officer Ahmedabad District

A rapid period of expansion in the number of schools approved to undertake vocational education took place between 1987-1992. In 1987-88 there were 47 schools with 2,780 students. The number of schools expanded at a considerable rate reaching a peak of 284 schools in 1994-95 and 33,362 students in 1993-94. Since then there has been a large fall in student numbers as well a significant decrease in the number of schools offering vocational education. This can be linked to a change in state government with the Bhartiya Janata Party (BJP) taking power from the Congress Party. The BJP introduced a programme of change focusing on education, agriculture, commerce and trade. Particular attention was paid to vocational education and to concerns that had been expressed in the media over possible misuse of grants and funds and irregularities

surrounding appointment and employment of teachers. A system was instituted whereby any person could give information anonymously on suspected misuse of vocational education funds. A policy of inspection was introduced whereby schools received no notice of inspection by state officials who themselves were appointed from outside the education service. In a number of cases the police became involved where large scale misuse of funds was found and some cases are still ongoing. There was a rapid reduction in the number of schools offering vocational courses with principals and management committees concerned about the reputation of schools and fearful of the consequences of being linked to misuse of funds for vocational education.

When the increased enrolment in vocational courses is viewed alongside enrolment in general Higher Secondary School courses i.e. those enrolled in academic courses and aspiring to enter higher education, the achievements of vocational education look even less significant. As can be seen from Table 2.4 even at the maximum period of development of vocational courses, only 5.6% of students who passed the Secondary School Examination were enrolling in the Vocational Higher Secondary Schools courses whereas over 80% of those students passing were enrolling in General Higher Secondary School courses. Despite the large increase in the number of students who 'stayed on' in school having successfully achieved the Secondary School examination, there has been no dramatic increase in the numbers studying vocational courses.

The figures indicate that despite the expansion Gujarat has been unable to meet the targets that were set by the National Policy on Education for 1990. Furthermore as a result of the recent attempts to clear up the corruption in the system, the vocational programme is now at its lowest since 1988 in terms of numbers of students and numbers of courses.

Student Progress

There are difficulties in assessing student achievement in the vocational stream. 'Official statistics' from varying government and state sources are often different and there are major problems arising from the 'bogus' students included in the statistics. The problems can be seen in the following Table 2.7 which charts the progress of vocational students from 1987-88 to 1995-96.

Table 2.7
Year-wise failure of vocational students
1987-88 to 1995-96

Year	Standard XI	Standard XII	Differences (Standard XII - previous year's Standard XI)	Difference in %
87-88	2780	---	---	---
88-89	8280	1674	- 1133	- 40.8
89-90	10510	4878	- 3402	- 41.1
90-91	12618	7763	- 2747	- 26.1
91-92	13827	10268	- 2390	- 18.9
92-93	15211	13577	- 250	- 2.00
93-94	15898	17464	+ 2253	+14
94-95	15598	17073	+ 1084	+ 6.8
95-96	6425	6332	- 9266	- 59.4

Source: Annual Administrative Report, Published by Joint Director (vocational) 10+2 Patnagar Yogna Bhavan, Ahmedabad. p.1

Examining the above table there are puzzling differences in the relationships between enrolments in Standard XI and Standard XII. In 1987-88, 2780 students joined in Standard XI but by Standard XII in 1988-89, only 1647 students were studying. This

means that 1133 students either failed in the examination at the end of Standard XI or had given up study for other reasons such as obtaining a job or getting married. However in the years 1992-93 there were 15211 in Standard XI while there were 17464 in Standard XII by 1993-94, an increase of 2,253. The suspicion must be that at least some of these students were 'created'.

Table 2.8 shows the numbers of students taking and passing the examination in the different vocational courses from 1989-94.

Table 2.8
Total numbers of students taking and passing the Vocational Higher Secondary Examination in Gujarat 1987 To 1995

Name of Course	Numbers. of students taking exam	Numbers. of students passed exam	Percentage of students passing the exam
Commerce	33,703	21,857	64.85
Technical	10,987	6,456	58.76
Home Science	18,195	16,371	89.97
Agriculture	4,164	3,071	73.75
Total	67,049	47,755	71.22

Source: Annual Administrative Report 1994-95 p.6-7, published by Joint Director (Vocational) 10+2 Patnagar Yojna Bhavan, Ahmedabad.

It can be seen from Table 2.8 that the most popular course is Commerce while Agriculture, despite being the major occupation in the state, is the least popular course. The course with the greatest success rate is Home Science while the Technical course has the lowest success rate.

There are major differences in the gender composition of the courses (see Table 2.9)

Table 2.9

Gender differences in Vocational Education Courses in Gujarat

Name of Course	Total Numbers Students	Total Numbers. Boys with %	Total Numbers. Girls with %	Difference (%)
Commerce	5,025	3,633 72.0	1,392 28.0	44
Technical	2,385	2,101 88.0	284 12.0	66
Home Science	4,597	36 1.0	4,561 99.0	98
Agriculture	833	736 88.0	97 12.0	76
Total	12,810	6,506 50.7	6,304 49.3	1.4

Source: adapted from Annual Administrative Report 1994-95, Published by Joint Director (vocational) 10+2 Patnagar Yojna Bhavan, Ahmedabad p. 11-14

An examination of different courses shows that Home Science is female dominated while Agriculture, Technical and to a less extent Commerce are male dominated. As yet little concern has been expressed by the State Government over this pattern.

There are also differences in the proportions of students from different castes in the vocational programmes in the Higher Secondary Schools. Table 2.10 examines the caste origins of students in the commerce, science and vocational courses in Gujarati Higher Secondary Schools from 1991 to 1993. Unfortunately the official statistics divide the students on the basis of a limited set of categories. For example, in the Other category we find both the General Caste and the Socially and Educationally Backward Caste. This makes interpretation of the data difficult but it is evident that students from Scheduled Caste backgrounds are over represented in the General and Science streams compared with the Vocational stream.

Table 2.10

Number and proportion of students from different castes studying different courses in Higher Secondary Schools in Gujarat 1991-93

Stream and Caste	September 1991		September 1992		September 1993	
General Stream	N	%	N	%	N	%
1. Scheduled Caste	25,067	9.3	33,037	8.4	33,219	9.7
2. Scheduled Tribe	23,860	8.8	34,871	10.0	41,888	12.2
3. Others	221,966	81.9	281,296	81.6	267,157	78.1
4. Total	270,893	100	349,204	100	342,264	100
Science Stream						
1. Scheduled Caste	5,606	7.5	5,409	7.3	5,447	7.7
2. Scheduled Tribe	3,778	5.1	2.036	2.7	2,029	2.9
3. Others	65,193	87.4	66,645	90.0	63,537	89.4
4. Total	74,577	100	74,090	100	71,013	100
Vocational Stream						
1. Scheduled Caste	985	4.1	2,885	10.0	3,497	10.5
2. Scheduled Tribe	3,018	12.5	2,644	9.2	2,436	7.3
3. Others	20,091	83.4	23,259	80.8	27,429	82.2
4. Total	24,095	100	28,788	100	33,362	100

Source: adapted from the Educational Statistics Information Report 1994-95 p.14, published by the Commissioner, Higher Education, Gujarat State, Gandhinagar and the Annual Administrative Report 1994-95 p.17-18, Published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan, Ahmedabad.

Progress after the course

Attempts have been made to identify the destinations of students after completion of the Higher Secondary Certificate (Vocational). There are problems in comparing different studies but the general conclusion that can be drawn from all the studies is that the

majority of students in the vocational courses go to higher education not into work. Despite the emphasis on Entrepreneurship only 11.2% are self-employed even with the available support system.

Table 2.11
Student destination after successful completion of Vocational Higher Secondary Examination

Student Destinations	Percentage of students placed to the total students passed	
Nos. of Students placed	17483	64.35
Nos. of Students in apprenticeship	1964	11.2
Nos. of Students self-employed	2101	12.0
Nos. of Students wage-employed	1359	7.8
Nos. of Students gone for Higher Education	12059	69.0
Total	17483	100

Source: Shah and Shah (1996 p.7)

27167 students have passed in the seven years from 1989-1995. Of these 17483 i.e. 64.35% of the students have entered either apprenticeship, wage employment, self employment or higher education. The disappointing figures are that only 7% of those passing entered apprenticeship, nearly 8% self employment and 5% direct employment. The majority of students who are placed on passing enter higher education. Thus the original objective of linking success in the vocational stream with direct entry to the world of work has not yet been realised. With 45% of students still preferring to go for study in higher education, often in an 'academic' subject area, the status of vocational education has still to be established.

A review of the development and the current position of vocationalisation of higher secondary education in the state reveals that it made some progress up to 1994-95 in

terms of increasing the number of students enrolled. However vocational education failed to attract a sizeable segment of the student population to its varied vocational courses. Indeed it may be that the gains made in the early 1990s were in fact largely a product of institutions 'inventing bogus students'. The current situation in 1996-97 with the recent collapse in numbers associated with the attempts to control the number of 'bogus' students shows very little increase in the number of students in the vocational stream over the decade. Furthermore studies of the data available on student progress after completing the course shows that only relatively small proportions enter employment, self employment or apprenticeship. The majority enter higher education, a route it was hoped would diminish in importance with the growth of vocational education.

Now is an appropriate time therefore for an examination of vocational education in Gujarat with a view to making recommendations for the future. Vocationalisation of senior secondary education has now been in place for at least 10 years and a review of the original objectives in terms of the current situation is timely. As can be seen from the above detailed examination of the available 'official statistics' relating to the vocationalisation of senior secondary education in Gujarat, these are available but in some respects need to be treated with caution. In this study an attempt is made to redress the lack of detailed information on vocational education by a study of the major participants' views of vocational secondary education in one state, Gujarat. It is hoped that by examining the diverse views held by those involved with vocational education that recommendations for strengthening the position of vocational education in India and Gujarat, in particular, can be identified.

The next chapter contains a discussion of the approach taken, the methods chosen and the ways in which the decisions were informed by the context in which the research was to be undertaken.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter, I discuss the choice of methodology adopted for the study of vocational education in higher secondary schools in Gujarat. I describe the reasons for the choice of focus, why a survey approach was adopted, the design of the research instruments, the field work process and the analysis of the data.

Researchers working for the World Bank (see, for example, Hunting, et. al. (1986), International Project on Technical and Vocational Education (UNEVOC) (1995s), UNESCO (1996) have attempted to identify from literature reviews the key elements of effective vocational education programmes. They have further constructed evaluation checklists so that programme managers can evaluate their progress and system managers can assess how effective their developments have been. In constructing their approaches to evaluation, they have struggled with the notions of effectiveness and efficiency. Efficiency can be defined in a variety of ways. It can be defined in terms of academic performance - which may not be fully measurable by test or examination scores, including as it does increases in skills, changes in attitudes, cognitive development, and acquisition of knowledge. It can also be defined in terms of skills on the job after graduation. However measurements of a project's impact in this respect will not be easy in any case, but it will be impossible unless there is a clear statement of what the programme is trying to achieve. Another dimension of efficiency is productivity and income in employment, which may or may not vary directly with the degree of skill acquired by the trainee. In term of labour market orientation, efficiency may be particularly difficult to define. Gains in academic achievement or acquisition of

skill may be among the results, but the projects may also have important, not easily measured, effects on the morale or well-being of the participants.

Finally, a project's efficiency may be defined partly in terms of its indirect or spillover effects, such as changes in the role of women or the wider impact on the labour market of changes in the supply of skills. For some projects success is measured in terms of their impact on equity. Their objective is to improve the relative position of a given underprivileged group with respect to any or all of the effects discussed above.

This study deals with efficiency of operations (the internal efficiency) of vocational higher secondary schools. The areas to be covered were influenced by this general literature attempting to identify the key elements of effective vocational programmes. The main aspects of internal operations identified include the content and relevance of the courses, the teaching methods, the quality of the staff, the appropriateness and use of equipment, the effectiveness of management, and the interrelations with industry.

Hunting et al. (1986 p.9) concluded that certain key factors have a primary influence on the overall efficiency of a vocational institution. This list which is presented below was influential in structuring the approach in this study.

1. The Qualitative Evaluation

a) Level, Content, quality and relevance of the Training programme

- The format and content of the curricula and syllabuses
- The implementation of the course : the teaching process, methods, materials used, and training activities.
- The examinations scheme; content and conduct of examinations

b) Students

- Selection methods, entry qualifications and sponsorship
- Counselling, guidance, placement , and follow-up
- Student-staff relationships

c) Staffing and Staff development

- Staffing policy, salaries, and other conditions of service
- Selection and qualifications of staff
- Size, and quality of staff; turnover
- Size, quality, and salaries of support staff
- Staff development plans; training (pre-service and in-service)

d) Physical resources

- Range, areas, and layout of accommodations
- Facilities, services, and maintenance
- Range, relevance, and adequacy of equipment
- Equipment use, maintenance, and repair
- Replacement and updating of equipment
- Use, replacement, and storage of consumable materials.

e) Organisation and Management

- Institutional development plan and objectives
- Organisational structure and responsibilities
- Management Informational system : availability and use
- Management style and effectiveness

f) Interrelations with industry

- Training and employment
- Formal links and services

- Industrial links of staff
- Industry-like environment

2. The Quantitative Evaluation

a) Student Flow Rates

- Admission rate
- Dropout rate
- Repetition rate
- Pass rate

b) Student Performance

- Average time required to produce a graduate
- Output-input ratio

c) Staffing

- Student-teacher ratio
- Average class size
- Average Teacher workload

d) Facility Schedules and Utilisation of Space

- Average area of workspace
- Average areas of support spaces
- Space utilisation

e) Costs

- Staff salaries as proportion of total cost
- Cost per student per year for consumable materials
- Maintenance cost as proportion of capital costs

3. The Central Training System

- Policies, Planning, and development
- Central and regional control.

Identifying the key elements of the checklist, it had to be kept in mind that this was a particularly difficult period for vocational education. As we have seen in Chapter Two a campaign to identify 'bogus' students began in 1994-95 and reverberations were still occurring. Consequently this was a particularly sensitive time to be seeking information on vocational education and data on a range of topics. It would be difficult to collect valid evidence on key aspects of the internal efficiency of schools . The most difficult areas to collect valid data on would be those involving financial information. It was decided therefore not to attempt to collect data in the following areas in this survey.

- Staff salaries as proportion of total cost
- Cost per student per year for consumable materials
- Maintenance cost as proportion of capital costs
- Student cost per year to the treasury

Interpreting Hunting et. al.'s checklist in an Indian context led to some further modifications. These modifications were influenced by the scale of resources available for carrying out the evaluation, in particular the time and money available. It was decided to focus on the institutional level and the following check list was used as a structure for framing the content of the research tools used in this study.

a) Vocational higher secondary school

- The nature of school including school type, ownership and area
- Nos. of students in school (both vocational and general)
- Name of vocational course offering in school and the reasons why and how they introduced

- General background of school principal (sex, caste, age, qualifications and experience)
- Principal's suggestions for improvement

b) Level, Content, quality and relevance of the vocational programme

- The format and content of the curricula and syllabuses
- The implementation of the course : the teaching process, methods, materials used, and training activities.
- The time devoted to different vocational subjects
- The time devoted to theory and practical work
- Quality of curricula and syllabus
- The emphasis placed on the elements of different vocational subjects and their relevance to the world of work
- Review and revision of curricula
- Opinions of vocational students, principals, teachers and ex-students on the vocational course programme

c) Students

- General background including area, sex, name of course, age, caste and qualification.
- Family occupation, income and education of student
- Selection methods, entry qualification
- Counselling and career guidance
- The reason for joining particular vocational course
- Plan after completion of course
- Student's suggestions for improvement

d) Staffing and Staff development

- General background of vocational teacher

- Qualification and experience of vocational teacher
- Staffing policies, salaries, and other condition of service
- Selection and qualifications of the staff
- Staff development plans; training (pre-service and in-service) and turnover
- Teacher's suggestions for improvement

e) Physical resources

- Facilities, services, and maintenance
- Range, relevance, and adequacy of equipment
- Use, replacement, and storage of consumable materials.

f) Organisation and Management

- Institutional development plan and objectives
- Organisational structure and responsibilities
- Management information system : availability and use
- Management style and effectiveness

g) Interrelations with industry

- School and industry effort for linking each other
- Industrial help to school
- Formal links and services
- Industrial links of staff

h) Vocational apprentices

- General background of vocational apprentice
- Family occupation, income and education of apprentice
- Full description of present job including salary and expenses, and services
- Relationship between vocational course and present job
- Plan after completion of apprenticeship

- Suggestions for improvement

i) Employers

- General background
- Recruitment procedure for vocational apprentice and considerations taken in appointment
- Opinions of vocational apprentice
- Suggestions for improvement

The modifications were made to take the following points into account. It was felt that it was necessary to pay closer attention to the school itself; its general nature, the teaching process, including practical laboratory and workshop activities and to assess the method and quality of instruction. While examination results provide data for the quantitative study of internal efficiency, attention has also to be paid to the quality of the examinations administered and the relevance of examination methods to the training. It was considered that the source and quality of students and the processes by which they are selected and counselled at entry and assisted to find appropriate employment after training ends were important.

A key factor in determining efficiency is the quantity and quality of teaching staff. The evaluation looked at the procedures for selection, appointment, assignment, and the promotion of staff, as well as their salaries and other conditions of services. The quality of staff was assessed and deficiencies and training needs were identified. Information was sought on teacher qualifications and experiences, teachers performance, the quality of the teaching programmes and materials, and the student's work . Information on the utilisation and performance of support personnel, particularly laboratory and workshop employees and professional staff such as librarians, was also included.

Another key factor affecting the quality and effectiveness of training is the adequacy and utilisation of physical resources (building, equipment, and materials). Over provision and under-utilisation are as inefficient as under-provision, without its consequent overcrowding and inadequate facilities.

The interrelationship of the training institution with industry is probably the most important single indicator of its efficiency and effectiveness. This interrelationship was measured in terms of employment of trainees, formal links between the school and industry, the staff's industrial experiences and connections, and the extent which the institution engages in production or other practical activities and creates an environment similar to that of industry.

3.2 CHOICE OF RESEARCH METHODOLOGY

In deciding on the research methodology a number of key factors had to be taken into account. First, few reliable 'official statistics' are available on this area. The key source of data in the field is the Annual Report on Vocational Education published by the Office of the Joint Director, Education Department and as shown in Chapter 2 there are major inconsistencies in the reporting of the data in this source between and across years. Other sources of published information on vocational education (e.g. the educational statistics by the Commissioner's Office) are irregular publications and data on key areas often differs substantially from that published by the Education Department.

Little previous research has been carried out in this area, perhaps in part revealing its low status and a search of 700 dissertations from the Gujarat University revealed only two dissertations on the topic (Patel 1994, Moriya 1995). Generally there has been little research in vocational and technical education in India. Some limited research was undertaken in the post-war period but it was often haphazard and there was no clear

identification of key research questions. Research picked up momentum after 1977 when the decision was taken at the national level to introduce vocationalization at the higher secondary stage. Even then the majority of the work has been undertaken in a limited number of fields. Most of the studies, nearly two-thirds, could be characterised as falling into the field of educational psychology. This work has explored concepts such as vocational attitudes, aspirations, interests and aptitudes and has been mainly concerned with testing whether students were choosing the right course. Studies have rarely been concerned with issues relating to the curriculum (for example, what was the appropriate curriculum for vocational education at this level, who was the curriculum aimed at) or to questions of access or progression from the courses. The key question first raised by Foster of whether a diversified secondary school curriculum was more profitable than a general curriculum has been rarely addressed. Theories of the labour market particularly at the local level, of financing vocational and technical education, of calculating individual and social rates of return have not been central foci of interest for Indian researchers. Another major imbalance in the research has been the lack of attention to issues of vocational education in different geographical areas.

For the researcher into Indian education it is critical to understand the relationship between Indian politics and education.

> "In Uttar Pradesh they have a phrase, ' The Congress has abolished the Zamindari in land and has created a Zamindari in education'. Such Zamindaris (landowners) are managers of colleges who are well fed, well clothed, and maintain their own cars, all on the profits from the institutions they run. It is now recognised that running an educational institution can be an important means of economic and political power". (J.P.Naik, Member Secretary, Education Commission 1964-1966 quoted in Gould 1972).

The running of educational institutions as private profit making institutions, often with a variety of links to the major political parties, makes some types of research difficult and perhaps dangerous. Moreover in planning the current research it had to be kept in mind

that this was an acutely sensitive period for vocational higher secondary education. As we have seen in Chapter Two a campaign to identify 'bogus' students had begun in 1994-95 and reverberations were still occurring. Consequently this was a particularly difficult time to be seeking information on vocational education and the choice of research methodology had to recognise this. Data on a number of issues would be extremely difficult to collect. Particular problems could be anticipated in areas such as financial data and student completion data and on some of the distinctive features of the links between education, politics and culture in Gujarat such as the custom of giving 'donations'.

Another major consideration in choosing a methodology were the resources available, in particular time and money. The research had to be completed within two months (the time available to the researcher in Gujarat), would have to be undertaken personally by the researcher and would have to be financed by him. The methodology had to take into account that schools could be as much as 500-600 miles from each other and that transportation was difficult in rural areas.

However in order to obtain an overview of vocational higher secondary education in Gujarat it was felt necessary to obtain as wide a view as possible within these constraints. In particular it was felt that the methodology should be developed to ensure that:

a) there was maximum coverage of the wide variation across the regions of Gujarat so that different zones and districts were covered as well as rural, urban and semi-urban sites;

b) both private and public educational institutions were covered. Vocational higher secondary education in Gujarat is largely delivered in private educational institutions

(government funded) but there are a few public (government run) educational institutions running these courses.

c) the significance of caste divisions in Gujarat and their importance in the educational process was recognised. Caste-division is deeply entrenched in Indian social and bureaucratic structures, affects educational processes and thereafter the availability and access to jobs. The decision was taken that the following official government categories would be used in the current study (Ministry of Human Resource Development, India 1991b)

a. General Caste

b. Scheduled Caste (SC)

c. Scheduled Tribe (ST)

d. Socially and Educationally Backward Caste (SEBC)

d) the maximum representation of the different groups of people involved with (vocational) education was achieved. Hence the methodology had to provide responses from a variety of groups including school principals, teachers (working at a variety of levels), current students, ex-students and prospective employers. Moreover the different trades represented by the different vocational courses - commerce, home science, technical and agriculture - should be represented. The 13 vocational courses covered in the survey are indicated in Appendix 2 by an *.

After careful consideration the decision was taken that a survey involving the use of questionnaires would be the most appropriate research methodology.

The Survey

A successful research survey must be effectively managed. Pole (1989 p 102) writing on the methodology of research stresses:

> "the importance of making the right start, of being well organised, of developing useful contacts, collecting and recording data".

The survey has a long historical tradition as a method of systematic data collection in the field of education. Lazarfeld and Sieber undertook a content analysis of educational research appearing in 40 journals in 1964, and found that about a third of them involved the use of the survey method (Lazarfeld and Sieber 1966). Survey research is a distinctive research methodology that owes much of its recent development to the field of sociology. The term survey is used in a variety of ways but commonly refers to the collection of standardised information from a specific population, or a sample from one, usually but not necessarily by means of a questionnaire or interview. It entails the collection of data on a number of units, usually at a single juncture in time, with a view to collecting systematically a body of quantifiable data in respect of a number of variables which are then examined to discern patterns of association (Bryman, 1989).

The guidance available from standard texts - particularly those on survey methods - for the most part assumes as background the conditions that exist in the developed world. However the conditions under which social science and educational research is carried out in developing countries differs in significant respects from conditions in the industrial world in North America, western Europe and Australia. When examining texts on survey research methods we find that although they provide guidance on how to proceed, they do not pay attention to the particular local conditions and problems which are likely to arise. The possibility of doing research and the success of the techniques used are often strongly affected by local or national structural and cultural

variables. These vary not only between countries but also within them - between rural and urban areas and between regions with differing historical or political backgrounds. Indeed some sceptics about the indiscriminate use of social surveys in developing countries have often suggested that other research methods - particularly extended fieldwork and participant observation - might be more appropriate. The problems of undertaking social surveys in the Indian sub-continent has for some time been a subject of discussion. The problems are illustrated in the following statement made by a government official in India to a visiting anthropologist:

> "We have all categories (of data). We have some ready for survey research people who come here periodically; we have a similar one for students who come for dissertation research and bother us. But we have what I call the grass-room data, one concealed behind the screen". (Srinivas, Shah and Ramaswamy 1979 p.13).

Srinivas, Shah and Ramaswamy (1979 p.vii) further note that particularly in large projects

> "there is a sharp division of labour between high level analysts, who decide such matters as the problem to be investigated, and the methodology to be employed and who write the final draft, and low level investigators who canvass the questionnaires and punch, code and tabulate the replies. The former are the upstairs people while the latter live below. The investigators who collect the information are generally not highly motivated; as a result, the data gathered in the big surveys do not have a high degree of reliability. However, this is not peculiar to India - it is a universal phenomenon. No amount of statistical sophistication can set right the distortions and falsifications introduced by wrong data". (Srinivas, Shah and Ramaswamy 1979 vii).

Other writers on India have pointed out that though respondents are invariably pleasant and courteous, they do not give the impression of trying hard to make sure their answers are correct. Deference and social hierarchy, particularly marked in the caste

society, encourage the respondent to give an acceptable answer. In a society where the roles of the social research interviewer and the social survey respondent are uncertain, it is not surprising to find marked differences in response when comparisons were made between responses obtained by interviewers who were government employees compared with responses obtained by interviewers who were private citizens (Ralis, Suchman and Goldsen 1958 pp.245-50).

Other researchers have however argued that with careful planning social surveys can provide valuable information. Eldersveld and Ahmed (1978 p.13) argue that:

> "Our position...based on our extensive experience in two national surveys and in smaller studies, is that in principle the problems of survey research are no different in India than elsewhere. Obstacles of a special character do indeed exist in India, but by careful planning, training and supervision those which might seriously bias the results can be dealt with. Error does occur and must be allowed for in all studies everywhere - sampling error, interviewing error, coding error- but India is basically no different from other countries in this respect".

Other writers point out that many of the problems of sample surveys, including lack of comprehension by local respondents. suspicions about the purposes of the research, and distortions in responses, repeat themselves in different form in observational studies.

In planning the current study these potential criticisms of the use of the social survey method in India were taken into account as will be outlined later. The decision was taken that the main research instrument to be used in the survey would be questionnaires. Questionnaires were seen as advantageous in providing an efficient use of time in reaching large numbers of respondents, in allowing for anonymity, in obtaining a high response rate and ease of analysis. Sources such as Munn and Drevers

(1990) were used for advice on the style of the questionnaire and the wording of particular questions. Great care was taken in drafting the questions and particular use was made of the cultural knowledge of the researcher. While drafting the questions, Munn and Drever's (1990 p.29) tips were borne in mind: brevity, clarity, language level, knowledge base of opinions, whether personal details of respondents are vital, avoidance of leading questions, asking one question only at a time.

Questions can be framed in a variety of ways. The three main assumptions underlying completion of self report questionnaires were considered. These were

1. The respondent can read and understand the questionnaire or items.
2. The respondent possesses the information to answer the question or items
3. The respondent is willing to answer the question or items honestly.

Care was also taken to follow Davidson's (1970) advice cited in Cohen and Manion (1994 p.92) that the ideal questionnaire should possess the same properties as a good law. It must be clear and unambiguous.

Five different questionnaires were designed to be completed by principals, teachers, students, ex-students and employers (see Appendix 3 (in English) and Appendix 4 (in Gujarati)). The structure of the questionnaires varied with the principals' questionnaire containing questions on government policy, grants and appointment of staff, the teachers' the content and quality of course, teaching facilities and training etc. The questionnaires contained mainly closed ended questions although there were some open ended questions included. The questions were sequenced so that the initial questions were simple, had high interest value and encouraged participation, the middle section of the questionnaires contained the difficult questions while the last few questions were of high interest in order to encourage the respondents to return the completed schedule (Hoinville and Jowell (1977) cited in Cohen and Manion (1980 p85). A brief note was

included at the very end of the questionnaire to thank the respondent for his / her participation.

The decision was taken that mail questionnaires would not be suitable. Of critical importance in reaching this decision was anxiety that in the current climate of suspicion surrounding vocational education there was a danger that postal questionnaires would produce extremely low response rates and 'impression management' on the part of respondents. Moreover it was hoped that meeting the writer, an experienced vocational school senior teacher, would generate the trust necessary to produce valid information. It was decided therefore that the researcher would visit each of the chosen sites, would administer the questionnaire to various groups, would observe the school and its facilities, would interview in all schools the head, some teachers, students, ex-students and employers so that later responses from the questionnaires could be viewed against evidence gained from the interviews and observations.

Informal interviews, general discussion and conversations were important sources of information. Interviews were of great importance in gathering data and in eliciting explanation or clarification of information collected elsewhere. Rutherford (cited in Livingstone 1991 p.22) describes the personal interview as 'a key technique used to gather data'. He identifies three possible functions of the interview as :

1. to determine the attitudes, opinions and practices for various groups of people
2. for evaluation purpose, to determine whether a programme is succeeding or failing
3. in the area of counselling

Interviews have been classified as formal or informal. Formal interviews are characterised by the use of an interview schedule which provides a format and predetermined discussion areas. However in this study informal interviews were

conducted because some of the information regarding sensitive areas such as donations, physical facilities, grant misuse was more easily obtained by informal discussions with different groups including teachers, principals, students, educationists, government officers etc. Face to face relationships with proper motivation is essential for this flexible tool which permits explanation, adjustment and variation according to the situation. In this study some information was impossible to obtain through questionnaires such as management attitudes towards vocational education, the techniques used to enrol students, the techniques used when open to external inspection. I collected information on these areas through the informal interviews.

Observation was also undertaken during the fieldwork to get first hand, correct information about class-size, the real position of laboratories and workshops, teaching methods and facilities and wherever possible a sample of students' work was examined. Therefore in each school, classroom, workshop, laboratory and library observation was undertaken.

Using these different methods was also useful in that it overcame the weaknesses or biases of a single method taken by itself. Writers (see, for example, Denzin 1994) have used the term triangulation or multiple operationalism to refer to the use of multiple methods in an investigation so as to overcome the weaknesses or biases of a single method taken by itself. Exclusive reliance on one method may bias or distort the researcher's picture of the particular slice of reality he or she is investigating. The researcher needs to be confident that the data generated is not simply an artefact of one particular method of collection. It is argued that confidence can be achieved when different methods of data collection yield substantially the same results. Furthermore the more the methods contrast with each other, the greater the researcher's confidence. In this study where there was a reliance on one researcher studying a number of sites asking for information on areas of particular sensitivity the use of multiple methods was considered essential.

FIELD WORK IN INDIA

3.3 SELECTION OF THE SAMPLE

Schools, Principals, Teachers and Students

To choose the sample it was necessary to have a sampling frame. In the present study the sampling frame were the schools in Gujarat state who run central vocationalisation schemes at higher secondary level. The most up to date list of schools was obtained from the Office of the Joint Director, Education Department. Care had to be taken due to the fluctuating numbers of higher secondary schools running vocational courses. In 1994 there were 371 schools running vocational courses, but at the time of sampling only 80 were listed as operating such courses. In order to obtain a sample of the population, I used a complex method of identifying and selecting cases from different zones, areas, schools and groups.

Table 3.1 shows that the state government has divided Gujarat into 4 zones: Ahmedabad; Gandhinagar; Rajkot and Baroda. The schools were distributed across the four zones. There were 28 (35%) and 17 (21%) schools situated in Ahmedabad and Gandhinagar zones respectively with 19 (24%) and 16(20%) schools in Rajkot and Baroda zones. I then used random sampling to choose individual schools within each zone. A higher proportion of schools were chosen from the Ahmedabad zone to reflect the large number of rural schools in this zone. By using this method, 9 schools were chosen from the Ahmedabad zone and 4 schools from each of the other zones. Schools were selected from 9 different districts with 7 schools being selected from rural and 14 schools from urban areas. Within the schools all principals (21), teachers (163), students (546) were selected and attempts were made to contact at least five ex-students and two employers associated with each school (for details see appendix 5 and Appendix 6).

Table 3.1

Descriptions of Sample

Details	Ahmeda-bad	Gandhi-nagar	Rajkot	Baroda	**Total**
No. of Districts in the each zone	4	3	7	6	**20**
No. of total schools in the each zone	28	17	19	16	**80**
a. In urban areas	15	13	13	11	52
b. in rural areas	13	4	6	5	28
Nos. of schools selected in sample	9	4	4	4	**21**
a. In urban areas	5	3	3	3	14
b. In rural areas	4	1	1	1	7
Numbers of districts (represented in sample)	2	2	3	2	**9**
Nos. of Principals (selected in sample schools)	9	4	4	4	**21**
Nos. of Students (selected in sample schools)	202	152	91	101	**546**
Nos. of Teachers (selected in sample schools)	69	49	20	25	**163**
Nos. of Ex-students (selected in sample schools)	41	31	17	22	**111**
Nos. of Employers	19	7	9	11	**46**

Selection of Ex-students and Employers

An interesting perspective on issues relating to prospects for the graduates of vocational courses is presented by the views of ex-students of vocational education courses who are now in paid employment or an apprenticeship. Given that these are the preferred options for graduates of vocational education their views on the processes and outcomes are particularly valuable. Lists of ex-students were made available by the schools and each school in the sample provided ex-students. The number of ex-students provided by each school ranged from 1 to 10 with an average of 5. The ex-students completed a questionnaire and informal discussions were held with the ex-students. The ex-students had completed the following vocational courses (see Table 3.2) and there were indications that commerce and technical courses were over-represented in the samples of ex-students compared with home science and agriculture courses. Given the limited information available on ex-students, comparisons will be made between the characteristics of the ex-students and the vocational student body. It is recognised that the selection of the ex-students was not undertaken randomly but it is felt that some of the comparisons are particularly interesting and reveal possible linkages between parts of the system.

Table 3.2
Nos. in Wage Employment or Apprenticeship by previous Vocational Courses

Details of Vocational Students	Total	Commerce	Technical	Home-science	Agriculture
Nos. of Students	111	50 (45%)	34 (31%)	15 (13%)	12 (11%)

Developing a sample of employers proved difficult. It had been anticipated, prior to undertaking the fieldwork, that contact with employers would be made with the help of

the State Education Department. However no body has overall responsibility for linking schools and industry and consequently it was necessary to rely on local links between schools and industry to establish contacts. In the Ahmedabad zone, through information provided by school principals and the ex-students, employers willing to co-operate were identified. Arrangements were made to visit the employers in their workplace and semi-formal interviews of about twenty minutes were undertaken and a questionnaire was left with the employer for return to the researcher. The length of the interview was often dependent on the interest shown by the employer and some lasted forty five to fifty minutes. A similar range of questions was asked in each interview. In other zones even more difficulties were encountered. Particular difficulties were faced in rural areas where the lack of large industry or government departments led to limited opportunities for placing vocational apprentices. With the help of school principals and teachers, addresses of employers were identified but difficulties were found in establishing contact and some employers were unwilling to co-operate and some delegated the task of being interviewed to junior members of staff. In a number of cases where interviews had been carried out questionnaires were not returned despite concerted efforts by the researcher and teachers from the local schools. These difficulties in themselves reflect the weak relationships that have been established so far between the schools and local industries.

Altogether 65 interviews were carried out but questionnaires were returned by only 47 employers. Certain groups of employers are over-represented in the sample. All of the employers were male and 91% came from urban areas. There is representation of employers across the zones with 41% coming from the Ahmedabad zone, 15% from Gandhinagar, 21% from Rajkot and 23% from Baroda. The largest group of employers were found in government departments (53%) and then public limited companies (32%) who employed over 200 employees. Few employers were involved who were one man businesses or partnerships. 72% of employers had less than 5 vocational apprentices and 28% between 6 and 10.

Preparation for questionnaire administration

Drafts of the questionnaires to be used had been prepared in England prior to travel to India. The first task of the field work was to translate the questionnaires into Gujarati. Working with three ex-colleagues who were working as Gujarati language teachers in higher secondary schools the questionnaires were translated. We tried to make each version simple and understandable by the audience for which it was designed. The next task was to arrange for a pre-testing of the Gujarati version of the questionnaires. The first stage was a discussion with two principals, four teachers, two employers, one class of 25 students and 6 ex-students. This led to some additional questions being included and discussion of likely responses to some of the more direct questions. One class of 25 students in a school completed the questionnaire and took part in a discussion where they raised issues regarding their experiences. 3 questions were identified as hard to understand and 5 questions as difficult for respondents to see their significance. Two questions were in inappropriate language and one question was too long. Contacting ex-students for pre-testing purposes was difficult but with the help of colleagues I got 6 ex-students who were working in different places such as private and public companies and the government and non-government services. Through discussion I found differences in their relation between present job and training, working conditions and pay. I added questions relating to these areas in the questionnaire (see ex-student's questionnaire Q.12,15,18 respectively). Four colleagues who were teachers in vocational schools, but working in different zones and areas, completed the questionnaire and discussed some of the 'difficult' questions such as donations (see teacher's questionnaire Q. 10) and real work. These discussions pointed up the importance of the availability of physical resources. This alerted me to the need to observe the resources on my visits to schools to administer the questionnaires. I discussed the principal's questionnaire with two experienced principals who were known to me. They raised issues not covered by the questionnaire regarding grant allocations, the use of grant funds (see principal's questionnaire Q. 36)

and industry's attitudes toward vocational schools funds (see principal's questionnaire Q. 32). I amended the principal's questionnaire to take this into account.

The next task was to amend the questionnaire to make it more sympathetic to a Gujarati context. This involved the layout of the questionnaire and the style of questions. When I was satisfied, the questionnaires were then produced on a computer. This was costly but was considered important in order to produce a high response rate.

A preliminary trial of the research instruments was essential. I chose one school for the pilot study of all the questionnaires. After gaining permission I visited the school and administered the questionnaires to students and teachers. Before I administered the questionnaire I talked with students and teachers about the objectives of my study and explained how this study would contribute to the debate about the improvement of vocational education. I told them that any information they provided would only be used in the analysis of the study and would not be provided to other parties. The questionnaires were examined by the principal of school who raised no objections and I received 100 per cent response from the teachers and the students of the school. I examined the completed responses and no major problems were identified.

Interviews

During this preliminary fieldwork phase in Gujarat interviews were conducted with personnel from the State Education Department, a District Education Officer, an ex-chairperson of the State Secondary Education Board, the Director of the School of Education of the State University and some parents. A semi-structured interview with a number of key questions provided the frame for the interviews. It was possible to tape-record several of these interviews, especially those with colleagues who knew me well. However the majority of the interviewees were hesitant about being tape-recorded. Any talk that was in any way critical of schools, principals or government created problems

for some interviewees. I therefore made notes which I filled out soon after each interview. I was careful not to schedule more then one interview or group interview a day so as to allow sufficient time for note-making at home. In addition to this first phase of interviews, I also had the opportunity during the case studies in schools to engage in further interviews with principals and school teachers whom I met at schools. I was familiar with the Ahmedabad zone but other zones were unfamiliar to me. Time was critical and it was necessary to get a good response from each zone. I had previously experienced problems in obtaining co-operation when I was collecting data for my M.Ed. and M.Phil. degrees. I therefore contacted the President of the Gujarat Acharya (Principal) Mandal (association), the only association of Principals in Gujarat and requested their co-operation. This was forthcoming and I received a letter (see appendix 7a) addressed to the Principal of the schools selected in the sample stressing my non-governmental position. I got another letter from the Chief Education Officer of the State Vocational Education Department, addressed to all the selected schools stressing the importance of the work (see appendix 8a). I sent these two letters with a personal letter (see appendix 9a) to all Principals asking for their co-operation and noting the particular date I would like to visit their school. After a few days I contacted the Principals to fix up the visits and all the schools agreed.

All the participating schools were visited for one day. The first two hours were spent with the school principal and the teachers to familiarise myself with the school and its context and to become known to the teachers. The purpose of the study was explained and arrangements made for the distribution of the questionnaires. Throughout the day care was taken to avoid acting as an inspector or inquisitor. In all schools questionnaires were completed in my presence and help was provided if questions were raised. During the day opportunities were taken to exchange experiences and provide advice as well as gather information. After completion of the questionnaires detailed observation was made of teaching and training activities, use of equipment and facilities in workshop and laboratories, library, school buildings and other facilities. Some

classes were also attended to observe teaching methods in a variety of settings including laboratories and workshops. Individual interviews were conducted with the school principal and wherever possible different groups of teachers. After school with the help of teachers, ex-students and employers were visited and questionnaires were completed. The most difficult part was obtaining responses from employers. Interviews were generally short and often the questionnaires were completed by other people in the organisation.

I spent eight weeks collecting data from the schools. I faced many difficulties as some of the chosen schools were in villages with few transport facilities and a considerable distance away from Ahmedabad. I was fortunate to obtain co-operation from all the schools I contacted. I consider the reasons for this to be:

1. The letters from the Principals Association and the Education Office;

2. My own previous position as a senior teacher in a vocational school provided me with understanding of the contexts I was researching and I was able to explain in detail how the study would be of benefit to vocational education in Gujarat;

3. I followed cultural traditions and as a visitor returning from England provided gifts of pens to the principal and the teachers.

To supplement the interviews undertaken with employers and ex-students during the school visits, I obtained from the schools the addresses of 50 employers and 130 ex-students. I posted questionnaires with letter (see Appendix 10a) and stamped addressed envelopes for returning the questionnaires. Unfortunately I received only four completed questionnaires from employers and six from ex-students. I wrote two reminder letters but received no further responses.

3.4 CONCLUSION

The strategy adopted produced a high response rate, particularly given the limitations of time and resources and the need to cover schools that were spread across the state of Gujarat. However it should be noted that some of the problems referred to by previous researchers were apparent. Given the sensitive context it is not surprising that many of the higher placed respondents e.g. teachers and principal regarded some of the questions, particularly the financial questions, as unnecessarily intrusive and responded in a way to avoid controversy. In some cases during the day as trust developed, responses became more frank and honest. The greatest difficulties were found in obtaining responses from the employers who were unconvinced of the value of the survey and often handed the questionnaire to junior members of the organisation. There was some indication in the responses from the students of impression management and the use of the evidence from the observations and the interviews was valuable in interpreting the responses. On completion of the field work I returned to England and the questionnaires were returned by sea mail. They were then coded where appropriate and analysis was carried out using the Statistical Package for the Social Sciences. The results are reported in the next chapter.

CHAPTER FOUR

VOCATIONAL SCHOOLS IN GUJARAT

4.1 INTRODUCTION

In this Chapter the results of the survey will be presented. In the early part of the Chapter a description will be provided of the schools, their organisation and management, their courses as well as their Principals, teachers and students. This will be followed by an examination of their curriculum and their physical resources. The final sections of the chapter will consider the links between the schools and industry and the post-course destinations of students. This section will include the views of employers and ex-students on the quality of the provision.

4.2 THE SURVEY FINDINGS

General Profile of Schools in the Sample

In 1991, Raizada and Sacheti's study found there were 1414 higher secondary schools in Gujarat of which 98% were run by private (non-government) management. This study found similar results with 95% of the schools in the sample being run by private (non-government) management boards. Gogate (1984) and Soundavaralli (1989) found in their surveys in Tamil Nadu that 90% of schools were upgraded i.e. they were higher secondary schools who added a vocational stream to their existing academic streams. In this study all the sample schools were upgraded.

62% schools were co-educational, 33% were for girls only and 5% only for boys. The school sizes in the sample varied but about two thirds of the schools had student numbers excluding vocational students between 300 and 400. Over half the schools had

under 50 students on vocational courses, 24% had between 51 to 100, 14% 101 to 150 and 10% 151 to 200 (see Table 1 in Appendix 11).

Vocational education was perceived by the Principals to have been introduced by a variety of different influences (see Table 4.1).

Table 4.1
Principals' perceptions of major influence on reasons for introducing Vocational Education

Major influence	Number	%
Directive of School Management Board	7	33
Self	5	24
Government Directives	5	24
Previous Principal	4	19
By Industries	0	-
By Social Leaders	0	-

A third of the principals perceived vocational education to have been introduced mainly as a result of the directive of the school management board, about a quarter thought it was the influence of government directives or their own influence. Interestingly in no case was industrial or community pressure perceived to be the main influence on the introduction of vocational courses. However teachers had a more instrumental view of the introduction of vocational education and felt that the availability of government grants and teacher donations were the important influences. Indeed some Principals, particularly in the more informal parts of the interview, indicated the attraction of grants and donations.

The vocational courses offered in the schools in the sample are shown in Table 4.2

Table 4.2

Vocational courses in sample schools by Zone

Details of Course	Name of Zones				
Trades and Courses	Nos.of school	Ahme-dabad	Gandi-nagar	Rajkot	Baroda
Commerce	**9**	**5**	**2**	**1**	**1**
a. Office Management	5	3	2	-	-
b. Gujarati Stenography	5	3	-	1	1
c. Banking Assistant	2	1	1	-	-
d. Accounting and Auditing	1	-	1	-	-
Technical	**6**	**2**	**2**	**1**	**1**
a. Electronics Technology	4	2	1	-	1
b. Air Conditioning and Refrigerator	3	-	1	1	1
Home-Science	**11**	**3**	**3**	**3**	**2**
a. Clothing For Family	5	1	2	2	-
b. Commercial Garment Design & Making	2	2	-	-	-
c. Bakery and Confectionery	2	1	-	1	-
d. Food Preservation and Processing	6	1	2	1	2
e. Institutional House Keeping	5	2	2	1	-
f. Crèche and Pre-school Management	3	-	2	1	-
Agriculture	**1**	**-**	**-**	**-**	**1**
a. Horticulture	1	-	-	-	1
Nos. of Schools	21	9	4	4	4

It can be seen from Table 4.2 that the highest number of courses were found in Home Science (11) followed by Commerce (9) then Technical (6) and Agriculture (1). At the state level Commerce courses were run in 162 schools, Home Science in 88, Technical in 71, and Agriculture in 18 schools (Annual Administrative Report 1994 p.16). It is possible that Home Science courses are over-represented in the current sample while Commerce may be under- represented. This could be explained by Commerce courses being the most affected by the recent changes in inspection procedures.

Table 4.3 shows the principals' perceptions of the factors which had influenced the decisions as to which particular vocational courses to run.

Table 4.3

Principals' perceptions of the importance of factors in determining the particular vocational courses run in the school

Name of Factors		Highly important	Of some importance	Of little importance	Of no importance
The needs of local business and industry	%	60	20	15	5
Government incentives	%	53	16	21	10
Student demand	%	45	20	15	20
Availability of facilities	%	40	25	20	15
Staff availability	%	35	30	15	20
Ease of administration	%	35	29	24	12
Recommendation made by Government department	%	32	42	11	15

The Principals viewed the most important factors as being the needs of local business and industry with government incentives also being seen as very important. However no Principals described any processes involving attempts to identify the needs of local

business and industry and no evaluations to assess the suitability of the current provision. The most successful courses were seen by the Principals as being the Home Science courses.

The Principals

The schools were run by Principals who had responsibility for running both the general and vocational streams. None of the schools had appointed Vice Principals in charge of the vocational stream as recommended by the Scheme of Vocationalisation of Secondary Education in 1993 (India, Ministry of Human Resource Development, Department of Education 1993 p.36). The majority of the Principals were over 40 years of age (over 80%) and all held a Masters degree in either Commerce, Arts or Science as well as the Bachelor of Education degree (see Table 2 in Appendix 11). However only one of the 21 Principals held a first class Masters degree and 5 a first class Bachelors degree. Only 4 of the Principals held a Masters degree in Education. The Principals had considerable experience of teaching with nearly a half having over 10 years teaching experience with 4 having more than 30 years experience. 5 of the Principals had more than ten years experience of Principalship. None of the Principals held a doctorate or a qualification in education management. None of the Principals had any technical qualifications, a finding paralleling that of CASE in 1985 in Karnataka, Maharashtra and Gujarat. 13 of the Principals were male, 8 were female. 7 out of the 8 female Principals were in charge of all girls schools The only female Principal of a co-educational school was in charge of the only Government School in the sample. In terms of caste all of the Principals belonged to the General Caste except the Principal of the only government school who belonged to the Scheduled Caste.

The Teachers

All the teachers in the sample held full-time appointments. This compares with Soundavaralli's (1984) study which found that in Tamil Nadu 80% of vocational teachers held part-time posts. The Principals selected the teachers for the vocational courses largely on the basis of their academic and professional qualifications. Of the 163 teachers in the sample, 148 were working as vocational teachers and 15 as language teachers. 93 (57%) of the teachers were male, 70 (43%) were female (see Table 3 in Appendix 11). Teachers were relatively young with 46% of the teachers being under the age of 30. Of the vocational teachers 89% had less than ten years teaching experience and relatively few of them had industrial experience relevant to the vocational area they were teaching. This parallels Gogate's (1987) finding that most of vocational teachers lacked industrial experience. Most had been appointed without prior teaching or industrial experience. Those who had industrial experience were most likely to be teachers of typing and in most cases their experience was limited to less than one year. There was little difference between the Principals and the teachers in terms of the level of their educational qualifications or the class of their qualifications. 85% of the teachers taught across Standards 11 and 12. Entrepreneurship and the General Foundation subjects were taught mainly by teachers with a Masters of Commerce degree while the Vocational subjects were taught mainly by those holding Bachelors degrees in Arts or Science. Frequently those teaching vocational subjects lacked a qualification in education. 77% of the teachers belonged to the General Caste but there was a greater numbers of teachers belonging to other Castes than in the case of Principals.

The majority of the teachers as can be seen from Table 4.4 were attracted to the teaching profession by the security provided by a teaching post, the promise of being able to obtain a post in a particular geographical area and the promise of good working conditions.

Table 4.4

Teachers' views on their reasons for entering the teaching profession

Details of reasons		Very important	Of some importance	Of little importance
A secure job	%	77	19	04
A job in a particular area	%	72	16	12
Good working conditions	%	68	19	13
Good salary	%	39	42	19
Improving my social status	%	31	28	41
It's easy to get a teaching job	%	19	35	46
My family are teachers	%	11	42	47

In general terms, finding teachers for the vocational courses did not present a problem for Principals. Over 70% of the Principals responded that it was possible to recruit qualified and experienced vocational teachers. This contrasts with earlier studies by Advant (1985) and Dhamankar (1985) which found there was a shortage of qualified staff. This was in part because they viewed as the main criteria they used when selecting new teachers their academic and professional qualifications. 90% of the Principals rated as very important the teachers academic qualifications and 95% their professional qualifications. Those Principals who felt it was not possible to recruit qualified and experienced teachers viewed the qualities required in broader terms and referred in particular to applicants' lack of relevant industrial experience and that vocational education was not attractive to good teachers. In most cases however Principals had discounted the possibility of attracting teachers with industrial and practical experience. Only 24% of Principals rated industrial experience as very important and 35% practical experience. 47% of Principals responded that the views of the Trust members were highly important when new teachers were selected for vocational courses. (see Table 4 in Appendix 11)

Teachers tended to view the process of obtaining a post in vocational education in a different way. While recognising the importance of academic qualifications they viewed the obtaining of a post as dependent on personal contacts and the ability to make a donation. 36% of teachers viewed making a donation as very important in their obtaining a post , 20% personal contacts and 19% contact with the Principal. The role of donations in obtaining posts is clearly difficult to research and the question was asked again in impersonal terms. In response to the question "How many teachers obtained their job by making a personal donation?" 61% of teachers replied that most teachers had obtained their job in this way. Only 2% of teachers replied that no teachers had obtained their job in this way. There were interesting variations between areas in responses to this question. 69% of teachers in urban areas replied that most teachers had obtained their job in this way as opposed to only 31% in rural areas. (see Table 5 in Appendix 11). This is indicative of the attractiveness of teaching posts in urban areas where with a large number of applicants for each post, donations can be asked for and obtained. Teachers in urban areas, as a result of the wider opportunities for 'moonlighting', may be more able to pay the donations asked. In rural areas where they may be fewer applicants the process of asking for donations may be less frequently used. There were also variations in responses between teachers from different vocational areas. Teachers from Commerce were most likely to agree that most teachers had made a donation in taking up the post (see Table 5 in Appendix 11). Only 9% of teachers thought the system of caste reservation policy had been very important in their obtaining their post.

Once in post there was very limited movement between schools for vocational teachers. All the Principals agreed that there was less than 5% turnover in staff each year. There was the lack of an established career structure for vocational teachers. As mentioned previously no schools had established the position of Deputy head teacher (Vocational).

48% of Principals thought that the motivation of vocational teachers was higher than that of other teachers in the school, 24% thought there was no difference while 28% thought they were less motivated. The key areas identified by those Principals who thought vocational teachers' motivation was lower were their lack of status and qualifications and the lack of career progression. The Principals viewed assessment of teachers as taking place throughout the year. Nearly 80% of Principals claimed that teachers were assessed by continuous assessment of the teachers in the classroom and 70% by student opinion. Principals said that student pass rates and assessment by supervisors were less frequently used methods. If teachers were perceived to be failing in their duties the Principals normally would try to provide support within the school. Nearly 50% of the Principals agreed or strongly agreed that the current scheme for grading staff in relation to experience, qualifications and responsibilities was satisfactory. This view was not shared by the teachers with nearly three quarters of them disagreeing with this statement.

Principals did however consider that the current training of vocational teachers was not suitable. 90% of the Principals considered that the current teacher qualifications were inadequate for teaching on vocational courses. 63% felt that there should be special teacher training qualifications for vocational teachers and 37% that vocational teachers should have more practical and vocational experience as part of their training. 57% of Principals thought that many vocational staff needed some additional training, skills and experience. The areas of training that were most frequently identified by the Principals were practical or technical skills, professional or technical knowledge and experience of industry. Only a few Principals mentioned teaching skills as an area requiring more training or experience. Despite the identification of training needs, few Principals provided in-service training opportunities for their teachers. Only 24% of Principals provided such opportunities with the lack of appropriate courses, a lack of finance and a lack of interest on the part of the teachers presented as reasons for the lack of opportunities. Many Principals linked the teachers low level of interest to the lack of

relationship between in-service work and career progression. Some Principals were critical of the poor quality of the courses on offer while others mentioned distance as a problem.

Teachers views differed in some important respects from the Principals. Teachers viewed their training and qualifications in a more positive way. 71% of teachers felt they were adequately qualified for the job while 12% felt they were over-qualified and 17% under-qualified. Those who were under-qualified felt that more in-service courses and on-the-job training were required. However, among the overall sample, it was the professional topics rather than the industrial ones which were the most highly valued by the teachers. 48% of the teachers agreed that courses had been arranged by the Education Department and short term courses focusing on professional topics were seen as the most valuable.

The students

In most of the schools (95%) the Secondary School Leaving Certificate was the basic requirement for enrolment of students in the vocational course. Over half the Principals responded that the student interests were considered in enrolling students on vocational courses. Other means of selection such as written examinations, interviews, aptitude tests, practical tests, health examinations or the recommendation of industries were much less frequently used in the admission process (see Table 4.5).

Table 4.5
Method of selection of vocational students

Method of selection	Nos. of Principals indicating use (N=21)	% of all Principals
Academic Qualification	20	95
Student Interest	12	57
By Interview	4	19
Government Suggestion	3	14
Practical Test	2	10
By Aptitude Test	1	5
Recommendation of Industry	1	5
Non selective apart from minimum qualification	1	5
Health Examination	0	0
By written examination	0	0

The majority of the Principals expected to recruit most of their vocational students from their own secondary school. Only 6 Principals recruited their students mainly from other schools. Most of the Principals focused on recruiting students from the local town or city and only 3 looked more widely for students. Only 9 of the Principals had a special section of their budget committed to support the selection process through dissemination of information.

Comparison of the characteristics of vocational with general education students was not possible. However clear patterns can be seen from an analysis of the characteristics of vocational students and interesting variations can be found between the characteristics of students taking different vocational courses.

Table 4.6

Qualifications of vocational students by Course

Details of Vocational Students		Total	Commerce	Technical	Home-science	Agriculture
1. S.S.C.		514	192	60	243	19
Grade	First Class	176 (34%)	77 (40%)	29 (48%)	65 (27%)	05 (26%)
	Second Class	287 (56%)	95 (50%)	27 (45%)	156 (64%)	09 (47%)
	Third Class	51 (10%)	20 (10%)	4 (7%)	22 (9%)	05 (26%)
Trial	First Trial	372 (72%)	150 (81%)	53 (84%)	156 (65%)	13 (68%)
	Second Trial	117 (23%)	29 (16%)	7 (11%)	75 (31%)	06 (32%)
	Third and more Trial	17 (3%)	06 (3%)	03 (5%)	08 (3%)	--
2. H.S.C		13	-	-	-	-
Grade	First Class	4	-	-	-	-
	Second Class	9	-	-	-	-

It can be seen from Table 4.6 that Commerce and Technical courses (40% and 48% respectively) attract more students with First Class Certificates than Home Science (27%) and Agriculture (26%) courses as well as more students who have passed the Certificate at their first trial. Despite the state education authority ruling forbidding H.S.C. students from enrolling for vocational courses there were in fact 13 such students in this sample who had attained this qualification.

Gender

There were interesting variations in the proportions of male and female students in vocational secondary education between the urban and rural areas. As can be seen from Table 4.7 vocational secondary education appears to be more attractive to boys in rural areas and girls in urban areas.

Table 4.7
Vocational course students gender differences by Area

Gender	Area	Numbers	Percentage
Boys	Urban	84	36%
	Rural	149	64%
Girls	Urban	249	80%
	Rural	64	20%

There are also marked variations between the genders in terms of the courses studied. It can be seen from Table 6 in Appendix 11 that all the students undertaking Home Science are female while all those undertaking Technical and Agriculture courses are male. Commerce is the only vocational course with both male and female students. This applies to all of the courses within the Commerce trade (see Table 6 in Appendix 11).

There are also marked differences between the courses chosen by students of different gender from different areas. Female students in urban areas choose Commerce as well as Home Science while those in rural areas choose Home Science almost totally. Male students in urban areas choose Commerce followed by Technical courses while those in rural areas choose Technical followed by Commerce courses.

There were also differences relating to the prior academic achievements of students from different genders.

Table 4.8
Prior qualifications of vocational students by Gender

Class in S.S.C	Boys	Girls
First Class	80 (41%)	96 (30%)
Second Class	92 (47%)	195 (61%)
Third Class	23 (12%)	28 (9%)

In interpreting Table 4.8 it is important to consider the relationship between the vocational course studied and the prior qualifications of the students. From Table 4.6 it can be seen that the courses with a high proportion of males such as the Technical courses attract students with higher entry qualifications than courses such as Home Science which attract female students. When an area such as Commerce is considered which enrols both male and female students little difference is found in the entry qualifications. 40% of boys undertaking the Commerce course had a First Class Certificate and 41% of the girls had.

Caste

If the figures are compared with the Gujarat population as a whole (see Table 2.10 in Chapter Two) it can be seen that members of Scheduled Castes, Scheduled Tribes and Socially and Educationally Backward Castes are slightly over-represented in the vocational student population. This contrasts with previous studies in Karnataka, Maharashtra and Gujarat which indicated that there was even greater over representation of students from Scheduled Castes, Scheduled Tribes and Socially and Educationally Backward Castes.

Table 4.9

Different caste representation in Vocational Education

Details of Vocational Students (Number of students)	Total	Commerce	Technical	Home-science	Agriculture
General Caste	297 (55%)	111 (38%)	28 (9%)	146 (49%)	12 (4%)
Scheduled Caste	71 (13%)	32 (45%)	05 (7%)	30 (42%)	04 (6%)
Scheduled Tribe	101 (19%)	27 (27%)	09 (9%)	62 (61%)	03 (3%)
Socially and Educationally Backward Caste	74 (13%)	37 (50%)	22 (30%)	15 (20%)	--

Vocational Family Background of Respondent

160 (29%) students came from a family background which involved their own business. It should noted however that the majority of people in Gujarat derive their livelihood from some form of self-employment based as craftsmen. This is significantly different from the West, where the majority of people would be engaged in some of paid employment. 143 (26%) students came from a background where the main breadwinner was in some form of government employment. It should be noted that government servants are not exclusively civil servants but also include people employed in nationalised enterprises such as Banks. 83 (15%) students came from a background where the family income was derived from farming. 74 (12%) students came from a background where the main family income derived from employment in the private sector. 49 (9%) students came from a family background of unskilled labouring. 33 (6%) students came from a background of having the main family income derived from

farm working. 13 (3%) students came from a background where the main breadwinner was unemployed. It should noted that unemployed does not mean a lack of income. In the absence of a welfare system, the family would be deriving some form of a income through other members of the family.

Family Educational Background

Table 4.10 shows the family educational background of the students. The contrast between the previous and present generation's experience in the Indian system is evident. Over half of the students had fathers whose highest level of education was the primary phase and nearly 80% had mothers whose highest level of education was the primary phase. Low levels of education of family members were more likely to be found in rural areas than urban areas. There were no major variations in terms of family educational levels by the courses students were studying.

Table 4.10
Highest level of education attended by family members of students

Level of Education (percentage)	Father %	Mother %	Brother %	Sister %
Illiterate	11	29	3	1
Primary	44	50	33	33
Secondary	28	20	35	44
Graduates	16	1	25	19
Double Graduate	1	0	4	3

Economic background of the students

172 (31%) students came from families with total income in the range RS 1,500 to 2,500 per month. This is well above the average income of approximately RS 700 per month for the state as a whole. 127 (24%) students came from families with monthly incomes in the range of RS 1000 to 1500. 106 (20%) students came from a families with monthly income in the range RS 2500 to 5000. 70 (13%) students came from families with incomes in the range RS 1000 or less. 65 (12%) students came from families with monthly income in excess of RS 5,000. The findings of this study contrast with those of CASE (1985) who found a higher proportion of students from high and middle income families. This study points to a higher proportion coming from middle and lower income families.

Students' views of vocational education

Students reported that their awareness of vocational education came late in their educational careers. As can be seen from Table 7 in Appendix 11, 73% of the students did not become aware of vocational secondary education until they had passed the Secondary Schools Examination Certificate. Students' assessment of the quality of the guidance they had received showed that the most frequently used sources were rated the most highly. In particular advice provided by school teachers was rated as good prior to starting the course by 68% of the students and 50% rated as good that provided by their previous school . Formal support agencies were often seen as providing poor advice. 40% of the students rated the advice given by the Careers Service as poor and 34% that provided by government agencies. Only 19% of students rated as good the advice they received from social and community leaders (Table 8 and Table 9 in Appendix 11).

Students Reasons for Undertaking Vocational Secondary Education

The reasons students decided to undertake the vocational secondary education course reveal their perceptions of the course and its educational and social standing. For many students enrolment on a Vocational Secondary course was seen as a 'second choice'. Over 50% of the students rated as highly important or of some importance in their decision to undertake the course their non-acceptance on the course they would have preferred to study. Students undertaking the technical and agriculture courses were significantly more likely to rate these statements as of importance than students undertaking the commerce or home science courses. Over 68% of the students rated as highly important in their decision the statement that the only alternative to the course was unemployment. The group of students who were least likely to have entered the course because the only alternative was unemployment were the Technical students.

Over half the students thought it was highly important in their decision to enter vocational secondary education that the course was easy to complete. The fact that the course led to a recognised national qualification was thought to be highly important by over 40% of the students. There were marked variations between students undertaking the different courses. Students on courses with recognised routeways to higher education namely Commerce and Home Science were more likely to consider this highly important. Only 18.8% of the Technical students and no Agriculture students considered this highly important. Nearly 50% of the students rated as highly important that the course leads to further study with again nearly 60% of Home Science students rating this very highly.

More positively, improving their job prospects was rated as highly important in the decision to undertake the course by nearly three quarters of the students as was wanting to learn new skills. Over 70% of students claimed their interest in the vocational area was highly important, nearly 65% rated as highly important the statement that the

course was a new one and over 55% that the latest technology is used in this course. Over 50% of the students rated as highly important that the course led to a good chance of getting a job. There was general agreement on this apart from Agriculture where only 26.3% of students thought this had been highly important.

Fewer students saw the good reputation of vocational education, locally and regionally as important in their decision. About 40% of the students claimed that the course's good reputation locally and regionally was highly important in their decision to undertake the course. Those undertaking the Agriculture course were most likely to consider local or regional reputation as of little or no importance. 73.7% of Agriculture students thought that the course's good reputation locally was of no importance in their decision to enter the course.

Other important factors were that friends and family recommended the course which was seen as highly important by over 40% of the students and that the course was near to where the students lived seen as highly important by under 40% of the students. Over 30% of the students rated as highly important that the course was related to their family occupation (see Table 10 in Appendix 11 for details).

The majority of students felt that the choice they made to come on the vocational course was right and that their views were representative of all students.

4.3 THE CURRICULUM

In discussing the views of the vocational curriculum held by the Principals and the teachers it is important to recognise that at the local level they do not feel informed by developments at the regional and national level. Despite the existence of a National Development Plan for Vocational Education only 14% of Principals and 7% of teachers strongly agreed that it existed. The role of central and state bodies in monitoring the

curriculum was also not felt to be important by Principals and teachers. Only 19% of Principals and 12% of teachers strongly agreed with the statement that the quality of vocational education is monitored by the Central or State government. The role of the State Education Department in supporting planning and implementation was also not seen as important by Principals and teachers. However 62% of principals and 73% of teachers agreed or strongly agreed that the course objectives expressed and related to training needs are satisfactory.

From the Principals' point of view the strengths of the vocational course are its clear description of the examination systems and that the school buildings and materials for training are available. While teachers support the Principals' views on the examination system, 60% of teachers disagreed that the availability of materials and their use in training was satisfactory. Not surprisingly nearly 60% of the Principals strongly agreed with the statement that the school was well managed regarding management style and its effectiveness but 65% of teachers disagreed or strongly disagreed with this statement.

Despite the agreement with the general course objectives Principals and teachers were in general agreement that many of the features of an effective vocational curriculum were not in place. Principals and teachers were agreed that the curricula and syllabuses were not reviewed and revised regularly, that the theoretical and practical course were not co-ordinated, that the courses were not related to the needs of local industry, that they were not related to future development needs, that the content of the curricula did not provide an appropriate level of practical training, that there was a lack of supportive careers education and guidance, that there was no satisfactory scheme for assisting students to find employment and there were few opportunities for local industry to be involved in courses or for teachers to be attached to local industry. Principals were significantly more likely than teachers to agree that the courses did not prepare students for employment (see Table 11 in Appendix 11).

Curriculum Content

The majority of students (86%) reported that the courses met their expectations. The main reasons presented by those students disappointed with the course were too much theory and the non-availability of books.

There were major differences between teachers and students in terms of their perceptions of the demands of the curriculum content. 69% of teachers felt that the level of course theory was about right in terms of the demands it made and 63% the practical work. However 46% of students felt the demands of course theory and 52% the demands of practical work were too easy . Under 20% of both teachers and students felt the demands were too difficult for theory and practical work.

In viewing teacher and student views on curriculum content it is important to keep in mind the later destinations of students. Given that most of the students will enter higher education after the course it was surprising to find that the general view held by both teachers and students was that the key elements of the vocational course were the work in vocational subjects and Entrepreneurship. 68% of teachers and 72% of students felt that the emphasis given to vocational subjects should be increased and 71% of teachers and 79% of students felt the emphasis given to Entrepreneurship should be increased. Moreover the majority of teachers and students felt that the emphasis given to Language subjects and General Foundation subjects should be decreased. Over three quarters of the teachers and students felt that in terms of their relevance to their future Vocational Subjects and Entrepreneurship were of considerable relevance while the majority of teachers felt that the Language subject and the General Foundation subject were of little or some relevance.

The view of the importance of the vocational is also seen in that both teachers and students felt that the amount of time devoted to the curriculum content most specifically

related to the vocational area should be increased. 74% of teachers and 76% of students felt that the time given to Entrepreneurship should be increased while 68% and 54% respectively felt that the time devoted to Vocational subjects should be increased. Despite the numbers who felt that more time should be devoted to these curriculum areas, only 34% of teachers and 21% of students felt that the time devoted to Language study should be decreased and 15% and 18% respectively the time devoted to General Foundation subjects.

Both teachers and students felt that the amount of time devoted to both practical work and theoretical work in Entrepreneurship and the main Vocational subject should be increased. In Entrepreneurship (81% and 76%) and the main Vocational subject (70% and 69% respectively) of teachers felt the time should be increased for practical work while in relation to theoretical work 54% and 66% respectively felt the time should be increased for Entrepreneurship and 38% and 61% for the main Vocational subject.

However both teachers and students, while rating highly the value of vocational courses and the entrepreneurship course, felt that the quality of the course should be improved. Over half the teachers and students felt that these courses should be improved (see Table 12 in Appendix 11).

The limited observations made during the fieldwork showed that across the different vocational courses the main teaching method used was the lecturing method. Teachers used sets of notes which were dictated to the students. There were few opportunities for student involvement and there was little or no use of audio-visual aids to illustrate the lectures. In discussions with teachers there was limited awareness of other approaches.

4.4 PHYSICAL RESOURCES

In terms of the physical resources available in the school there were sharply differing views of their quality held by Principals and teachers. 71% of Principals agreed strongly that the building and services were maintained satisfactorily in their school with 76% agreeing strongly that the availability of materials and their use in the training were satisfactory. Many of the Principals felt that the Government Grant that they received was enough or more than enough for the support of the physical resources in the school. As can be seen from Table 4.11 more than half the Principals agreed that the grant received for classrooms, library, educational equipment and the administrative service was adequate. However 58% of the teachers agreed that the equipment used in the school was inferior in quality to that used in industries. Moreover a majority of the Principals considered the grants for special laboratories, special workshops, building maintenance and students' practical materials were inadequate.

Table 4.11
Principals' views of the adequacy of the grant received from the government

Name of Physical Resources		more enough	enough	not enough
Class-rooms	%	25	30	45
Special workshop	%	20	30	50
Building and maintenance	%	20	25	55
Special laboratory	%	14	29	57
Educational equipment	%	14	38	48
Administrative service	%	24	52	24
Library	%	10	45	45
Student's practical materials	%	5	40	55

However this view was not shared by teachers. Only 44% of teachers agreed strongly that the buildings and services were maintained satisfactorily and 20% that the availability of materials and their use in training was satisfactory. Of greater concern was that 60% of teachers disagreed that the availability of materials and their use in training was satisfactory.

Students showed a greater appreciation of the facilities and resources. In response to the items contained in Question 15 in the students questionnaire (see Table 13 in Appendix 11) at least three fifths of the students found each item mentioned satisfactory. The buildings and general environment of the school were considered satisfactory by over four-fifths of the students. In areas such as the library, laboratory and workshops students were more likely to assess the facilities as satisfactory than the teachers. For example, 77% of students rated the laboratory and workshop facilities as satisfactory compared with 54% of the teachers.

Observation carried out during the fieldwork showed that the school libraries contained very few resources relating to the vocational studies courses and there was little or no support material for the teaching in the form of audio-tapes, video-tapes or equipment such as Overhead Projectors.

Regulations relating to class size in vocational schools have changed many times in Gujarat. From 1987 onwards the minimum class size was 50 per class but in 1992 this was reduced to 25. In 1995 it was again changed to 15 and most principals agreed there should be a government imposed minimum class size. However, in practice the problems in recruiting students meant that the majority of schools (16) had less than 10 students in the class with only 4 having between 11 to 20 and one single school of home science having over 20.

4.5 POST COURSE DESTINATIONS OF THE STUDENTS

As we have seen in earlier Chapters the intention behind the extension of vocational senior secondary education has been that graduates from the course should enter employment. We have already seen from the 'official statistics' relating to the state of Gujarat discussed in Chapter 2 that most graduates still enter higher education. There are a number of vocational routeways open to graduates of vocational courses. Amongst the most important of these are

(a) Apprenticeship

Apprenticeship is a way of combining practical experience with theory. Generally there is a formal contract between an employer and a trainee under which the trainee agrees to work for the employer in return for practical experience which makes him a skilled worker. He gets a small wage till he reaches the level of a skilled worker. Thus the tradition of financing apprenticeship involves sharing of costs between employers and trainees (Woodhall 1987). In India, companies are obliged under the provisions of the Apprentices Act to accept a certain percentage of trained technical people for apprenticeship ranging from a period of 1 - 2 years. Students on completing vocational secondary education can apply for a vocational apprenticeship lasting two years with government, semi-government or public companies. 16 out of the 27 vocational courses have been sanctioned for apprenticeship in Gujarat (see Table 14 in Appendix 11). In Gujarat there are over 1400 vocational apprentice places available mainly in the area of Commerce. Although there are over 1400 places available according to official statistics, fewer real positions are available. Students who gain apprenticeships are paid a stipend of at least 365 rupees per month. Gaining an apprenticeship does not guarantee a permanent job and often on completion of an apprenticeship students are placed on waiting lists for jobs.

(b) Self Employment or Family Firm

Students can enter self employment relying on support from their wider family or may obtain a post in their family's business. Students considering self employment are eligible for a government loan of up to 50,000 rupees from government schemes such as the Prime Minister's Employment Scheme to help them with their start up costs. Such loans are in reality difficult to obtain and may be dependent on access to social networks and the student's ability or willingness to provide security for the loan.

(c) Wage Employment

Students can apply for a job with a private company in small scale industries where they will be paid a wage.

An examination of the routes taken by students after completion of the vocational courses in the sample schools raises critical questions on their role in meeting the needs of local business and industry. The researcher attempted to get information about school results and placement position of students in each sample school. However some schools were unwilling or unable to provide the information while others were unwilling for the information to be linked to the name of their school. Seven schools were able to provide information on the success rates of students on the vocational course and their later career routes (see Table 4.12).

Table 4.12

Examination results and later career routes of vocational course students in seven schools 1989-95

Year	Appeared in exam N	Passed N	Went to Higher Education N	Became self employed or wage employed N	Joined apprentice-ship N	Unemployed or remain at home N
1989-90	94	94	37	11	2	44
1990-91	88	72	35	13	3	21
1991-92	165	160	113	10	5	32
1992-93	121	112	83	13	5	11
1993-94	166	156	97	24	10	25
1994-95	96	92	59	21	4	8
Total	730	686	424	92	29	141
percentage	100%	94%	62%	13%	4%	21%

It can be seen from Table 4.12 that in these 7 schools there was a high pass rate in the examination if the students reached this stage. However contrary to government intentions most of the students joined higher education after completion of vocational education with only 4% entering apprenticeship and 13% self employment. 21% of students either stayed at home or were unemployed after completion of the course. The pattern of change over time is one of an increasing proportion of students enrolling in higher education after completing the course and hardly any change in the proportion of students entering self employment or apprenticeship. This tension between vocational courses designed to meet the needs of local business and industry but effectively operating as a second chance route into higher education continues to be the central question facing vocational education.

4.6 GENERAL LINKS WITH INDUSTRY

In this section this tension is explored through an examination of the links between Higher Secondary Vocational education and local industry from a variety of different perspectives. The Principals of the schools assessed the interest of local industrialists in their vocational courses as low. 12 (57%) of them assessed it as very low and with only 1 (5%) assessing it as considerable and 1 (5%) as very high. Both of these Principals were to be found in schools in urban areas. Over four fifths of Principals and teachers disagreed with the statement that schools and industry participated in joint publicity or similar supporting activities. The main type of support provided by industry to schools was identified as allowing students to visit industry (86% of Principals and 62% of employers) and industrialists giving talks in schools (38% of Principals and 45% of employers). The other categories of help identified in the question were not being provided according to both Principals and employers. These included giving schools financial support, providing schools with old machinery, industrialists helping teachers with the development of curriculum materials and jointly planning projects, sitting on examination and curriculum committees or providing students with careers advice.

Few Principals and teachers felt that there were regular arrangements for staff to be attached to industry. Only 4 of the 21 schools surveyed had a programme of on-the-job training in their vocational schools. The length of this programmes of the programmes varied with schools reporting programmes of blocks of 1,2,4 and 7 weeks. 3 of the schools who had programmes of on-the-job training were to be found in urban areas. No schools reported programmes of block release training sponsored by industry as reported in evaluations of developments in other states (see, for example, the accounts of developments in Kerala and Tamil Nadu in Mishra (1996 p22). No school reported receiving information from industry on student performance on-the-job and there were no reports of efforts being made to integrate the on-the-job training more effectively into the course. Despite nearly 60% of the Principals and teachers agreeing

that their school was creating a general work environment similar to industry, observation during the field work indicated that schools were generally failing to create an in-school environment similar or nearly similar to industry with respect to the general work environment, discipline, time keeping and safety procedures. Four schools with home science courses were attempting to simulate within the school industrial conditions by setting up mini-companies along the lines to be found in Western societies (see for details, Her Majesty's Inspectorate Report 1990). There were indications that these new approaches were affecting student and staff involvement.

After completion of the course schools attempted to place their students into vocational apprenticeships. 76% of the Principals reported that they sent all the students names, addresses and results to the Western Regional Apprenticeship Office, 71% to local industry and business and 62% to the Employment Office. However there was no person within the school or at district level who was centrally concerned with the placement of students.

Equally there were no organisations or individuals at the district or state level whose objective was to support the development of links between schools and industry and no school reported having a member of staff whose responsibility was liaison with industry. None of the teachers reported receiving any staff development in this area. Despite their limited industrial experience no teacher had been attached to industry for further experience and teachers felt they were left to use their 'common sense' in developing further links with industry. Moreover some teachers reported there were barriers in establishing relationships with industry in particular the need to make gifts to maintain relationships. There were no signs of industries visiting schools to select apprentices and there were no indications of schools following up their own vocational graduates to evaluate their success in the workplace.

The employers themselves claimed little familiarity with the structure of vocational education. 91% expressed a lack of familiarity with the Government Apprenticeship Act, 83% with Educational Reform in secondary education, 83% claimed a lack of knowledge of their local vocational school and 72% of local vocational school courses. Only 26% of the employers had made direct contact with their local vocational school. Most of the contacts had been made through formal communication from the government (67%), through contact with vocational students (60%) or through vocational school teachers (25%).

No indications were found of the present involvement of industrialists on governing bodies of individual schools or advisory committees associated with vocational education curriculum and assessment. Recently a state level Vocational Education Council has been set up which includes two representatives from trade unions and one from the Gujarat Business Association. Employers were asked whether they would be willing to extend their involvement with vocational education. Over a third indicated they would be willing to serve on Committees at the state level concerned with developing syllabi and improving vocational education but under 10% were willing to be further involved in vocational school management in their area.

In this section we will explore some of the difficulties faced in linking successful completion of the vocational course with employment. This will be done by drawing on the views of the Principals, teachers and current students as well as samples of employers and ex-students.

The Principals and student views

The Principals took a very optimistic view of the destinations of their former students. Their response to the question asking how many students went to different destinations

having successfully completed the course indicated that 43% of Principals felt that almost all of the students went on to Apprenticeship whereas only 14% thought almost all of the students went on to higher education (see Table 15 in Appendix 11).

Current students had an equally optimistic view of their chances at the end of the course. 61% felt they had a good chance of setting up their own business with 57% rating their chances of obtaining a government loan as good. 50% rated their chances of working in the family firm as good, 51% entering higher education while 43% thought their chances of obtaining an Apprenticeship and gaining of increasing their social status were good. Only 28% of students thought their chances of paid employment good (see Table 16 in Appendix 11).

There was evidence of major variations among the student body in terms of their perceptions of their chances after the course. There were clear indications that students in urban areas considered their chances of obtaining employment were considerably greater than those in rural areas. Moreover boys were more likely than girls to consider their chances of entering apprenticeships and higher education as good. There were indications of variations between the different courses in terms of their views of future chances. Those students undertaking the Agriculture course were least likely to consider their chances were good of finding paid employment and placed great emphasis on the possibility of setting up their own business with the help of a government loan. These findings support the views of writers such as Foster (1965) who have indicated the crucial importance of the broader economic context in structuring the aspirations of students undertaking vocational education courses.

Students aspirations were in other ways much more realistic. In response to the question "Are you prepared to enter work unrelated to your course if you can't find relevant work ?" 73% of the students answered Yes and 27 % answered No. There were again interesting variations within the student body. Nearly 90% of Commerce

and Technical students were prepared to enter work unrelated to their course but only 42% of Home Economics students and 66% of Agriculture students. There were indications that students from poorer backgrounds were more willing to consider a variety of options. 84% of students whose family-income was less than Rs 1000 and 85% of students whose family background was unemployment were prepared to enter work unrelated to their course. It was also interesting that 83% of students who had obtained a third class in their S.S.C.L. exam were also willing to enter work unrelated to their course.

The views of the employers

The employers were asked about their recruitment policies, their views of the young people they recruited and about their level of support for vocational higher secondary education. It must be kept in mind that the sample of employers was drawn from government, semi-government and private/public companies. The views therefore are concentrated on those students who leave vocational higher secondary education and enter a vocational apprenticeship and wage employment.

The employers reported a growing number of vocational apprentices from 98 in 1993 to 192 in 1995. However, they reported that the proportion of apprentices gaining a permanent position after appointment has risen from only 9% in 1993 to 11% in 1995. Employers reported on the ease with which they could recruit workers for the positions in their company (see Table 4.13).

Table 4.13
Ease of recruitment of different workers

Details of workers		Very easily	Easily	With some difficulties	With great difficulties
Unskilled workers	%	79	21	0	0
Semi-skilled workers	%	51	31	18	00
Skilled workers	%	2	14	40	44
Vocational apprentices	%	45	37	18	00

The only category where employers reported difficulties in recruiting workers was skilled workers. In the context of India, these would be those with Master's degrees in specialist areas such as Electrical Engineering or Computing Software.

The main reasons why employers choose to employ vocational apprentices were that they are required to do so by government imposed quotas, they are easily available and they are cheap. The only positive statement which employers mentioned was that they followed instructions better. Factors such as they are more enthusiastic or display more initiative were not highly rated by employers (see Table 17 in Appendix 11).

Employers used formal channels to reach potential apprentices with most relying on newspapers, the Government Employment Exchange Department and contacting vocational schools. Informal networks were not used by any of the employers and given the ease with which employers were able to recruit vocational apprentices neither were private employment agencies. Over 70% of employers reported receiving recommendation letters regarding the appointment of vocational apprentices from schools, 46% from Government Apprenticeship Board, 28% from Government Employment Department and only 19% from District Education Department. No

employers reported receiving recommendation letters from local community leaders or from other employers.

Employers relied heavily on academic qualifications when selecting vocational apprentices. In the sample of ex-students it was found that all vocational apprentices had obtained a First Class Higher Secondary School Certificate. While in other more general posts employers used relevant experience, references from former employers and personal recommendations, for apprentices the overwhelming criteria used was academic qualifications held. The influence of the formal state agencies in the process was very limited with the school having been considered more important than the Apprenticeship Board (see Table 18 in Appendix 11).

Employers' views of the Vocational Apprentices

Employers views of their vocational apprentices varied considerably. 22% of employers were very satisfied overall with vocational apprentices, 49% were satisfied while 29% felt they were unsatisfactory. 12% rated their apprentices as very committed to their business, 41% as committed while 47% felt that the apprentices were insufficiently committed. The same variation in views can be seen in response to the question as to how they rated vocational apprentices with workers in the same occupation but with a different educational background. 36% felt they were better, 57% there was no difference while 7% felt they were not as good. The main reasons produced by the group that felt vocational apprentices were not as good as other workers was their lack of practical knowledge and skills and their lack of acquaintance with machinery in the workplace.

For undertaking jobs in their company, the employers identified a range of skills which they considered important. Most were assessed as of equal value although numerical skills was assessed by only 17% of the employers as highly important. Employers rated

their present apprentices in terms of the same skills. Whereas the vocational apprentices skills in working well with others were rated highly or very highly by over 70% of the employers, there were a number of skill areas where employers rated the vocational apprentices skills as adequate or poor . Among these were practical skills rated poor by 38% of employers, using their initiative (28%), problem solving skills (26%) and communication skills (24%) (see Table 19 in Appendix 11).

71% of employers replied that they would not recommend other employers to employ more vocational apprentices. The reasons they gave were that other employers have their own policy and would not value recommendations. 29% of employers were more positive and in their response to this open ended question mentioned the need to help vocational school students as well as their enthusiasm and productivity.

Ex-students views

For 86% of the ex-students this was their first job. There were some indications that ex-students in rural areas were more likely to have undertaken more than one job and that students from the less privileged castes were also more likely to have undertaken more than one job.

Comparison of a range of measures of the family and social background of the ex-students compared with that of the vocational course student body provides some support for the view that it is students from poorer, less privileged backgrounds who are more likely to enter the vocational routeways open to secondary vocational education graduates.

First, there were interesting variations in the caste backgrounds of the ex-students who had entered apprenticeships as can be seen in Table 4.14. Ex-students were less likely to come from General Caste backgrounds and more likely to come from Socially and

Educationally Backward Caste backgrounds than the general sample of students. This lends support to the view that students from General Caste backgrounds were more likely to enter higher education than other employment based options.

Table 4.14
Comparison of ex-students with vocational students by Caste

Name of Caste	% in Students	% in Ex-Students	Differences
General Caste	55	27	-28
Scheduled Caste	13	16	03
Scheduled Tribe	19	24	05
S.E.B.C. and others	13	33	20

Further support is provided by a comparison of the family educational background of ex-students in employment with that of the student body. Table 4.15 shows that ex-students in paid employment or apprenticeship are more drawn from family background where the highest level of education attained was primary or illiterate.

Table 4.15
Comparison of ex-students with vocational students by highest level of education attended by Family

Level of Education (percentage)	Father in %		Difference	Mother in %		Difference
	Student	Ex-student		Student	Ex-student	
Illiterate	11	22	11	29	36	7
Primary	44	59	15	50	58	8
Secondary	28	13	-15	20	06	-14
Graduates	16	6	-10	1	0	-1
Double Graduate	1	0	-1	0	0	0

Table 4.16 shows that 33% of the ex-students came from a background where the father was employed in private industry. In a Gujarati context, ex-student family members whose fathers were employed in private industry would be considered to have fewer privileges than those whose family members were employed in the government service or had their own business or were farmers. Discussions with the ex-students revealed that a number had little alternative, they felt they had to find employment as soon as possible as the family income was small. Those whose family background was farming frequently aspired to enter a white collar job and in this they were supported by their family. Some of the students whose fathers were unemployed had been unable to take up places offered for further study because of the lack of income in the family.

Table 4.16
Comparison of ex-students with vocational students by Family background

Family background	% of Students	% of ex-students	Difference
Government Service	26	18	-8
Private industry	12	33	21
Own Business	29	21	-8
Partnership	0	2	2
Worker	9	14	5
Farmer	15	2	-13
Farm worker	6	5	-1
Unemployment	3	5	2

Table 4.17 raises interesting questions about pathways taken by students after the completion of vocational schooling. Students who come from poorer backgrounds are more likely to obtain an apprenticeship or a job than those who come from more

affluent backgrounds. 37% of vocational school students come from family backgrounds with an income below 1500 rupees per month while 78% of the ex-vocational school students come from such a background.

Table 4.17
Comparison of Ex-students with Vocational Students by Family Income

Income Level per month	% of students	% of ex-students	Differences
Below 1000	13	37	24
Between 1000 to 1500	24	41	17
Between 1500 to 2500	31	19	-12
Between 2500 to 5000	20	2	-18
More than 5000	12	1	-11

The majority of ex-students felt they had obtained their position largely as a result of their own efforts. Formal support agencies which were known to them such as the school were seen as of some importance. However the more distant formal agencies such as the Government Employment Department and the Western Apprenticeship Board were seen as of little or no importance. Equally links with industry made during the vocational course were seen as of little or no importance (see Table 20 in Appendix 11).

The positions of the ex-students

There were interesting variations in the ex-student body in the ease or difficulty with which they had obtained positions. In response to the question "How did you obtain your present job ?" 53% of total students reported great difficulties, 32% some difficulties, 8% little difficulties and only 7% obtained a position with no difficulties. Students in urban areas reported fewer difficulties than those in rural areas. 61% in

rural areas reported great difficulties compared with 49% in urban areas. There were also across variations across the vocational courses. 62% of those from the Technical courses reported great difficulties, 56% from Commerce, 40% from Home Science and 25% from Agriculture.

Similar differences were found in response to the question "When did you find your present job?" Only 1% of ex-students had found a job before the completion of the course. 15% in up to 6 months after the course, 44% between 6 and 12 months and 40% took over 12 months after completing the course. Table 21 in Appendix 11 indicates that ex-students in urban areas found their positions quicker than those in rural areas and that Home Science students were more likely to find positions more quickly than the other vocational areas. Puzzling given the supposed relationship between the courses and employment needs is that 94.1% of graduates of the Technical courses took more than 6 months to find a position (see Table 21 in Appendix 11).

Of the positions held by the ex-students 41% were related to the area of the course while 59% were not. Of those whose jobs were not related 67% had tried but failed to obtain a related job, 10% did not wish to undertake a related job, 7% had a job but were still looking for a job related to course and 16% could not find a job close to their place of residence. Again there were interesting variations across the courses. The proportion of students not obtaining a related job was highest in commerce (64%) and agriculture (75%). Surprisingly in a state where agriculture is the principal employment 88% of those who had obtained a job unrelated to agriculture after studying agriculture had tried to obtain such a job.

Given the large number of ex-students undertaking work not related to their course, it was not surprising to find that only 45% thought that what they had learned during the course allowed them to perform successfully on the job and that only 29% thought the equipment they were working on in their post was similar to that in the vocational

courses. It was the practical elements of the course which were most highly rated with 86% rating work experience and 82% practical skills in vocational subjects and entrepreneurship as highly important for undertaking their present job effectively. Only 54% of ex-students rated theoretical knowledge in vocational subjects and entrepreneurship as highly important.

When forced to choose between the different elements of their vocational course in terms of helping them to be effective in their present job, 64% of ex-students choose vocational subjects, 22% Entrepreneurship, 11% General Foundation and 3% Language. When forced to choose three skills which have helped them to be effective in their present job, the most chosen were the ability to follow instructions and the ability to work well with others. The least chosen were numerical skills and the ability to use initiative..

The great majority of the students (90%) had expected that when they had passed the H.S.C. exam they would earn more than they were currently earning. Over half the students (52%) were earning between Rs. 500- 750 per month, 3% were earning below Rs. 500 and 6% more than Rs. 1000. About a third of the ex-students were spending all or more than they earned. Ex-students felt they were treated about the same as other employees in terms of the conditions they experienced in the workplace, the facilities they had access to and the training they received (see Table 22 in Appendix 11).

Asked about their current views of the course (see Table 4.18), 47% of the ex-students now wished they had not taken the vocational course with only 22% being glad that they had done the course. Again there were interesting urban / rural differences. 43% of ex-students from urban areas wished they had not taken the course compared with 58% from rural areas. 59% of ex-students from the Technical course wished they had not taken the vocational course compared with 25% from Agriculture.

Table 4.18

Ex-students current views on Vocational Course

		Name of Area		Name of Courses				Name of Castes			
Details	%	U %	R %	C %	T %	H %	A %	Gn %	SC %	ST %	SE %
I wish I had not taken a vocational course	47	43	58	46	59	43	25	39	61	47	50
I wish I had taken work rather than stay at school	20	20	19	16	22	21	25	15	17	19	27
I wish I had done another vocational course	11	12	07	11	06	14	17	15	05	15	03
I am glad that I did my particular vocational course	22	25	16	27	13	21	33	31	17	19	20

U - Urban **R** - Rural
C - Commerce **T** - Technical **H** - Home-Science **A** - Agriculture
Gn - General Caste **SC** - Scheduled Caste **ST**-Scheduled Tribe **SE**-Socially and Educationally Backward Caste

Even though the ex-students were now employed in one of the vocational pathways, a sizeable number still had aspirations to enter higher education. Asked what they intended to do next 41% indicated another job while 25% still indicated higher education. In terms of the impact of the enterprise programmes the numbers were disappointedly low with only 13% intending to start their own business and 9% enter the family occupation.

Over a half of the ex-students would not recommend to a friend or relative that they undertake the Higher Secondary School Certificate (Vocational). Those who were working in areas unrelated to their vocational course were more likely not to recommend the course as were students from rural areas and those who had undertaken the Agriculture course.

4.7 IMPROVEMENTS AND SUGGESTIONS

The Principals and teachers were asked at what stage vocational education should begin. The majority of both groups felt that higher secondary education was too late and indicated that they felt that it should start at the secondary stage.

Table 4.19
Stage at which vocational education should begin

Name of stage	Principals %	Teachers %
Primary	5	12
Secondary	86	72
At higher secondary	9	16

The various groups involved in higher secondary vocational education were asked what factors they felt would lead to improvement in vocational education. All were asked an identical question asking them to identify from a list the three factors that they felt would most improve the quality of vocational education. All the groups were also asked an open ended question on what thought were the best ways to improve vocational education.

Table 4.20

The three factors that would improve the quality of Vocational Education

Improvement name	Principal %	Teacher %	Student %	Ex-student %	Employer %
A guarantee of a job	52	41	17	45	34
Making the course more relevant to local needs	49	23	09	51	40
More opportunities for higher education	38	37	38	55	02
Start vocational courses at an earlier age	26	42	22	16	55
More opportunities for work experience during the course	13	25	17	24	45
Higher status for vocational education	29	26	55	09	00
Spend more time on practical course	10	26	22	23	08
Raise standard of teaching staff	14	13	13	09	34
Privatisation of vocational education	12	06	18	26	08
Improved equipment	19	13	25	10	02
Tighter discipline	00	02	16	27	23
Increase length of course	14	09	19	18	06
Provided better guidance during the course	19	06	12	25	00
Improved building	05	01	03	02	06

There are interesting variations in the factors identified by the different groups. For the Principals the guarantee of a job and making the course more relevant to local industry were seen as the most important factors. The Principal of a government school suggested that "the Government must assure the guarantee of a job, if she do (sic), we

can get lots of students". Another Principal of an agriculture school responded regretfully that "in the beginning we gave a guarantee of a job to the students and students took vocational courses but in the last three years only 7 students out of 82 got a job, so it is very difficult to face and answer the parents arguments and complaints about the security of a job after completion of the course". The Principal of a school in a rural area which runs the stenography course suggested "governments should make the course more relevant to local needs. Most of the students who got apprenticeships had found jobs in other district and urban areas". One of the Principals of an urban school based in an industrial area, suggested "local needs are totally different from our vocational courses".

A guarantee of a job is equally rated highly by teachers and ex-students. A teacher in a school in an urban area who as part of his job had to recruit students from the area so that class sizes fulfilled the government's minimum quota and hence keep vocational courses in the school, suggested "if both parents and students realised and trusted that after completion they will definitely get a job, we have not to go to anywhere (sic). The students comes to us, even we can attract more clever students towards vocational trade". One of the ex-students working in wage employment suggested and emphasised "to get an apprenticeship, I was ready to go anywhere in Gujarat. I applied more than a hundred times to various places but I could not get it, nowadays I have not got money for posting. At last I have joined in wage employment which is unrelated to my vocational course".

Making the course more relevant to local industry is rated highly by ex-students and employers. An employer from an urban area working in industry suggested "we need students to have more specific skills such as problem solving skills and communication skills and a background of English but existing apprentices do not have these skills". One of the employers suggested "students must have working experiences in local business or industry so that they can start up work immediately". One of the ex-

students working in apprenticeship suggested "if I did a course like a receptionist I could get the job easily because of the many industries and business there are surrounding my areas where I live".

For employers and teachers starting vocational courses at an earlier age is rated more highly than the guarantee of a job in terms of improving vocational education. Many teachers suggested "if we start vocational education at the secondary stage we can build positive attitudes and make students more skilled. If students came after completion of secondary schooling, they would be very serious about vocational education and show interest and be more productive". One of the employers from the chemical industry and the Manager of State Transport suggested "within two years you cannot create a good vocational apprentice, they should have more years in vocational education". The views of many teachers from all trades and both areas are represented by the following quotation "two years duration is very short to teach all vocational subjects from the start, we can only make students aware of them. If they have some general background of vocational education when they arrive our job becomes easier and we can concentrate and teach the more important aspects of vocational education".

All the groups, apart from the employers, emphasised the importance of extending the opportunities for higher education. This is still rated the most important factor by the ex-students and indicates the ways in which participating in vocational higher secondary education has not dampened their aspirations for higher education. Most of the Principals, teachers and students from all zones, areas and trades suggested that vocational higher secondary education must not be the terminal stage for students. The theme of their suggestions was that "there must be access to a specific higher education". One apprentice in a government department suggested "what should I do. After completion of the apprenticeship, no Government department would offer me a permanent job, the national bank would not give a loan, I have not got the confidence to start any business. At least I could carry on in higher education if there is opportunity".

Students chose the factor of increasing the status of vocational education as the most important factor. One of the ex-students working in the state fertiliser corporation drew attention to the low status of vocational education and suggested that "other staff treat us as less educated and from lower educational background". One of the ex- students working in a co-operative bank suggested "some time we have to work as a peon and make and serve tea to top personnel and clean the tables". 55% of the students chose this as one of their factors indicating their current perceptions of the low status of vocational education compared with the general course.

None of the groups placed a high degree of emphasis on the physical facilities of the course. The quality of the teaching staff and the overall discipline of the course were however seen as important factors by the employers.

Table 4.21 indicated the Principals views on key areas of government policy and practice. Principals were critical of the emphasis being given by central government to vocational education. Approximately four out of five Principals felt that the government was making insufficient efforts to make vocational education popular, in developing policy to involve industrialists in vocational education, in linking schools with industry and supporting students who have successfully completed the course.

Table 4.21

Principals' satisfaction with aspects of Government Practice in Vocational Education

Name of government practice		Satisfactory	Unsatisfactory
Link between schools and government	%	74	26
Grant policies for awarding grants	%	62	38
Inspection of school	%	62	38
Staff recruitment policy for vocational teachers	%	57	43
Plans for the future of Vocational Education	%	45	55
State government rules and regulation	%	44	56
Policies for increasing the priority attached to vocational education	%	38	62
Government attitudes towards vocational school	%	35	65
State policy for students admission	%	35	65
State policy for dismissal of staff	%	33	67
Personal administrative support provided by state	%	25	75
Policies for linking schools with industries	%	23	77
Facilities support students who have successfully completed the course	%	22	78
Policies to involve industry in vocational education	%	21	79
Government efforts to make vocational education popular.	%	19	81

A range of other suggestions were made. Some Principals suggested that vocational education should have a separate State Education Department. and that corruption in the Education Department should be removed. The Principal of a large urban school with a good reputation suggested that governments should remove all corrupted government officials and schools and should reward those schools who are undertaking good work in vocational education. It was accepted that some Principals were involved in

corruption but that this usually involved government officials as well. Another Principal of a school which had received an award from the central government wrote that government officials themselves knew little about vocational education and how to improve it, that they lacked the proper background and qualifications. When the researcher informally interviewed State education officials and those involved in planning in-service education there was little reference to developments in vocational education in other Indian states or in different countries and no reference to research studies. Among these top officials there was a puzzling lack of enthusiasm for improvement of vocational education and no indication of concerted discussion to identify strategies for improvement of vocational education. The Principal of a school specialising in the education of blind students based in an urban area suggested that the "government should give us special grants to run vocational trade courses for the blind students rather than provide equal funding for all vocational schools". Teachers had more restricted views of improvement and pointed, in particular, to their lack of training, their lack of involvement in management committees and the non-appointment of vice-principals.

In this Chapter the findings of the survey have been presented alongside evidence collected by other methods. In the Chapter Five the implications of the findings will be considered.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 IMPLICATIONS

In this conclusion the implications of the current study for the broad area of the role of vocational education in developing societies will be considered before a more detailed examination is made of the implications of the study for the development of vocational education in India and particularly in Gujarat.

In Chapter One the main debates surrounding the role of vocational education in developing societies were summarised. The diversification of curriculum in secondary schools was shown to be a common approach in most developing countries and was supported in large part by funding agencies such as the World Bank. The reasons and objectives for the establishment of these programmes have been generally the same throughout the developing world, although there are variations reflecting different historical, cultural and educational traditions. It is useful to examine the findings of the current study in relation to the key areas of debate.

1. The cost of and the returns to vocational education

The present study did not directly focus on the question of the costs and returns to vocational education. However some of the findings of the study provide supportive evidence for those who question whether the high costs of vocational education are compensated for by a high return. The study has identified that the costs of vocational education in Gujarat have been inflated by the presence of numbers of 'bogus students' and mis-management of the funds provided for vocational education. The costs to vocational education have often remained high even when particular schools have

closed their vocational courses. The teachers from these courses have remained as government employees and continue to draw their salaries from the vocational education budget even though they are no longer teaching on vocational courses. In 1993, 58 vocational teachers were surplus to requirements because of the closing down of 18 schools in Gujarat (Annual Report 1993-94 p.5). The high costs of vocational education are also related to the class size. In Gujarat the average class size of general education is 50 students while in vocational education it is much smaller and is falling from year to year (20 in 1993-94 and 15 in 1995-96).

In terms of the returns to vocational education the study has shown that only 4% of the students undertook an apprenticeship on successfully completing the vocational education course, 13% self employment or wage employment with 62% going on to higher education. Moreover of those who did obtain employment, a very small proportion were employed in an area of work related to their course. There was no vocational area of study where there was an appreciable market payoff for the vocational school graduate. Those in work who were traced by this study viewed their experience in vocational education in a largely negative way and were not willing to promote vocational education to new generations of students.

2. The relationships between involvement in vocational education and the world of work

This study provided confirmation of the view that in economies with surpluses of labour, employers are not likely to prefer vocational school graduates to graduates from the academic programme. The reasons why employers chose to employ graduates of vocational education were largely negative reasons such as government imposed quotas and their cheapness rather than any qualities provided by their vocational education. The employers' continuing reliance on academic qualifications as the main selection mechanism placed the vocational school graduates at a disadvantage. Employers were

critical of the qualities of some of the vocational school graduates with 47% of employers responding that their apprentices were insufficiently committed

The power of vocational schooling to change students' attitudes was also challenged by the findings of the study. The students enter vocational education as a second choice programme to academic education and even after completing the vocational school programme, still retain the aspiration to enter higher education. Even the small proportion of the students who obtained an apprenticeship still aspired to enter higher education.

The schools in the study lacked the facilities to provide high quality programmes and the teachers in the vocational programme themselves would rather have been involved in teaching the academic programmes. The teachers had good academic qualifications but lacked vocational experience and appropriate vocational qualifications. The management of the vocational schools was rarely undertaken by someone with vocational experience and few of the managers had good links with the industrial community. It was not surprising therefore to find that schools generally failed to create in-school environments similar or nearly similar to industry with respect to the general work environment, discipline, time keeping and safety procedures.

The growth of vocational education in Gujarat has not changed industrialists' views of the relationship between education and industry. The study has shown that industrialists have very little interest in vocational education and that there is little in the way of linkages between the vocational schools and their local industry. There was no involvement of industrialists on governing bodies of individual schools or advisory committees associated with vocational education curriculum and assessment at district or state level. There were no regular arrangements for industrialists to be directly involved in the school programmes and there were no programmes for teachers to visit industry to update their knowledge and skills.

There was within the system as a whole a general lack of attention to the relationship between vocational education and the world of work. Nobody at the school or district level was centrally concerned with establishing linkages between schools and industry and there were few indications of any monitoring of student experiences once they had left school. The majority of students who held apprenticeships or were wage employed had found their position with great difficulty and most of them had only found it 6 months after completing the vocational course. Of the positions held by the ex-students, 41% were related to the area of the course while 59% were not. The general problem identified in this study, as in other studies of vocational education, was not identified as a problem by the various stake holders in the system. 43% of Principals felt that almost all of the students completing the vocational course went on to apprenticeship when the overall figure was 4%.

3. Vocational Education and Equity

Researchers have pointed out that vocational education has played a significant role in the reproduction of inequality within society. There is a constant danger that vocational education will be seen to "provide a second-class education and track some individuals - lower class or lower caste, racial minorities and women - away from academic education and access to jobs of the highest pay and status". (Grubb 1985 p.529).

There are indications in the current study of the way this operates in a Gujarati context. In terms of overall student enrolment in the vocational programme it has been shown that members of lower castes - the Scheduled Castes, the Scheduled Tribes and the Socially and Educationally Backward Castes - are slightly over-represented in the vocational student population. It has also been shown that there is a strong relationship between gender and enrolment in specific programmes. In particular the Home Science course is totally female dominated and has no clear linkages with the world of work. In the area of Commerce there is male and female enrolment but the Technical and

Agriculture courses are almost totally dominated by males. There are also indications of different paths being taken in rural and urban areas. In the rural areas it is the boys who are the dominant group numerically in vocational education whereas in the urban areas it is the girls.

There is some evidence that in one of the lowest castes, the Socially and Educationally Backward Caste, boys rather than girls are enrolling in vocational education. Whereas in the other castes girls are the dominant group undertaking vocational education. This is also reflected in the courses undertaken by students from different caste backgrounds. Students from the Socially and Educationally Backward Caste are over-represented in Commerce and Technical courses and under-represented in Home Science and Agriculture.

There was some support for Loxley's (1983) finding that parents of students attending vocational schools tended to have less educated backgrounds. In the current study it was found that vocational education attracts a higher proportion of students whose parents are illiterate or only attended primary education. However no support was found for the European finding of variations between vocational courses in terms of the parental educational level of students. In the present study no differences were found in relation to different vocational courses. An interesting finding was that of nearly 100 students whose father was a farmer or a farm worker, not one was enrolled in the Agriculture vocational course. Students from these backgrounds were the most likely of all occupational groupings to be enrolled in the Commerce course. This re-inforced the ways in which the educational choices that were being made were related to societal conceptions of the value of different occupations and perceptions of the labour market. For example, in Gujarat no student who has obtained a Masters degree in Agriculture for the last five years has obtained a post in Agriculture.

Variations in choice of course were found in relation to the income of the family. Surprisingly those with the lower family income backgrounds were over-represented in the Home Science course while those with the highest family income backgrounds were under-represented in Commerce and over-represented in the Technical course. More exploration is needed of this area, in particular the role of the Home Science courses. Their uncertain status in relation to the job market means that decisions that daughters should enter such courses may be more related to broader social questions such as the role of women in society and, in particular, issues of eligibility for marriage.

There are also marked differences between the courses chosen by students of different gender from different areas. Female students in urban areas choose Commerce as well as Home Science while those in rural areas choose Home Science almost totally. Male students in urban areas choose Commerce followed by Technical courses while those in rural areas choose Technical followed by Commerce courses. There were clear indications that students in urban areas considered their chances of obtaining employment were greater than those in rural areas. Moreover boys were more likely than girls to consider their chances of entering apprenticeships and higher education as good. There were some indications that ex-students in rural areas were more likely to have undertaken more than one job and that students from the less privileged castes were also more likely to have undertaken more than one job.

The study supported Grubb's assertion of the different pathways through the vocational education system. There was support for the idea that students from less privileged backgrounds were the more likely to have entered work or an apprenticeship after completion of the course whereas those from more privileged backgrounds had realised their aspiration to enter higher education. The study found that the ex-students who had found jobs or obtained an apprenticeship were less likely to come from General Caste backgrounds and more likely to come from Socially and Educationally Backward Caste backgrounds than the general sample of students. This lends support to the view that

students from General Caste backgrounds are more likely to enter higher education than other employment based options but may also be related to the higher proportion of males in the student population with a Socially and Educationally Backward caste background. Students who came from poorer backgrounds measured by family income were more likely to obtain an apprenticeship or a job than those who came from more affluent backgrounds. 37% of vocational school students came from family backgrounds with an income below 1500 rupees per month while 78% of the ex-vocational school students came from such a background. There were indications in the study that economic constraints operated on students from poorer backgrounds forcing them to consider wage employment or an apprenticeship. For example, the study found that students from poorer backgrounds were more willing to consider a variety of options on completion of the course than those from more affluent backgrounds.

4. Student Achievements in Vocational Education

In Chapter One the difficulties of determining differences in achievement between students undertaking vocational and non-vocational courses were discussed. In the current study no attempt was made to examine in detail the achievements of the students in vocational education. However data was collected on the achievements of the students on entry to vocational education. About a third of the students had achieved a First Class result in the Secondary School Certificate with over a half obtaining a Second Class result and one in ten a Third Class. For many students entry to vocational education was a second choice. There were interesting variations with the Technical courses attracting the highest level of qualifications and the Home Science and the Agriculture courses the lowest.

Despite this the completion rates for the vocational courses are generally higher than those for the General and Science streams at the Higher Secondary Certificate. In the seven schools in the sample over 90% of the students enrolled successfully completed

the Higher Secondary Certificate course. Moreover the areas which attracted the weakest students at the Secondary Certificate level, Home Science and Agriculture achieve by a considerable margin the highest pass rates at the Higher Secondary Certificate. These results point up the difficulties in making judgements about student achievements where they cross either different routeways (academic and vocational) or different vocational areas. They may also point to some of the factors influencing societal perceptions of the values of the courses.

5. The Effects on the Demand for Higher Education

The results of the present study challenges the policy assumption that the expansion of vocational schooling can dampen the demand for higher education and white collar jobs. In the main it confirms the view that when vocational education expands, demand for higher education does not necessarily contract. It reinforces the findings of studies such as Lauglo and Narman's (1988) study of Kenyan vocational schools and their students that without an expansion of the labour market the aspirations of the policy makers are unlikely to be realised.

The current study showed that the usual destination of students after successful completion of vocational schooling was higher education. In the sample of 7 schools 62% of students entered higher education compared with 13% obtaining paid employment and 4% entering an apprenticeship. More general data on the state of Gujarat showed that 69% of students from 1989-1995 have entered higher education on completion of vocational schooling. The rise in entry to higher education is related to the fall in the numbers of students who are unemployed or remain at home after completing the course. In the early years of vocational schooling (1989-90) as many as 47 % of students were unemployed or remained at home while by 1996 this had fallen to 8%. The comparable figures for entry to higher education are for 1989-90 39% and by 1996 64%. Students in Gujarat are continuing to use the vocational schools as an

alternative route to higher education. The situation at present is not challenging the societal views on the value of higher education for access to prestigious jobs and so when unwilling students are 'forced' into the vocational streams, the graduates from these programmes frequently find their way back into higher education.

The lack of challenge is represented in the responses of the various groupings to questions about how to improve vocational education. The principals, the teachers, the students and the ex-students all rated highly the provision of more opportunities for higher education. Interestingly it was the ex-students who rated most highly the provision of such opportunities. The continued aspiration for entry to higher education was even visible in those ex-students who had obtained an apprenticeship or paid employment. Over a quarter of the ex-students still retained their aspiration to enter higher education.

5.2 IMPLEMENTATION OF VOCATIONAL EDUCATION IN GUJARAT

We can now turn to examining the results of the current survey in terms of their implications for implementing vocational secondary education in Gujarat. The survey has shown that the demand for higher education remains unabated despite the attempted expansion of vocational secondary education. The success of the policy for the vocationalisation of higher secondary education depends on the preference shown for it. The experience in Gujarat has not been very encouraging. Shah (1996 p137) pointed out :

> "It is a sorry state of affair that after eight years of its implementation on the progress of vocational education in the state has been retarding (sic). The education system in the state has failed to attract students for vocational stream and to convince them of its importance in terms of potential for earning".

Indeed the current study has shown that the demand for vocational secondary education has been difficult to establish and that recent problems relating to corruption have led to a decline in student numbers. Since 1987 150 schools have closed their vocational courses as a result of enrolling less than 20 students and discussions at the Education Department indicate that a further 30 schools may be on the verge of closing their vocational courses. Table 5.1 shows how schools offering general courses have continued to expand at the same time as the number of schools offering vocational courses have fallen.

Table 5.1
Comparison of vocational schools with general schools

Year	Nos. of Schools offering vocational courses	Difference from previous year	Nos. of general School**	Difference from previous year
1987-88	47	--	1517	72
1988-89	131	84	1596	79
1989-90	179	48	1603	7
1990-91	216	37	1649	46
1991-92	244	28	1710	61
1992-93	264	20	1915	205
1993-94	274	10	2035	120
1994-95	284	10	--	--
1995-96	156	-128	--	--
End of March-96	80	-76	--	--

Source - Annual Administrative Report 1994-95, p11 Published by Joint Director 10 + 2 Pat Nagar Yogna Bhavan, Ahmedabad.
**Source - Annual Administrative Report 1992-93, p10 Published by Joint Director 10 + 2 Pat Nagar Yogna Bhavan, Ahmedabad

Parents and students continue to have a higher regard for academic (general) higher secondary education than for vocational education. In Gujarat pupils are assigned to

higher secondary school on the basis of the S.S.L.C at Standard 10. Pupils are allowed three major choices of courses: General (including commerce and arts), Science and Vocational course. Most students opt for the General course and so far less than 6% of all the students have entered vocational education. This low recruitment figure is surprising given that students' successful completion rates are higher in vocational education than general and science education.

Gujarat has therefore failed to fulfil the goal set by central government that by 1995 25% of students should be in vocational education. The non-achievement of this policy objective has not prevented the setting by the central government of an even more ambitious target of 50% of students entering the vocational stream by the year 2000. The education policy of 1986 and 1991 envisaged the expansion of vocational education as curbing the flow of students going to higher education without any purpose whilst at the same time also preparing the students for self employment. However the survey shows that those students who have taken vocational secondary education do not regard this as a terminal educational experience and many of them, even those who achieve an apprenticeship or paid employment, still aspire to enter higher education. In the survey 45% of the ex-students who were now in employment or an apprenticeship still aspired to a place in higher education. Another problem identified by the survey was the gender differentiated nature of the vocational courses on offer. Home Science is female dominated while Agriculture and Technical are male dominated. Commerce is at present the only area which attracts male and female students in any numbers. As yet little concern has been expressed by the State Government over this pattern but it has considerable relevance in terms of discussions of ways forward in vocational education. The situation is complicated by vocational education appearing to be more attractive to boys from rural areas and girls from urban areas.

The problem facing policy makers in Gujarat is whether to continue with the policy of a separate vocational secondary education or to explore ways of providing a curriculum

which mixes general education, preparatory studies and vocational education in a way that would permit a significant proportion of graduates to continue on to higher education, but at the same time would furnish most of them with the skills necessary to complete in the labour market. The debate on a separate vocational education focuses on the institutional location of the vocational education and its general purpose. Gujarat is at present the only state in India which is actively working on the introduction of a Multi-point and Credit System for Industrial Training Institutes and Polytechnics. Here students leave secondary school on completion of the S.S.C. and have a choice of different routeways through a three year programme. Gujarat has developed the details of teaching schemes for diploma programmes in civil, mechanical and electrical engineering, the pre-requisites for each course, the examination scheme and the semester during which each course will be offered. Despite these interesting developments it is unlikely that this routeway will cater for the needs of any other than a small highly qualified proportion of the cohort. Another possibility is to develop courses within the general schools which are training courses for specific occupations. The anticipated problem with this approach is that links between schools and industry are so weak at present that it is difficult to see how this could be implemented and that highly specific occupational training may not prepare its graduates for the rapidly changing world of work.

5.3 STRENGTHENING THE EXISTING SYSTEM

The argument of this study is that now would be an inappropriate time for a major overhaul of the higher secondary system in Gujarat. The debate on the most effective way of introducing reforms that vocationalize secondary education continues. Gallart (1983 p.214) reviewing Latin American experience concludes that in the case of Brazil "the examples from the past history of Argentina and the recent experience of Brazil show that it is very difficult to change an entire level of the educational system by decree". Ways have to be found of strengthening the current system with the hope that

this will lead to an increase in the value placed on vocational education. These sections are written in the clear recognition that any changes in vocational education will not of themselves lead to change and that significant shifts within the wider economy will be necessary.

The importance of support by the State Government

The study has identified that key players at the institutional level perceive themselves to be relatively isolated from external support. The study has shown the lack of linkages between vocational schools, the State Government and the Central Government. Key documents produced by the Central Government such as the CSS (Centrally Sponsored Scheme) have outlined appropriate management structures at state, district and institutional level. However an examination of the existing structure in Gujarat reveals a different pattern. At present there is a special wing headed by the Deputy Director of Vocational Education which looks after the scheme of the vocationalisation of education in Gujarat state. The name of the office is the 10+2 special cell in the building of State Higher Secondary Education Board, Ahmedabad. The office is working as a separate office of the Joint Director of Higher Secondary Education with nine staff members. Table 5.2 and Table 5.3 show the details of staff working in this office and the four regional offices (zonewise) at Ahmedabad, Rajkot, Gandhinagar and Baroda.

Table 5.2

The working structure of State Vocational Office at Ahmedabad

Name of post	Sectioned	In post	Post not appointed
Joint Director of Education	1	-	1
Deputy Director of Education	1	1	-
District Vocational Education Officer	2	1	1
Research Assistant	1	1	-
Subject Expert in four different trades. i.e. Commerce, Home-science, Agriculture and Technical	4	-	4
Stenographer (Gujarati)	2	-	2
Other clerical staff like clerk, Typist, peon.	6	6	-
Total Staff	17	9	8

Source: adapted from Annual Administrative Report-1995 p20-22 published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad

Table 5.3

The working structure of staff in the four different zones

Name of post	Sanctioned	In post	Post not appointed
District Educational Officer	4	3	1
Deputy District Education Officer	4	3	1
Subject Expert in four different trades. i.e. Commerce, Home-science, Agriculture and Technical (four in each zone)	16	-	16
Statistical Assistant (one in each zone)	4	4	-
Other clerical staff like clerk, Typist, peon.(5 in each zone)	25	25	-
Total Staff	53	35	18

Source - adapted from Annual Administrative Report-1995 p 20-22 published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad

It can be seen from Table 5.2 and 5.3 that 70 posts have been sanctioned by Government Education Department, 17 for state office and 53 for four different zones to administer and implement vocational education in the state. The clerical posts have been filled in both offices. However key personnel such as the Joint Director of Vocational Education at state level and the post of Vocational District Education Officer in the Rajkot zone and Deputy District Vocational Education Officer in Ahmedabad zone have not been appointed. A surprising omission is the lack of 20 course-expert posts (4 at the State level and 16 at zone level) not appointed it is reported because of the lack of availability of suitable candidates. However, interviews revealed that candidates were available and bureaucratic inertia was at least in part responsible. An interview with a Zone Education Officer revealed a picture of over-worked staff, lacking proper guidelines from central government, often being transferred to other departments, struggling to cope with the pressure created by the system and without course experts to give advice.

The key body in planning and implementing vocational education at the state level is the State Vocational Council. This was set up in Gujarat in February 1994 with 18 members including one vocational school principal, two industrialists and key members of relevant government departments. A department was set up to help the Council in its work but at the time of the research only one post of lecturer had been filled. The posts of Professor, Reader, Consultant, Stenographer post had yet to be posted. Table 5.4 show that structure of the Council and its present staff.

Table 5.4
The Structure of the State Council of Vocational Education and Present Staff

Name of post	Sectioned	In post	Post not appointed
Professor (Deputy Director of Education)	1	-	1
Reader	1	-	1
Lecturer	1	1	-
Consultant	1	-	1
Stenographer	1	-	1
Other clerical staff like clerk, Typist, peon.(5 in each zone)	7	5	2
Total Staff	12	6	6

Source: adapted from Annual Administrative Report-1995 p20-22 published by Joint Director (Vocational) 10+2 Patnagar Yogna Bhavan Ahmedabad

For improvement to take place at the institutional level, it is critical that permitted expenditure on areas such as the employment of appropriate change agents such as the subject experts and consultants is made. This non appointment of key personnel highlights the lack of commitment to vocational education shown at the state level. It is also shown by the ways in which the State Government is not utilising the grant received from central government under CSS for meeting the expenditure on various items of vocationalisation. In particular discussions with senior officials in the Education Department and with Principals revealed that the present building grant under Centrally Sponsored Scheme is not being utilised by the State Government. Moreover School grants were paid by instalments which was criticised by many principals who found medium and long term planning difficult. The Centrally Sponsored Scheme recommended a set of rules and regulations which should inform the award of grants and financial assistance. These have as yet not been implemented in Gujarat and it is

considered that implementation is critical for effective management at the institutional level.

At all administrative levels, the key posts associated with vocational education are held by Indian Administrative Officers who have succeeded in the Indian Administrative Service (IAS). The holder of these posts have rarely any experience in the vocational field. A highly placed government official in an interview pointed to this lack of experience, officers' frequent transfer between jobs, fields and geographical areas as major factors in the problems experienced by the vocational scheme. At present there appears to be no plan for changing this pattern and no clear view of how at the state level to promote vocational education.

Ways have to be found to provide better training for those involved in the administration of vocational education and of constructing career pathways which reward commitment to this area. A more detailed training has to be introduced focusing on broad areas of education management and paying particular attention to planning, monitoring and evaluation. It is recommended that Staff Development Cells are established in the state to facilitate systematic staff development activities. Appendix 12 outlines the role such a Cell could play in supporting effective implementation of vocational education.

Relationships with Industry

Commentators have pointed to the need for effective links between schools and industry to effect change and improvement in education (Stoll and Fink 1996). Menon (1996 p.97) in a survey of education-industry links in Britain and India found a lack of development of schools-industry links in large cities in India. This survey identified that the links between vocational schools and industry in Gujarat were similarly under-developed. This was at all levels of the system. Vocational schools operated in isolation

with little direct contact with or involvement of industry. The vocational schools, without any external input had made few adjustments in their curricula to changing national and local circumstances, their equipment was frequently outdated and their teaching staff were academically oriented with little or no relevant industrial experience. Recent changes in industry have made it more attractive as a place of employment than the government sector with the result that it has become difficult for vocational schools to attract people with industrial experience to its teaching staff. The key findings on links between education and industry will be discussed along with their implications and some recommendations for change.

a) State and district level

The State Council of Vocational Education included two industrialists in their body but they were not representative of the range of industries. The lack of district councils for vocational education suggested by the CSS prevents any role for industrialists at the district level. The challenge will be to create a climate where industrialists are willing to become involved in the planning of effective vocational education. The present survey revealed that industrialists had a very limited knowledge of the national plans for vocational education and of the practice of their vocational schools. When asked whether they would be willing to become more involved most employers only gave a very lukewarm response. A national and regional campaign to challenge the current complacency of employers with regard to vocational education is necessary. At present there are no organisations working at the national or state level to develop links between industry and vocational education in the way that organisations such as Understanding British Industry (UBI) do in the United Kingdom (see Menon 1996). The campaign would need to focus on employers organisations to try to get them to take a lead in changing attitudes in this area. The current short-term commercial focus adopted by industries leads to negative attitudes towards long term investment in training. Forums are required for discussion and dialogue between schools and industry at both the state

and the district level. At present there is little discussion of issues such as what proportion of a company's resources should be devoted to education and training.

b) School level

There was equally little involvement of industrialists in the management of the school and industrialists showed little knowledge of the policies and practices of their local school. The principals of schools assessed the interest of local industries in their vocational courses as low. In none of the schools were there joint initiatives being taken by the schools and local industrialists to promote vocational education. The main type of support provided by industries was visits by vocational school students and industrialists giving talks in schools. There were few indications of industry providing financial support, giving unwanted machinery, helping teachers to develop curricula materials such as case studies or providing students with careers advice.

Support at the school level is critical as bureaucratic inertia prevents change at a higher level. Support is required at the school or area level to develop quality links maybe drawing on the experience of British industry by seconding managers to this area for limited periods of time. In particular efforts have to be directed to ensuring that quality on-the-job training is an integral part of every student's vocational education. At present few vocational schools have block programmes where students visit industry for a period of time. Even where such programmes exist, little information on the students performance in industry is fed back to the school and there are few signs of schools preparing for the students' block release. It is recommended that all the vocational courses require on-the-job training to be conducted in the industry, office, professional institutions and other collaborative agencies. Contact between vocational schools and local banks, small scale industries, Chartered Accountants, big wholesale merchants, factories, private workshops is needed to provide opportunities for the students to work in the real situation. These agencies can provide opportunities to the students to learn

the jobs under the supervision of their own staff. It is also recommended that the heads of the institutions and vocational teachers in consultation with collaborating agencies such as the Western Apprenticeship Board, the State Council of Vocational Education develop an action plan including targets for achieving the desired state. Another area where improved education-industry links could have a significant impact is in the continuing development of vocational teachers.

c) Post course

The survey revealed that there was at present a mismatch between the supply of graduates from the vocational education course and the demands of industry for apprentices and young workers. Due to the weak nature of the industrial base, there are normally not enough places to absorb all the students who have successfully completed vocational education. As we have seen only 17% of students on completion of the course either entered employment or obtained an apprenticeship. Moreover those who obtained a job reported considerable difficulty with 85% of vocational apprentices stating they got their jobs with difficulty. Most of those obtaining jobs were from rural area and 88% of the students obtaining a job had to wait 6 months after completion of their vocational course. The majority of the students who found work were employed in a different vocational area to their training.

Commentators have pointed to the need to improve information linkages to improve the match between the size and occupational distribution of employment demand on the one hand and the volume and content of training on the other. They argue that where these linkages are strong and dynamic, pre-employment training can be cost effective. Where they are weak or absent, institutional inertia, compounded by resource weaknesses, leads to routine programmes which are increasingly divorced from employment realities. Although there are indications that there is some mismatch between the courses provided and the demand for labour, the greatest problem in Gujarat is the general lack

of available opportunities. The growth of industry has not matched the growth of vocational education, even with the limited expansion of vocational education that has taken place. Most employers faced by a situation where labour is readily available have little interest in employing young workers beyond the need to meet government criteria.

Apprenticeship

There is statutory provision for stipendary apprenticeship for vocational graduates under the Bombay Apprenticeship Act. The survey observed some encouraging success with companies such as the Gujarat Electric Board, the Ahmedabad Electric Company, the Handloom Corporation, the Co-operative Banks, Vadialal Ice-cream and Cadila providing training in respective vocational trades to graduates with a monthly stipend of RS 600. However most companies were still reluctant to take students for apprenticeship. The main issue was the lack of permanent jobs in these companies.

Apprenticeship is made even more unattractive by the stipend given to those who obtain it. Those industries willing to take on students usually do so on condition that there is no financial obligation (only a few industries top up the allowances). The students therefore are caught up in a dilemma as to how to survive on the allowance. These allowances are sometimes released late by some of the non-government organisations, thus making the whole exercise difficult. The great majority of the students had expected that when they had passed the Higher Secondary Certificate Examination they would earn more than they were currently earning. About a third of the ex-students were spending all or more than they earned.

Neither the government department nor the vocational school or the industry assess the students during apprenticeship. On completion of the apprenticeship students receive a certificate showing that for a particular period of time the person has been an apprentice. This leads to low commitment by apprentices often reflected in their lack of seriousness

during their training, in absenteeism or irregular attendance, and the presentation of weak industrial training reports.

The main weaknesses in the area of schools-industry relations identified by the current study and confirmed by other studies in this area are the lack of appreciation of mutual benefits derivable from such co-operation and the perceived non-relevance of what is being taught to the skills required by employers.

Among the recommendations for change in this area of education-industry links are:

a) Forums should be established at the zone and district level to bring together industrialists and vocational educators;

b) Industry-Education Centres should be established in each zone with vocational experts attached to them;

c) A placement officer should be appointed in each district and vocational school and training should be provided for them.

The Forums and Centres should focus on developing links between industry and education including:

a) participation in the development of curricula in existing and new courses;

b) training in industry of new and existing teaching staff properly supervised by the training officers of the industries involved;

c) training of students in industry in a sandwich programme and in a manner that ensures maximum benefit;

d) attaching vocational schools to a industry or a group of industries, thereby ensuring that the training provided in the school is more realistic and relevant to industry;

e) encouraging industries to provide / subsidise guest lecturers to the vocational schools.

Among the ways in which education could be supportive of industry are:

a) the organisation of continuing education courses for employees of industry to upgrade their knowledge and provide the chance of further career development;

b) the provision of specialised courses for industry;

c) the planning of laboratories and workshops in such a way that they can be utilised for testing and other services to industry;

d) the arrangement of in-plant training courses in industry,

e) linking industry more closely to schools by appointment of industrialists to positions such as Honorary Principals.

Most of the above activities would also assist vocational schools in generating further income. Vocational schools who respond to the challenges should be provided by central and state government with realistic and attractive incentives such as special capital allocations for acquisition of required machinery and equipment. Equally central and state government have to identify ways of 'encouraging' enterprises (of a particular minimum size and type of operation) to participate in work experiences schemes for

students of vocational education. Questions have to be asked whether the current voluntary participation is sufficient to guarantee quality schemes.

Central government has a key role to play in bringing together the major stakeholders (Industry, Professional bodies, NGOs, Government and Educational Institutions) to develop their commitment to the formation and the development of a skilled work force. At the regional and district level the main initiative must come from educational institutions as government bureaucracy is slow to respond. In developing such initiatives linkages with small and medium size enterprises should be encouraged as they are likely to be future employers. Realistic targets need to be set at all levels of the system.

Selection of Institutions

The survey and the visits revealed some very good institutions but there were a large number which could at best be termed teaching shops having neither satisfactory building facilities nor equipment or library. Some longer serving Principals remembered the period when the State took the decision in 1982 to introduce vocational courses. They recalled the pressure they were under to undertake vocational courses and their anxieties over the lack of suitable facilities. It was often the schools reputation as a general secondary school which affected its selection to run vocational courses. Still a few institutions have no space for accommodating 20 students undertaking practical work despite having received a grant for this purpose. The inference then is that unless the institutions are properly chosen and monitored the scheme is likely to continue to attract criticism and efforts to change its image will fail.

Selection of Vocational Courses

The selection of institutions and vocational courses should very much depend upon the local needs. However the survey revealed that identification of local needs was not seen as an integral part of the setting up of new vocational courses. Most principals said that their course had been sanctioned without any survey of the needs of the local labour market. No individual school had undertaken any form of survey of the local economy before introducing a vocational course. The Research Wing of the Gujarat Text Book Board, Gandhinagar is at present developing examples of how such district surveys could be undertaken but progress is slow. The reasons for selection of institutions and courses still is based on entrepreneurial decisions and political influence rather than on local labour market needs.

Examining the courses available by the structure of employment in Gujarat (see Table 5.5) reveals some puzzling inconsistencies. A high proportion of the population is employed in Manufacturing but this is not reflected in the courses and there is no clear alignment between the courses and the area of employment designated as Community, Social and Personal Service. An examination of courses running in particular localities shows that the same courses are being offered in a number of institutions e.g. Accountancy and Office Management courses are offered at many institutions in Ahmedabad. Consideration has also to be given to the identification of changing skill needs. Under the impact of new technology key occupations are changing rapidly. The issue will be the ability of those involved in planning vocational courses to respond to the challenges.

Table 5.5
Employment in Public and Private Sector by Industrial Classification
(figures in '000)

Industrial Classification	Total Employment
Agriculture, Hunting, Forestry and Fishing	24
Mining and Quarrying	23
Manufacturing	620
Electric, Gas and Water	44
Construction	71
Wholesale and Retail Trade and Restaurant	42
Transport, Storage and Communication	189
Financing, Insurance, Real Estate and Business Services	103
Community, Social and Personal Service	579
Total	1695

Source : Directorate of Employment and Training, Gujarat State, Gandhinagar. p.45

The Curriculum

Curriculum development in India is centralised and it is the responsibility of NCERT and PSSCIVE. PSSCIVE is mandated to play a pivotal role in improving the quality of education and re-designing the courses at various levels. In the few cases where the syllabus has been revised the process has been deficient in that the identification of content has rarely been accompanied by pilot testing and revision. The practice is for NCERT in conjunction with SCERT and Ministry of Education to work through subject specialists panels to develop the curriculum. However, complementary materials, such as instructors, guides, teachers training materials etc. have been lacking. Moreover,

what is in the syllabus has often been included because of its amenability to existing assessment techniques.

The study has shown that in Gujarat the work of curriculum development in vocational courses is being handled by the Gujarat Textbook Board, Gandhinagar. It was observed during the discussions that the Board had adopted the curriculum design recommended by the NCERT. Despite the expansion that had taken place in the number of vocational schools, changes in vocational education curricula have not been introduced to date. The curricula at present does not cater for the social and economic needs of the state. They do not adequately equip individuals to become productive and self-reliant. The education system continues to be dominated by written examinations at all stages, without any provision for different forms of assessment more appropriate to the aims of the curriculum. For effective change the Higher Secondary Board should consider setting up Vocational Course Committees containing experienced vocational teachers and representatives of various industries / professional institutions whose role would be to review existing syllabi and to effect the required modifications in them.

In Gujarat the development of instructional material is the responsibility of the Gujarat Textbook Board. They have identified panels of writers in different vocational courses and suitable instructional materials are being designed by following the workshop method. The instructional materials prepared by some teachers and State Textbook Board are examined by an expert committee and, if found suitable, are published by the State. However as yet few of these have been produced and most schools rely on commercially produced textbooks. There was evidence of some useful books but schools found them costly and many students were unable to afford them.

Only few of the Principals and teachers were aware of the National Development Plan for Vocational Education. Only a small number of principals and teachers were abreast of current developments in vocational education. Most considered that the quality of

vocational education was not monitored properly. Whilst most agreed that the course objectives were clear they still did not consider the features of an effective vocational curricula were in place. In particular they considered that the curricula and syllabuses were not reviewed and revised regularly, that the theoretical and practical course were not co-ordinated, that the courses were not related to the needs of local industry, and that that they were not related to future development needs

Curriculum Content

In viewing teacher and student views on curriculum content it is important to keep in mind the later destinations of students. There were major differences between teachers and students in terms of their perceptions of the demands of the curriculum content. Nearly 65% of students felt that the level of course theory and practical were about right. However about 50% of teachers felt the same. The majority of teachers and students felt the emphasis given to vocational subjects should be increased and language and general foundations subjects decreased. Over three quarters of the teachers and students felt that in terms of their relevance to their future, Vocational subjects and Entrepreneurship were of considerable relevance while the majority of teachers felt that the Language subject and the General Foundation subject were of little or some relevance.

In the terms of time, both teachers and students felt that the amount of time devoted to the curriculum content most specifically related to the vocational area should be increased, in particular Entrepreneurship and Vocational subjects. However only a few of them rated General Foundation subjects and Language subjects as important parts of the curriculum. In term of the quality of the course, both teachers and students felt that Entrepreneurship and Vocational subjects should be improved. While observing classrooms, the main teaching method used was found to be the lecturing method.

There was little student involvement and no teacher prepared instructional materials were used.

Assessment and Examinations

Assessment of student progress in vocational courses is of a traditional type. There are no systematic arrangements for continuous assessment nor any systematic recording of internal assessment. At present schools set their own internal tests for Standard XI but no attempt is made to engage in validation exercises. A scheme to ensure that a more uniform internal assessment system for vocational schools throughout the State must be finalised by the Directorate of Vocational Education. For this purpose systematic guidelines must be formulated at the State Level. Ways should be found of including within the assessment process measures of the students' achievements when they are on placement in industry and consideration should be given to making successful completion of an apprenticeship one of the requirements for attaining the Higher Secondary School Certificate.

The State Examination Board should also consider the pattern of examinations. The current weighting given to vocational subjects should be continued but that given to Entrepreneurship should be increased at the expense of language studies. At present the content of the General Foundation courses is the same across both the General and the Vocational courses. However the time available for their completion varies (9 periods a week for the General, 6 for the Vocational). A new and separate syllabus for the vocational course is required.

The Teachers

Any consideration of improvement must take into consideration the teachers for as Day (1994 p288) stated "Teachers are the school's greatest asset". The current survey

portrays a picture of the vocational school teacher as someone who has progressed through the academic routeways to his / her current position and who possesses limited or little industrial experience. Their main reasons for being in their current post rarely relate to a positive orientation to vocational education. They are relatively young and their training has largely been concerned with preparation for general teaching rather than for the teaching of vocational subjects.

There is little evidence from the survey that the teachers are passionate about the need for change in vocational education. They feel that at present they are over qualified for the work they are doing, viewing their work always in terms of the demands of the General course. In part this can be related to the preparation for teaching in Indian schools which has remained largely unchanged over decades. Kumar (1991 p.85) has identified that "voice control, blackboard work, questioning and recapitulation... these tricks continue to be the staple of teacher training, particularly of the 'model' lessons given during training, even in the best of training institutions". This leads teachers to a view that their main job is to cover the syllabus in time for the end of term or board exams. Teachers show little interest in reorganising knowledge in interesting ways and therefore preoccupy themselves with the task of maintaining order and delivering textbook content in the classroom.

Unlike in other states such as Rajasthan there was no provision for part time teachers in any of the vocational schools. All the vocational subjects had to be covered by the full time teachers. In discussions it became apparent that the system of donations worked against the appointment of part-time teachers.

In terms of their knowledge there is no dearth of vocational teachers in the State. In the area of Technology second class polytechnic diploma holders are being appointed. In the area of Home Science, Masters degree holders in Home-Science are available. In

the same way for the Commerce and Agriculture streams Master's degree holders in their respective fields are readily available.

However very few of the teachers had received specialist training in teaching vocational education. The Annual Administrative Report of the State Government (1995b) noted that only 276 out of 2800 vocational teachers in Gujarat had received training and orientation under the Centrally Sponsored Scheme. The training programmes are being organised by the Text-book Board which has neither the background nor the specially trained staff for this purpose. It is therefore, recommended that a special unit in the State Council for Education Research and Training should be created for this purpose and short-term teachers training programmes for vocational teachers should be organised in different vocational subjects according to the guidelines provided by NCERT. It is also recommended that a few colleges of education and professional institutions should also be identified for organising in-service and pre-service teachers training programmes for vocational teachers.

The other area of concern in relation to the teachers is their lack of recent vocational experience. Stafford (1982 p.246) has argued that one of the reasons that attempts to introduce a broad vocational orientation into the school curriculum have failed is the lack of knowledge about the needs of industry among teachers who may never have worked in the industry themselves. Therefore, a first step towards introducing a broad vocational orientation into schools is to make information about industry more readily available to teachers.

Menon (1996) provides evidence that in at least some parts of industry there was an awareness of the need for teachers to have broader experiences of the world of industry. Those involved in developing education-industry links should pay particular attention to providing opportunities for teachers to be seconded to industry for limited

periods of time and for teachers to be given any spare places available on training courses run by industry for their own employees.

At present there are three major staff-related issues which confront those planning for improvement in the system. These are :

a) how to attract the best talent to teaching vocational courses in higher secondary education ?

At present most vocational teachers consider that the donation system plays a crucial role in the recruitment of vocational teachers. Interviews with the Principals showed that they did not consider the problem to be the non-availability of experienced vocational teachers. Yet most of those being recruited as vocational teachers have neither teaching experience nor industrial experience at the time of recruitment. The system of donations prevents many would be teachers from applying. To try to identify whether experienced teachers existed the researcher placed an advertisement in an Ahmedabad newspaper (see Appendix 13) asking for experienced vocational teachers with industrial experience but stressing that no donations would be required. 200 applications were received within two weeks. Of these more than 50 had relevant industrial experience, more than 125 had teaching experience and some of them had experiences in vocational research projects. Two potential applicants had Ph.Ds. in education and 12 had M.Eds. in education. This points to the existence of a pool of vocational teachers who have appropriate educational qualifications as well as relevant industrial experience. The central and state government must pay more attention to the circumstances surrounding recruitment to vocational teaching positions and the giving of donations should be banned.

b) how to train existing teachers so that they have the new knowledge and skills needed to respond to needs in the sector ?

The key areas in which staff have to be educated and trained are :

1) Subject-matter updating

2) Industrial Experience

3) Professional training.

Consideration has to be given to the appropriate roles of initial teacher training and in-service education in this process. The initial training should be more specialised than at present where initial training prepares the student to teach in all the different strands of higher secondary education. A more specialised initial teacher training is required which equips the new recruit with the organised body of knowledge in their professional field. During this phase, the potential vocational teacher would be equipped with the scientific and technological concepts they are expected to use in their practice. This training should lead to a certificate, diploma or a degree in the respective field.

On appointment to their first post the vocational teacher should undertake a structured induction programme which introduces the entrant to the current professional practice. At present during initial teacher training little time is spent on teaching practice and there is little or no use of vocational courses for teaching practice. Consequently an induction programme should focus on assisting the inductee in interpreting current practices under the guidance of an experienced teacher. This phase may extend from six months to one year. In-service education is also required to acquire new skills and also to acquire relevant industrial experience.

c) how to make teachers more motivated and productive by improving their general working environment ?

Incentives have to be provided to those teachers who are willing to become involved in the in-service programmes (whether vocationally or professionally based) or to develop

their industrial experience. At present the system is too reliant on experience for promotion and there are not enough mechanisms to identify quality teachers. Ways have to be found of providing more motivation than at present.

Students' orientation to vocational education

The study has highlighted that at present few students choose vocational education as a first choice. Many who are in vocational education programmes are there because they did not realise their aspiration to enter the general education programmes. A critical issue is to how to popularise the vocational education courses and to persuade students and parents of the potential benefits of these courses.

In order to popularise the programme and scheme of vocationalisation of higher secondary education and to highlights its potentialities, possibilities and characteristics to people in general and students and teachers in particular, it is recommended that the State Education Department should make more use of mass media such as radio, TV, newspapers to inform the population regarding vocational courses at the higher secondary stage. At the school level also steps should be taken to popularise the programme through group meetings, distribution of information pamphlets etc.

However this is not likely to succeed unless parents' and students' current views of the value of vocational courses are challenged. As the wider literature considered in Chapter One has highlighted this will only be achieved by ensuring that high proportions of graduates of vocational courses achieve apprenticeships or 'real' jobs on completion of the course. Although currently some efforts are being made at the state level to popularise vocational education through activities such as the organisation of exhibitions of products made by vocational students, there has been little attempt to inform the public of the destinations of the graduates of the vocational courses. This area needs focusing on and will require co-ordination between various departments at

the government level. Much more information is required for both parents and students on the financial and other support available, the possible destinations of students after the course together with the publication of case studies of successful graduates of the course.

To achieve this will require changes in practice at a variety of levels. In the current survey visits to the institutions revealed that there was very limited knowledge about employment opportunities in their local area with most institutions not having complete information about the vacancies available in the nearby area. Under these circumstances the State and/or the District level need to collect relevant information and distribute it among all institutions. Careers education and guidance is a very under-developed part of the system and ways have to be found of making this a more integral part of the curriculum. This in itself will have considerable implications for the in-service programmes needed by teachers.

To achieve the above many of the issues raised earlier will have to be addressed. In particular attention will have to focus on the State's role in improving the relationship between the vocational courses, apprenticeship and 'real work'. At present only 20 out of the 27 vocational courses have been designated as trades for the purpose of providing Apprenticeship training. It is recommended that the coverage of designated subjects field should be enhanced to cover all the vocational courses so that all the vocational graduates can avail of this facility. It is recommended that those in apprenticeship training should receive a stipend of 1000 rupees and financial support to start up a small business when they have completed the apprenticeship.

Many of the teachers and the principals of the schools consider that more urgent action is required to modify recruitment rules in favour of graduates from the vocational courses. It is recommended that the Gujarat Education Department should take urgent steps to modify rules of recruitment in the Government and non-government

organisation/offices to guarantee a certain proportion of places to graduates of vocational stream.

5.4 CONCLUSION

In this Conclusion we have considered the results of the survey, their implications and provided some recommendations for improving the effectiveness of vocational schooling in Gujarat. It is important to remember, however, that changes in vocational schooling are in themselves only going to have limited effects. This study has supported those studies which have argued that expanding vocational education will not in itself solve broader problems such as unemployment or an excess in demand for higher education. Experience has shown that investment in vocational education does not in itself create jobs except those directly connected with the education system e.g. teachers. On the other hand, it is economic expansion that enhances employment. This study has shown that schools by themselves cannot create jobs for vocational graduates even when some support is provided by the state government. In situations such as Gujarat where the supply of educated labour outstrips the demand for educated labour, many graduates of vocational schooling will remain disappointed or will continue to treasure aspirations for higher status 'academic' education which they hope will ensure that they obtain a higher status job. This study shows that it is the poorer students, driven by economic necessity and family pressure and coming from under-privileged backgrounds who are the most likely to enter the world of work at the end of their vocational schooling.

At present it is difficult to know what are the consequences of this. More research is needed to begin to unravel some of the complexities of the relationships between vocational secondary education and students' life chances. Tracer studies in other countries have focused on the occupational careers of these who have successfully completed vocational secondary education. Similar studies are needed in India and

should be set up so as to examine not only the short term consequences of vocational schooling but also the medium to longer term consequences. This study has shown the short term difficulties faced by graduates of vocational schooling, particularly those from the more disadvantaged backgrounds. It would be valuable for studies to follow such ex-students through their early occupational lives to try to assess the impact of the earlier vocational education. Research designs including matched groups of vocational and general graduates would be particularly valuable. Special attention should be paid to those students who enter self-employment. Governments have frequently promoted this routeway but little information is available on the experiences of those who follow this path and how useful they have found the preparation provided by courses such as Entrepreneurship.

The tracer studies completed so far have focused on these who hope to enter or have entered employment at the end of vocational schooling. However, the present study has shown that the common pathway for graduates of vocational schooling is to enter higher education. Little information is available on how such students fare in higher education as opposed to those who have followed general courses at higher secondary schooling. Moreover we know little about their careers having completed higher education. Does their vocational schooling background in any way help or hinder their future employment ?

Such general tracer studies need also to address the broader issues relating to equal opportunities. Are there marked differences in the post-course experiences of students from different genders, castes and urban / rural areas. Another area where further research would be valuable is intensive case studies of vocational education in different areas. Research focusing on the impact of vocational education in urban areas with rapid economic expansion would be of benefit as well as in rural areas where little employment was available.

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Appendices

APPENDIX 1

Development of different aspects of vocational education by NCERT

1. Development of Curriculum and Instructional Materials

* A total of 63 Competency Based Curricula have been developed and are available.
* Eighty five titles of instructional materials have been developed.
* The curriculum and training manual for General Foundation Courses have been developed.

2. Development of Guidelines

* A Handbook of Vocational Survey Workers.
* Guidelines for Evaluating the implementation of the Vocational Curriculum.
* Guidelines for the Development of Instructional Materials for Vocational Courses.
* Guidelines for the Establishment of Curriculum Development Centres and Curriculum and Instructional Material Development.
* Guidelines for In-service Training of Teachers.
* Folders on popularisation of vocational courses.

3 Development of Personnel

* Many short term training courses organised for vocational teachers.
* Many orientation courses organised for key persons on vocationalization of education.
* Many orientation courses organised for key persons on conducting a vocational survey.
* Many orientation course organised for instructional material development.
* Many orientation courses organised for co-ordinators and resource persons for conducting training courses.

4 Working with the States

* Assistance and guidance offered to nearly all states and union territories on :
  - Curriculum development
  - Training of teachers
  - Implementation of programmes
  - District vocational surveys
  - Orientation of functionaries

5. Non-print materials

* Undertaken the production of 15 video programmes on various vocational topics.

6. Many national seminars have been organised for periodic review and policy formulation

Source - NCERT 1991 p.10-11

APPENDIX 2

Group Wise Vocational Trades being implemented in Gujarat State

I Commerce Group

1. Office Management *
2. Gujarati Stenography *
3. Purchasing and Stenography
4. Life Insurance
5. Accountancy and Auditing *
6. Banking Assistant *

II Technical Group

1. Auto Engineering
2. Electronics Technology *
3. Mechanical Technology
4. Maintenance and Domestic Appliances
5. Engineering, Drawing, Drafting and Duplicating
6. Building Maintenance
7. Rural Engineering Technology
8. Air-conditioning and Refrigeration *
9. Repair Maintenance and Electric Motor Rewinding

III Home Science Group

1. Clothing for the Family *
2. Bakery and Confectionery *
3. Food Preservation and Processing *
4. Institutional House Keeping *
5. Catering and Restaurant Management
6. Commercial Garment, Design and Making *
7. Crèche and Pre-school Management *

IV Agriculture Group

1. Farming
2. Horticulture *
3. Dairy Science
4. Fishing
5. Poultry Farming

* course chosen for sample

APPENDIX 3a
Questionnaire for Principals

Govind Desai
14, Hudson Close
Leicester. U.K.

February 1996

Dear Principal,

I am conducting research into higher secondary education in Gujarat as part of my studies for the degree of Ph.D. at Leicester University in England. I have been given your name as a principal of Higher Secondary (Vocational) School. I would be grateful if you would complete the following questionnaire and return it to me in the envelope provided.

There are a few points which I hope you will bear in mind while filling out this questionnaire.

1) The questionnaire is not a 'test' or 'exam'. There are no right or wrong answers. The only 'right' answers are those which express your feelings, your opinions and your experiences.

2) The questionnaire is completely confidential. No one at the school will ever see it. No information from the questionnaire will ever be revealed except in the form of tables. Therefore please feel free to give truthful and complete answers to all of the questions below.

3) Please place a tick (√) mark in the appropriate boxes. Where you are asked to write the answer do not use the boxes.

Thanking you in anticipation of your co-operation.

Yours sincerely,

Govind Desai

CODE | | | | | | | |

hat is your sex ?

Female ☐

Male ☐

hat is your age ?

30 or less ☐

Between 31 and 40 ☐

Over 40 ☐

ducational and Professional Qualifications.

Name of degree(s) Academic and professional	Year passed	Grade
1		
2		
3		
4		
5		

low many years experience have you as a

Teacher ☐

Principal ☐

Please indicate the nature of your school.

Government school ☐

Private school ☐

Government aided private school ☐

Girls only ☐

Boys only ☐

Co-educational ☐

Who was primarily responsible for introducing vocational education into your school ?

Self ☐

Previous Principal ☐

Directive of school management board ☐

Government directive ☐

Recommendation by local industry ☐

Request by local social leader ☐

if other please specify ☐

What is the size of your school ?

Total number of higher secondary students (excluding vocational students) ☐

Number of students in vocational stream ☐

What vocational courses do you offer at your school ?

	Name of Trade	Name of Courses
1	Commerce	1.....2.....3.....4.....
2	Technical	1.....2.....3.....4.....
3	Home Science	1.....2.....3.....4.....
4	Agriculture	1.....2.....3.....4.....

How important were the following in the decisions as to which vocational courses to run ?

	Highly important	Of some importance	Of little importance	Of no importance
Student demand				
The needs of local business and industry				
Easy staff availability				
Government incentives				
Ease to administrate				
Availability of facilties				
Recommendations made by Government dept.				
Other please state				

What is the method(s) of selection you employ for entry to vocational courses ?

Please tick as many as apply

Academic qualifications		Practical test	
By written examination		Recommendation by Government	
Non selective apart from minimum qualification		Health examination	
By interview		Recommendation by Industries	
By aptitude test		Student interest	

Is there a special budget in the school to support the selection process ?

Yes ☐

No ☐

What proportion of the students on the vocational courses are admitted from ?

The area in which the school is situated ☐

The town/city in which the school is located ☐

Outside the city or town ☐

What proportion of vocational students are recruited from ?

Your school ☐

Other schools ☐

Are you satisfied with the Government imposed class size ?

Yes ☐

No ☐

If not, what would you like the class size to be

Up to 10 ☐

Between 10 and 15 ☐

Between 16 and 20 ☐

over 20 ☐

What is your average class size ? ☐

What is the average teacher-student ratio in the vocational courses ? ☐

How important are the following criteria when you are selecting new teachers for vocational courses ?

	Highly important	Of some importance	Of little importance	Of no importance
Academic qualifications	☐	☐	☐	☐
Professional qualifications	☐	☐	☐	☐
Teaching experience	☐	☐	☐	☐
Practical experience	☐	☐	☐	☐
Industrial experience	☐	☐	☐	☐
School management decision	☐	☐	☐	☐
According to govt. criteria regarding minimum quallifications and positive discrimination	☐	☐	☐	☐
Other please state	☐	☐	☐	☐

Is it possible for you to recruit qualified and experienced vocational teachers ?

Yes ☐ No ☐

If No, what are the main reasons ? Please tick as many as apply.

Pay is too low to attract experienced people	☐	Vocational education does not attract good teachers	☐
Teachers academic qualifications poor	☐	Very few teachers have relevant industrial experience	☐
This locality is not attractive to teachers	☐	Other please state	☐

What is the annual turnover of vocational teachers, as a percentage of all vocational teachers ?

More than 20 per cent	☐
Between 10 and 20 per cent	☐
Between 5 and 10 per cent	☐
Under 5 per cent	☐

In general, how do you assess the performance of your vocational teachers ?

The staff as a whole is in need of major training and up grading	☐	Generally satisfactory but some staff need training in specific areas	☐
Many staff need some additional training, skills and experience	☐	Satisfactory	☐

If you feel staff need more training or experience, what are the main areas ?
Please tick as many as apply.

Professional or technical knowledge	☐	Practical or technical skills	☐
Teaching skills	☐	Experience of industry	☐
Management training	☐	Other please state.....	☐
		.....	

Do you consider an ordinary teaching qualification adequate for teaching vocational education ?

Yes	☐
No	☐

If No, what do you consider are the special requirements for training vocational teachers ?

More practical and vocational experience	☐	Special teacher training qualification for vocational teachers	☐

Other please specify

.....

How do you assess the motivation of vocational teachers compared with other teachers in your school ?

More motivated	☐
No difference	☐
Less motivated	☐

If you think vocational teachers are less motivated, why do you think this is so ? Please tick as many as apply.

Lack of status	☐	Students are ill-disciplined	☐
Teachers lack of qualifications	☐	Lack of career progression	☐
Lack of adequate resources and facilities	☐	Other please state	☐

Do you provide in-service education opportunities for vocational teachers ?

Yes	☐	No	☐

If not, what are the main reasons ? please tick as many as apply.

Lack of finance	☐	Appropriate courses not available	☐
Vocational teachers not interested	☐	Courses not compulsory, therefore low takeup rate	☐
Attendance at courses not linked to promotion	☐	Courses too far away from the school	☐
Government agency not organising enough courses	☐	Quality of the courses too low	☐

What methods do you employ to assess individual teacher performance ? Please tick as many as apply.

Student pass rate	☐	Assessment by the supervisor	☐
Teacher attendance records	☐	Evaluation by student's feedback, opinion	☐
Continuous assessment of teacher in the classroom	☐	Other	☐

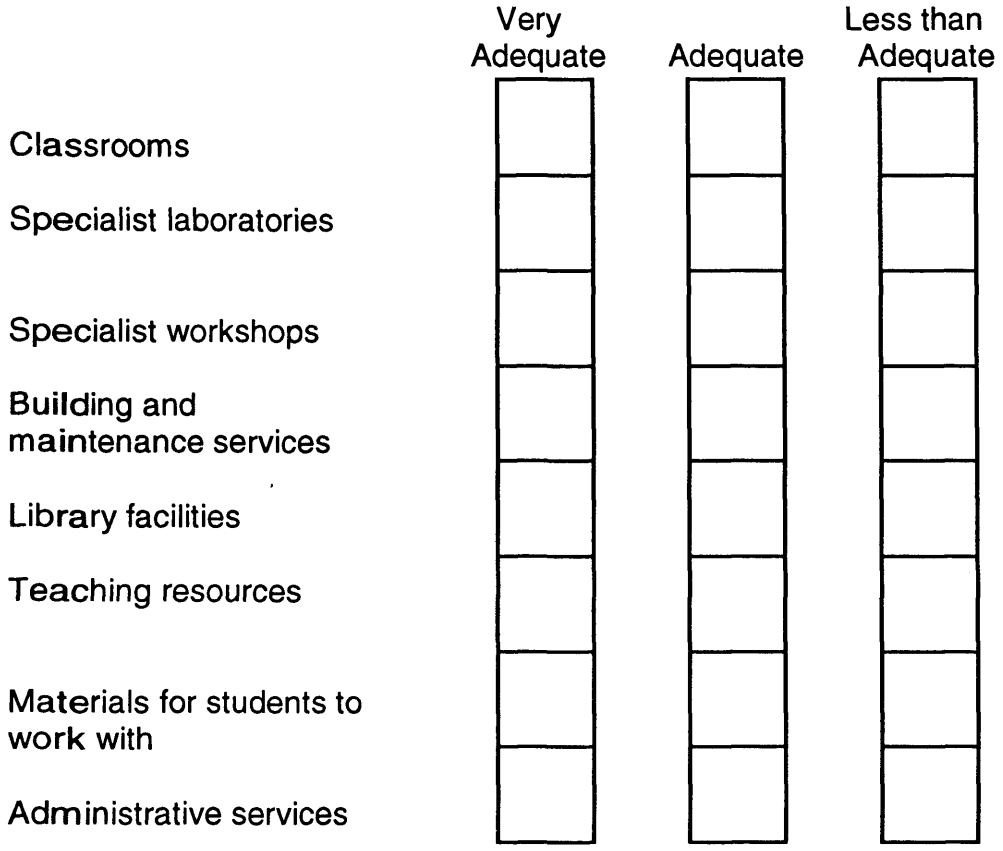
If the teacher is clearly failing in his/her duties, what action would normally be taken by you ? Please tick as many as apply.

Send on a training course	☐	Report to management committee for appropriate action	☐
Give formal warning followed by dismissal	☐	Try to provide support within the school	☐
Stop the teacher's yearly incremental rise	☐	Other please specify.....	☐

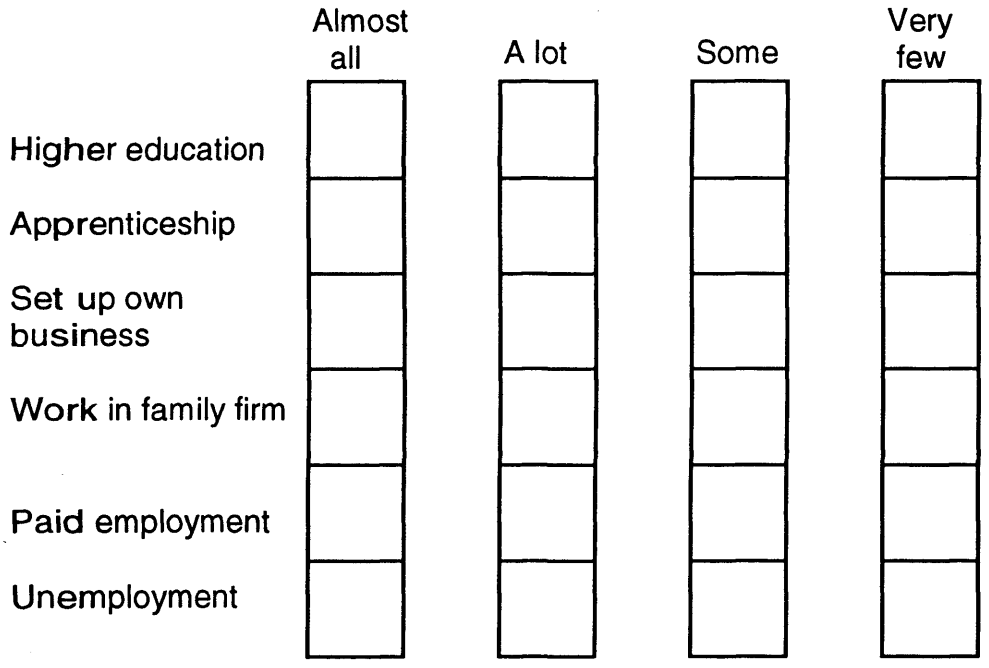
6. Please give your response to the following statements.

	Strongly Agree	Agree	Disagree	Strongly Disagree
The course objectives expressed and related to training needs are satisfactory.				
The content of curricula and syllabuses do not provide an appropriate level of practical training.				
The theoretical and practical areas are not co-ordinated.				
A two years course does not prepare students for employment.				
Courses designed to meet local needs are not available.				
Courses do not correspond to current and foreseeable industrial needs.				
Curricula and syllabuses are not reviewed and revised regularly.				
There is a satisfactory scheme for advising potential students and trainees about courses and careers.				
There is a satisfactory scheme for assisting students to find employment.				
There is a clear description of the examination scheme.				
There is a satisfactory scheme for grading staff in relation to experience, qualifications and responsibilities.				
Buildings and services are maintained satisfactorily in the school.				
The availability of materials and their use in the training are satisfactory.				
Overall, the school appears well-managed regarding management style and effectiveness.				
Industry participates in joint publicity or similar supporting activities.				
There is a regular arrangement for staff to be attached to industry.				
The schools creating a general work environment similar to that industry.				
There is a current national development plan for vocational education system.				
Quality of vocational education is monitored by Central Staff or State Government.				
The education department provides forsystematic and effective coverage of responsibility for planning implementation and follow-up.				

Is the Government Grant adequate to support the followinig areas ?



After passing the Higher Secondary School Certificate (Vocational) how many students go on to



In your school which vocational course would you judge as the most successful ?

.....

..... page-9

Does the school provide any on-the-job training programme designed jointly with local industry ?

Yes ☐ No ☐

If Yes, what is the nature and length of the programme ?

.....

.....

Does local industry provide you with any of the following types of support ? Please tick as many as apply.

Giving you their old machinery ☐	Sitting on committees examining curriculum ☐	Allowing student visits to industry ☐
Industrialists give talks in the school ☐	Jointly planning projects with school ☐	Giving you financial support ☐
Providing support for teacher developing curriculum materials ☐	Providing prizes for good students ☐	Providing careers advice ☐

How would you assess the interest of local industrialists in Higher Secondary School Vocational courses ?

Very High ☐ Considerable ☐ Some ☐ Very low ☐

After the publication of the results of the examinations for the Higher Secondary Certificate (Vocational) do you

	Yes	No
Arrange a celebration for those students who have passed and done well ?	☐	☐
Send all the students names, addresses and results to local industry and business ?	☐	☐
Give public honour to students ?	☐	☐
Send all the students names, addresses and results to the Employment Office ?	☐	☐
Send all the students names, addresses and results to the Western Regional Apprenticeship Office ?	☐	☐

Please tick the <u>three factors</u> which you feel would most improve the quality of Vocational Education.

Higher status for vocational education	☐	Spend more time on practical courses	☐
Improved building	☐	More opportunities for work experience during the course	☐
Improved equipment	☐	Provide better guidance during the course	☐
Raise standard of teaching staff	☐	Tighter discipline	☐
Increase length of course	☐	A guarantee of a job	☐
More opportunities for higher education	☐	Making the course more relevant to local needs	☐
Start vocational education at an earlier age	☐	Privatization of vocational education	☐

At what level, should vocational education start ?

At primary level	☐	At Secondary level	☐	At Higher Secondary level	☐

How satisfactory is government practice in the following areas ?

	Satisfactory	Unsatisfactory
Grant Policies for awarding grants.	☐	☐
Inspection of schools.	☐	☐
Plans for the future of vocational education.	☐	☐
Personal administrative support provided by state.	☐	☐
State government rules and regulations.	☐	☐
Staff's recrutment policy for vocational teachers.	☐	☐

	Satisfactory	Unsatisfactory
State policy for dismissal of staff.		
Links between schools and government.		
Government attitudes towards vocational school.		
State policy for dismissal of students.		
Government efforts to make vocational education popular.		
Policies to involve industry in vocational education.		
Facilities and support for students who have successfully completed the course.		
Policies for linking schools with industry.		
Policies for increasing the priority attached to vocational education.		

Please make your valuable and important suggestions to improve Vocational Education.

_____

_____

_____

_____

_____

_____

THANK YOU FOR COMPLETING THE QUESTIONAIRE

APPENDIX 3b
Questionnaire for Teachers

Govind Desai
14, Hudson Close
Leicester. U.K.

February 1996

Dear Teacher,

I am conducting research into higher secondary education in Gujarat as part of my studies for the degree of Ph.D. at Leicester University in England. I have been given your name as a teacher from Higher Secondary (Vocational) School. I would be grateful if you would complete the following questionnaire and return it to me in the envelope provided.

There are a few points which I hope you will bear in mind while filling out this questionnaire.

1) The questionnaire is not a 'test' or 'exam'. There are no right or wrong answers. The only 'right' answers are those which express your feelings, your opinions and your experiences.

2) The questionnaire is completely confidential. No one at the school will ever see it. No information from the questionnaire will ever be revealed except in the form of tables. Therefore please feel free to give truthful and complete answers to all of the questions below.

3) Please place a tick (√) mark in the appropriate boxes. Where you are asked to write the answer do not use the boxes.

Thanking you in anticipation of your co-operation.

Yours sincerely,

Govind Desai

CODE | | | | | | | |

1. What is your sex?

Female ☐

Male ☐

2. What is your age?

30 or less ☐

Between 31 and 40 ☐

Over 40 ☐

3. Which caste are you in

General ☐

Scheduled Tribe ☐

Scheduled Caste ☐

Socially and Educationally backward Caste ☐

Mandal Panch ☐

Ethnic Minority ☐

4 a. What Educational Qualifications have you obtained ?

Name of degree(s) Diploma / Certificate	Institution / University	Percentage obtained	Subjects
1 Diploma			
2 B.A./ B.Com./ B.Sc			
3 M.A./ M.Com./ M.Sc.			
4 M.Ed./ M.Phil./ Ph.D.			

What professional qualifications, including teacher training, have you obtained?

Name of degree/ diploma/certificate	Institution / University	Percentage obtained

What is your designation in the school ?

Vocational Teacher	☐	Working as full time	☐
Language Teacher	☐	Working as part time	☐
Instructor	☐		

Do you have industrial experience in the area of the course you teach?

Yes ☐ No ☐

If Yes please specify,

Nature of work	Length of time	Responsibility

How many years experiences have you had as a teacher ?

Under 5 years	☐
Between 5 year and 10 years	☐
Over 10 years and up to 15	☐
15 years and more	☐

ow important were the following reasons when you made your decision to nter the teaching profession ?

	Very important	Of some importance	Of little importance
Good salary			
Improving my social status			
Good working conditions			
A secure job			
My family are teachers			
It's easy to get a teaching job			
Little possibility of transfer			
If other, please state			

In your opinion how important were the following when you were selected for your current job ?

	Very important	Of some important	Of little important
My academic qualifications			
My professional qualifications			
My previous teaching experience			
My previous industrial experience			
A donation			
My contact with the principal			
Through personal contacts			
I was eligible for a reserved job			
If other, please state			

How many vocational teachers obtained their job by making a personal donation ?

Most of them	Some of them	A few	Hardly any	None
☐	☐	☐	☐	☐

Do you think the qualifications of vocational teachers are appropriate for their job ?

They are over qualified	☐
They are adequately qualified	☐
They are under qualified	☐

nder qualified, what extra qualifications do you need?

Better professional training	☐
Refreshment course	☐
More in-service courses	☐
More on the job training	☐
More industrial/commercial experience	☐

2. What subjects do you teach in the school?

Standard	Name of subjects		
11.	1.	2.	3.
12.	1.	2.	3.

15. **Please answer the following questions in relation to the vocational education you are currently involved in.**

The amount of time devoted to	should be increased	should be decreased	keep it as it is
Vocational subjects			
Language subject			
General foundation subjects			
Entrepreneurship			

The amount of time for practical work in	should be increased	should be decreased	keep it as it is
Vocational subject-1			
Vocational subject-2			
Vocational subject-3			
Entrepreneurship			

The amount of time for theoretical work in	should be increased	should be decreased	keep it as it is
Vocational subjects			
Language subject			
General foundation subjects			
Entrepreneurship			

The quality of syllabus	should be improved	is satisfactory		should be improved	is satisfactory
Vocational subjects			General Foundation subjects		
Language subject			Entrepren-eurship		

Relevance to the student's future carreer

	Of considerable relevance	Of some relevance	Of little relevance
Vocational subjects			
Language subject			
General foundation subjects			
Entrepreneurship			

16. **How do you rate the following aspects of your course ?**

	Satisfactory	Unsatisfactory		Satisfactory	Unsatisfactory
Laboratory and workshop			Guidance regarding teaching		
Library facilities			Quality of equipments in lab and workshop		
Instructional Materials			Maintenance and cleanliness of equipment		
Class room facilities			Physical facilities		

17. **Please tick the <u>three factors</u> which you feel would most improve the quality of vocational education.**

A higher status for vocational education		Spend more time on the practical course	
Improved building		More opportunities for work experience during the course	
Improved equipment		Provide better guidance during the course	
Raise standard of teaching staff		Tighter discipline	
Increase length of course		A guarantee of a job	
More opportunities for higher education		Making the course more relevant to local needs	
Start vocational courses at an earlier age		Privatization of vocational education	

Please give your response to the following statements.

	Strongly Agree	Agree	Disagree	Strongly Disagree
The course objectives expressed and related to training needs are satisfactory.				
The content of curricula and syllabuses do not provide an appropriate level of practical training.				
The theoretical and practical areas are not co-ordinated.				
A two years course does not prepare students for employment.				
Courses designed to meet local needs are not available.				
Courses do not correspond to current and foreseeable industrial needs.				
Curricula and syllabuses are not reviewed and revised regularly.				
There is a satisfactory scheme for advising potential students and trainees about courses and careers.				
There is a satisfactory scheme for assisting students to find employment.				
There is a clear description of the examination scheme.				
There is a satisfactory scheme for grading staff in relation to experience, qualifications and responsibilities.				
Buildings and services are maintained satisfactorily in the school.				
The availability of materials and their use in the training are satisfactory.				
Overall, the school appears well-managed regarding management style and effectiveness.				
Industry participates in joint publicity or similar supporting activities.				
There is a regular arrangement for staff to be attached to industry.				
The schools creating a general work environment similar to that industry.				
There is a current national development plan for vocational education system.				
Quality of vocational education is monitored by Central Staff or State Government.				
The education department provides forsystematic and effective coverage of responsibility for planning implementation and follow-up.				

19. **Is the equipment used in the school similar to that used in industries ?**

Similar	☐	Superior in quality	☐	Inferior in Quality	☐

20. **In your opinion, at what stage should we start vocational education ?**

At primary level	☐
At secondary level	☐
At higher secondary level	☐

Please make your valuable and important suggestions to improve Vocational Education.

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU FOR COMPLETING THE QUESTIONAIRE

APPENDIX 3c
Questionnaire for Students

Govind Desai
14, Hudson Close
Leicester. U.K.

February 1996

Dear Student,

I am conducting research into higher secondary education in Gujarat as part of my studies for the degree of Ph.D. at Leicester University in England. I have been given your name as a student from Higher Secondary (Vocational) School. I would be grateful if you would complete the following questionnaire and return it to me in the envelope provided.

There are a few points which I hope you will bear in mind while filling out this questionnaire.

1) The questionnaire is not a 'test' or 'exam'. There are no right or wrong answers. The only 'right' answers are those which express your feelings, your opinions and your experiences.

2) The questionnaire is completely confidential. No one at the school will ever see it. No information from the questionnaire will ever be revealed except in the form of tables. Therefore please feel free to give truthful and complete answers to all of the questions below.

3) Please place a tick (√) mark in the appropriate boxes. Where you are asked to write the answer do not use the boxes.

Thanking you in anticipation of your co-operation.

Yours sincerely,

Govind Desai

CODE | | | | | | | |

1. **What is your sex ?**

- Female
- Male

2. **Which Standard are you in ?**

- Standard 11
- Standard 12

3. **What is your age ?**

- 17 or less
- 18
- 19 or older

4. **Which caste are you in ?**

- General
- Scheduled Tribe
- Scheduled Caste
- Socially and Educationally backward Caste
- Mandal Panch
- Ethnic Minority

5. **Trade**

- Commerce
- Technical
- Home Science
- Agriculture

t educational qualifications have you already obtained ?

	SSC	HSC	Other Diplomas	Degree courses
Year Passed				
Percentage				
Number of trials				

hat was the highest level of education obtained by the following family members ? ease answer as many as applicable.

	Illiterate	Primary	Secondary	Graduate	Post graduate
Father					
Mother					
Brother					
Sister					

What is your main family occupation ?

Government employment		Worker	
Private employment		Farmer.	
Own business		Farm worker	
Partnership		Unemployment	
		Other	

What is your average monthly family income ?

Under 1000 rupees	
Between 1000 and 1500 rupees	
Between 1500 and 2500 rupees	
Between 2500 and 5000 rupees	
Over 5000 rupees	

When did you first become aware of vocational secondary education ?

At primary school	
At secondary school	
After passing the Secondary School Certificate	
Just before enrolling	

Where did you get most of your information about vocational secondary education from ? Please tick the three most important sources.

From my previous school		From my present school	
Through family and friends		From the careers service	
From school teacher(s)		From adverts in local newspaper	
From Government agencies		From social workers	
Getting leaflet		From social community leaders	
From employer		Other please state.....	
		.....	

How important were the following in your decision to undertake this course ?

	Highly Important	Of some importance	Of little importance	Of no importance
I was not accepted on the course I would have preferred to study				
I want to start my own business				
I want to learn new skills				
I want to improve my job prospects				
The course is easy to complete				
I am particularly interested in this area				
The course leads to a recognised national qualification				
The course leads to a good chance of getting a job				
The course has a good reputation locally				
The course is near to where I live				
The latest technology is used in the course				
The course is a new one				
The course has a good reputation regionally				
The course leads to further study				
My friends/ family recommended this course to me				
The only alternative to the course was unemployment				
There is provision to integrate disabled students				
The course is related to my family occupation				
Other please state.....				

Prior to starting the course, how do you assess the guidance you received from the following sources ?

	Good	Satisfactory	Poor
From your previous school			
From careers service			
From family and friends			
Through local newspapers			
From school teacher(s)			
From social and community leaders			
From Government agencies			

Please answer the following questions in relation to your present course

The amount of time devoted to	Should increased	Should be decreased	Keep it as it is
Vocational subjects			
Language subjects			
General foundation subjects			
Entrepreneurship			

The amount of time for practical work in			
Vocational subject-1			
Vocational subject-2			
Vocational subject-3			
Entrpreneurship			

The amount of time for theoretical work in

	should be increased	should be decreased	keep it as it is
Vocational subjects	☐	☐	☐
Language subject	☐	☐	☐
General foundation subjects	☐	☐	☐
Entrepreneurship	☐	☐	☐

The quality of the course

	should be improved	is satis-factory
Vocational subjects	☐	☐
Language subject	☐	☐
General foundation subjects	☐	☐
Entrepreneurship	☐	☐

The emphasis placed on the element

	should be increased	should be decreased	keep it as it is
Vocational subjects	☐	☐	☐
Language subject	☐	☐	☐
General Foundation subjects	☐	☐	☐
Entrepreneurship	☐	☐	☐

Relevance to your future plans

	of consider-able relevance	of some relevance	of little relevance
Vocational subjects	☐	☐	☐
Language subject	☐	☐	☐
General Foundation subjects	☐	☐	☐
Entrepreneurship	☐	☐	☐

How do you rate the following aspects of your course ?

	Satis-factory	Unsatis-factory
Building and maintenance		
General environment of school		
School time		
Discipline		
Theory class room		
Laboratory and workshop		
Equipment in lab and workshop		
Level of providing training		

	Satis-factory	Unsatis factory
Library		
Nos. of teacher		
Quality of teachers		
Visit to industries		
Talks by experts		
Practical work		
Availability of raw materials		

What is the average class size in your school ?

Theory class ☐

Laboratory or work-shop class ☐

What is your opinion of the course compared with your expectations ?

It meets my needs and expectations ☐

I am disappointed by the course ☐

If you are disappointed by the course, what are the main reasons.

.....

.....

.....

What do you think about the theory and practical syllabus of your course ?

Theory

Course too difficult	
Course too easy	
Level about right	

Practical

Course too difficult	
Course too easy	
Level about right	

Please tick the <u>three factors</u> which you feel would most improve the quality of Vocational Education.

Higher status for vocational education		Spend more time on the practical course	
Improved building		More opportunities for work experience during course	
Improved equipment		Provide better guidance during the course	
Raise standard of teaching staff		Tighter discipline	
Increase length of course		A guarantee of a job	
More opportunities for higher education		Making the course more relevant to local needs	
Start vocational courses at an earlier age		Privatization of vocational education	

What do you think are your chances of the following at the end of your course ?

	Good	Fair	Poor
Entering the family profession /occupation			
Full employment			
Apprenticeship			
Higher education			
Setting up your own business			
Government loan			
Increase in social status			

Are you prepared to enter work unrelated to your course if you cannot find relevant work ?

Yes ☐

No ☐

Do you feel now you made the right choice in coming on the vocational course ?

Yes ☐

No ☐

Do you feel your views are representative of all students ?

Yes ☐

No ☐

If you would like to add any further views on the vocational course please use the space below.

THANK YOU FOR COMPLETING THE QUESTIONAIRE

APPENDIX 3d
Questionnaire for Ex-students

Govind Desai
14, Hudson Close
Leicester. U.K.

February 1996

Dear Ex-student,

I am conducting research into higher secondary education in Gujarat as part of my studies for the degree of Ph.D. at Leicester University in England. I have been given your name as an Ex-student from Higher Secondary (Vocational) School. I would be grateful if you would complete the following questionnaire and return it to me in the envelope provided.

There are a few points which I hope you will bear in mind while filling out this questionnaire.

1) The questionnaire is not a 'test' or 'exam'. There are no right or wrong answers. The only 'right' answers are those which express your feelings, your opinions and your experiences.

2) The questionnaire is completely confidential. No one at the school will ever see it. No information from the questionnaire will ever be revealed except in the form of tables. Therefore please feel free to give truthful and complete answers to all of the questions below.

3) Please place a tick (√) mark in the appropriate boxes. Where you are asked to write the answer do not use the boxes.

Thanking you in anticipation of your co-operation.

Yours sincerely,

Govind Desai

CODE | | | | | | | |

. What is your sex ?

Female ☐

Male ☐

. What is your age ?

19 or less ☐

20 ☐

21 or older ☐

. Which caste are you in ?

General ☐

Scheduled Tribe ☐

Scheduled Caste ☐

Socially and Educationally Backward Caste ☐

Mandal Panch ☐

Ethnic Minority ☐

Please give details of your Higher Secondary School Certificate (Vocational).

Name of trade

Commerce ☐ Technology ☐

Home Science ☐ Agriculture ☐

Name of Course .....

Passing year :- ..... **Nos. of trials :-** .....

Percentage :- .....

What other educational qualifications have you already obtained ?

	S.S.C.	H.S.C. excluding vocational	Other diplomas	Degree courses
Year Passed				
Percentage				

What was the highest level of education obtained by the following family members ? Please answer as many as applicable.

	Illiterate	Primary	Secondary	Graduate	Post-graduate
Father					
Mother					
Brother					
Sister					

What is your main family occupation ?

Government employment		Farmer	
Private employment		Farm worker	
Own business		Unemployment	
Partnership		Other please specify.....	
Worker			

What is your average monthly family income ?

Under 1000 rupees	☐	Between 1500 and 2500 rupees	☐
Between 1000 and 1500 rupees	☐	Between 2500 and 5000 rupees	☐
		Over 5000 rupees	☐

How important were the following in obtaining your present job ?

	Highly Important	Of some importance	Of little importance	Of no importance
My own efforts	☐	☐	☐	☐
With the help of the letter sent by school	☐	☐	☐	☐
With the help of relatives and friends	☐	☐	☐	☐
Through contacts made during the course	☐	☐	☐	☐
Through newspapers, radio etc.	☐	☐	☐	☐
Through Government Employment Department	☐	☐	☐	☐
Through the Western Apprenticeship Board	☐	☐	☐	☐

When did you find your present job ?

Before I finished my school course	☐	Between 6 and 12 months after finishing the course	☐
Up to 6 months after finishing the course	☐	Over 12 months after finishing the course	☐

How did you obtain your present job ?

With great difficulty	☐
With some difficulty	☐
With little difficulty	☐
With no difficulty	☐

Is your present job related to the content of your vocational course?

Yes	☐
No	☐

If your present job is unrelated. Why?

I tried but could not find a job related to my course	☐
I did not wish to undertake a job related to my course	☐
I have a job but I am still looking for a job related to my course	☐
I could not find a job close to my place of residence	☐

How important are the following parts of your vocational course for undertaking your present job effectively ?

	Highly important	Of some importance	Of litttle importance	Of no importance
Theoretical knowledge in vocational subjects and entrepreneurship	☐	☐	☐	☐
Practical skills in vocational subjects and entrepreneurship	☐	☐	☐	☐
Work Experience	☐	☐	☐	☐

Which of the following subjects of your vocational course has helped you to be effective in your present job ? Please tick only one.

Vocational subjects	☐
Language subject	☐
General foundation subjects	☐
Entrepreneurship	☐

How do you think your treatment compares with other employees in the following aspects of the work situations ?

	Better	About the same	Worse
Conditions in the work place	☐	☐	☐
Other facilities e.g. transport,food	☐	☐	☐
Respect	☐	☐	☐
Training	☐	☐	☐
Benefits e.g. holidays, bonuses	☐	☐	☐

Which of the following skills do you think has helped you to be effective in your present job ? Please tick only three.

Ability to work well with other	☐	Practical skills	☐
Communication skills	☐	Ability to use initiative	☐
Numeracy skills	☐	Ability to follow instruct-ions	☐
		Problem solving skills	☐

7. **Is this your first job?**

Yes ☐

No ☐

8. **How much do you earn per month?**

Below 500 rupees ☐

Between 500 and 750 rupees ☐

Between 750 and 1000 rupees ☐

Over 1000 rupees ☐

9. **How much do you spend on travel to work each month?**

More than I earn ☐

All that I earn ☐

Over 75% of what I earn ☐

Over 50% of what I earn ☐

Over 25% of what I earn ☐

Less than 25% ☐

10. **When you passed the Higher Secondary School Certificate did you expect to earn ?**

More than now ☐

Less than now ☐

About what I get ☐

11. **In your present job, are you using equipment similar to that you used during your schooling.**

Yes ☐

No ☐

Was what you learned during your schooling enough to enable you to perform successfully on your job?

Yes ☐

No ☐

1. **Please tick the <u>three factors</u> which you feel would most improve the quality of Vocational Education.**

Higher status for vocational education		Spend more time on the practical course	
Improved building		More opportunities for work experience during course	
Improved equipment		Provide better guidance during the course	
Raise standard of teaching staff		Tighter discipline	
Increase length of course		A guarantee of a job	
More opportunities for higher education		Making the course more relevant to local needs	
Start vocational courses at an earlier age		Privatization of vocational education	

As you look back to your Higher Secondary School Certificate (vocational)

I wish I had not taken a vocational course but had taken an academic one	
I wish I had taken work rather than stay at school	
I wish I had done another vocational course	
I am glad that I did my particular vocational course	

If a friend or relative asked you whether to undertake the Higher Secondary Schools Certificate (Vocational) would you recommend them

Yes	
No	

. After you have completed your apprenticeship do you intend to

Find another job	
Start own business	
Join family occupation	
Enter higher education	
Don't know	

Please make your valuable and important suggestions to improve Vocational Education.

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU FOR COMPLETING THE QUESTIONAIRE

APPENDIX 3e
Questionnaire for Employers

Govind Desai
14, Hudson Close
Leicester. U.K.

February 1996

Dear Employer,

I am conducting research into higher secondary education in Gujarat as part of my studies for the degree of Ph.D. at Leicester University in England. I have been given your name as an Employer from Higher Secondary (Vocational) School in your area. I would be grateful if you would complete the following questionnaire and return it to me in the envelope provided.

There are a few points which I hope you will bear in mind while filling out this questionnaire.

1) The questionnaire is not a 'test' or 'exam'. There are no right or wrong answers. The only 'right' answers are those which express your feelings, your opinions and your experiences.

2) The questionnaire is completely confidential. No one at the school will ever see it. No information from the questionnaire will ever be revealed except in the form of tables. Therefore please feel free to give truthful and complete answers to all of the questions below.

3) Please place a tick (√) mark in the appropriate boxes. Where you are asked to write the answer do not use the boxes.

Thanking you in anticipation of your co-operation.

Yours sincerely,

Govind Desai

CASE NUMBER | | | | | | | |

What is your sex ?

Female

Male

Ownership of Business

Sole Proprietor

Partnership

Limited company

Public company

Government enterprise

If other, please state

Area

Rural

Urban

Number of total employees

Number of vocational apprentices

low important are the following when you recruit new workers ?
'lease tick the <u>two most important</u> for both workers and vocational apprentices.

	Workers	Vocational apprentices
Personal recommendation		
Written tests		
Academic qualifications		
Relevant experience		
Age		
Caste of applicant		
Reference from former employers		
References from other workers		
References from schools		
The government employment department		
Recommendation by the Government Apprenticeship Board		
Other please state		

low easily can you recruit workers for the following levels

	very easily	easily	with some difficulties	with great difficulties
Unskilled workers				
Semi-skilled workers				
Skilled workers				
Vcoational apprentices				

ɔw do you normally recruit vocational apprentices ?

	Usually	Sometimes	Rarely
Through media, newspapers			
By relatives			
Government employment department			
Private employment agencies			
Contacting vocational schools			
Other please specify			

ɔw important are the following when you make a decision to employ a ocational apprentice ?

	Highly Important	Of some importance	Of little importance	Of no importance
They are easily available				
They are more reliable				
They are more productive immediately on employment				
They display more initiative				
It fulfills government imposed quotas				
They are easier to dismiss				
They are cheaper				
They have relevant practical experience				
They follow instruction better				
They are more enthusiastic				
They have more theoretical knowledge and practical experience				
They can advance faster				

Please indicate your annual intake of vocational apprentices and the numbers appointed later to permanent position.

Yeay	Number of vocational apprentices appointed	Numbers given permanent position
1995		
1994		
1993		

How do you rate vocational apprentices compared with workers in the same occupations but with different educational backgrounds ?

They are better ☐ They are the same ☐ They are not as good ☐

If you consider vocational apprentices to be not as good as the other workers, what do you consider the main reasons ?

	Very important	Of some importance	Of little importance	Of no importance
They lack appropriate attitudes	☐	☐	☐	☐
They lack theoretical knowledge	☐	☐	☐	☐
They lack practical knowledge	☐	☐	☐	☐
They lack practical skills	☐	☐	☐	☐
They lack discipline	☐	☐	☐	☐
They are not acquainted with the machinery in the workplace	☐	☐	☐	☐
They lack commitment	☐	☐	☐	☐
Other please state	☐	☐	☐	☐

How important are the following skills for undertaking the jobs in your company that vocational apprentices undertake ?

	Highly important	Of some importance	Of little importance	Of no importance
Skills of working with others				
Communication skills				
Practical skills				
Numeracy skills				
Ability to use initiative				
Ability to follow instructions				
Problem solving skills				

How do you rate your vocational apprentices in relation to the skills listed above ?

	Very highly	Highly	Adequate	Poor
Skills of working with others				
Communication skills				
Practical skills				
Numeracy skills				
Ability to use initiative				
Ability to follow instructions				
Problem solving skills				

low would you characterise vocational apprentices attitude to your business ?

Very committed ☐ Committed ☐ Not committed enough ☐

What is your overall view of vocational apprentices ?

Very satisfactory ☐ Satisfactory ☐ Unsatisfactory ☐

Have you ever received a recommendation letter regarding vocational apprentice from the following agencies ?

	Yes	No
School	☐	☐
Government Apprenticeship Board	☐	☐
Local community leaders	☐	☐
Other employers	☐	☐
District Education Department	☐	☐
Government employment department	☐	☐

Are you aware of the following ?

	Yes	No
Government Apprenticeship Act	☐	☐
Government educational reforms	☐	☐
Your local vocational school and its programmes	☐	☐
Your local vocational courses	☐	☐

What contacts have you with your local school ? Please tick as many as apply.

I have no contact	☐	I get letters from the school	☐
Through students	☐	A school representative visits me	☐
The school invites me occasionally	☐	I give expert talk at the school	☐

Please tick the <u>three factors</u> which you feel would most improve the quality of vocational education.

A higher status for vocational education		Spend more time on the practical course	
Improved building		More opportunities for work experience during the course	
Improved equipment		Provide better guidance for during the course	
Raise standard of teaching staff		Tighter discipline	
Increase length of course		A guarantee of a job	
More opportunities for higher education		Making the course more relevant to local needs	
Start vocational courses at an earlier age		Privatization of vocational education	

Would you be willing to join ?

	Yes	No
The Syllabus Making Committee		
The Improving Vocational Education Committee		
Vocational School Management in your area		

Do you provide schools with any of the following types of support ? Please tick as many as apply.

Giving them your old machinery		Providing prizes for good students	
Give talks in schools		Providing visits to industry for students	
Providing support for teachers in developing curriculum materials		Giving schools financial support	
Sitting on committee examining curriculum		Providing students with careers advice	
Jointly planning projects with school(s)			

Would you recommend other employers to employ more vocational apprentices ?

Yes ☐

No ☐

If you would recommend them to employ apprentices, why?

.....

.....

.....

If you would not recommend them to employ apprentices, why not?

.....

.....

.....

Please make your valuable and important suggestions to improve Vocational Education.

_____

_____

_____

_____

_____

THANK YOU FOR COMPLETING THE QUESTIONAIRE

APPENDIX 4a

Questionnaire for Principals (in Gujarati)

Govind Desai
(M.Com, M.Ed., M.Phil.)
14, Hudson Close,
Leicester,
U.K.

આદરણીય પ્રિન્સીપાલશ્રી,

ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષિણના સંશોધનનો અભ્યાસ મેં ઇંગ્લેન્ડની લેઇસ્ટર યુનિવર્સિટીની પીએચ.ડી.ની પદવી મેળવવા માટે હાથ ધર્યો છે. આપ શાળાના આદરણીય પ્રિન્સીપાલ છો. આ સાથે પ્રસ્તુત અભ્યાસના સંદર્ભમાં તૈયાર કરેલ પ્રશ્નાવલિ છે જે ભરવા માટે આપને વિનંતી કરું છું.

પ્રશ્નાવલિમાં વિગતો ભરતી વખતે નીચેની સૂચનાઓ અવશ્ય ધ્યાનમાં રાખશો.

૧. પ્રશ્નાવલિએ કસોટી કે પરીક્ષા નથી. એમાં સાચા કે ખોટા ઉત્તરો નથી. સાચા ઉત્તરો એ જ છે જે તમારી લાગણીના પ્રતિભાવો છે. તમારા અભિપ્રાયો અને અનુભવો છે.

૨. પ્રશ્નાવલિ સંપૂર્ણ ગોપનીય છે. શાળામાં એની માહિતી કોઈને આપવાની નથી. પ્રશ્નાવલિમાંથી મળેલી માહિતી કોઠાઓમાં ગોઠવીને અર્થઘટન માટે ઉપયોગમાં લેવાની છે. એટલે નિરાંતે અને મુક્ત મનથી પ્રશ્નોના સાચા જવાબો આપવા વિનંતી.

૩. સાચા ઉત્તર સામે આપેલા બોક્ષમાં (✓) ની નિશાની કરો જ્યાં ઉત્તર લખવાનો હોય ત્યાં બોક્ષ (પેટી)નો ઉપયોગ ન કરશો પેટીની સાથે આપેલા આંકડા ધ્યાનમાં લેવાના નથી. એ પ્રશ્નાવલિના ઉત્તરોના ક્રમાંકન માટે છે.

આપના સહકારની અપેક્ષા છે.

આપનો

ગોવિંદ દેસાઈ

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા ☐ ના ☐

જો હા, તો આપનું સરનામું જણાવો :

કોડ

1. જાતિ

સ્ત્રી	
પુરુષ	

2. ઉંમર

30 કે તેથી ઓછી	
31 થી 40 ની વચ્ચે	
40 થી વધુ	

3. શૈક્ષણિક અને વ્યવસાયિક લાયકાત જણાવો

ડિગ્રીના નામ (શૈક્ષણિક અને વ્યવસાયિક)	પાસ કર્યાનું વર્ષ	ગ્રેડ

4. આપને કેટલા વર્ષોનો અનુભવ છે ?

શિક્ષક તરીકેનો	
પ્રિન્સીપાલ તરીકેનો	

5. આપની શાળાનો પ્રકાર જણાવો.

સરકારી શાળા	
ખાનગી શાળા	
અર્ધ સરકારી શાળા	

માત્રછોકરીઓની	
માત્રછોકરાઓની	
છોકરાઓ અનેછોકરીઓની (સહ શિક્ષણ)	

6. આપની શાળામાં વ્યવસાયલક્ષી શિક્ષણની શરૂઆત કોણે કરી હતી ?

સ્વયં	
અગાઉના પિન્સીપાલે	
સંચાલક બોર્ડની દોરવણીથી	
સરકારની દોરવણીથી	
આજુબાજુના ઔધોગિક જૂથોના સૂચનથી	
વિસ્તારના સામાજીક નેતાઓની વિનંતીથી	

7. આપની શાળામાં અભ્યાસ કરતા વિદ્યાથીઓની સંખ્યા ?

ઉચ્ચતર માધ્યમિકના કુલ વિદ્યાર્થીઓની સંખ્યા (વ્ય. વિદ્યાર્થીઓ સિવાય)	
વ્યવસાયલક્ષીના વિદ્યાર્થીઓની સંખ્યા	

8. શાળામાં કયા વ્યવસાયલક્ષી અભ્યાસક્રમ રાખે છે ?

૧. વાણિજ્ય જૂથમાં ૧ ૨ ૩

૨. હોમસાયન્સ જૂથ ૧ ૨ ૩

૩. ટેકનીકલ જૂથ ૧ ૨ ૩

૪. ટેકનોલોજી જૂથ ૧ ૨ ૩

૯. વ્યવસાયલક્ષી અભ્યાસક્રમ શરૂ કરવાના નિર્ણય માટે નીચેના મદ્દાઓ કેવા મહત્ત્વના હતા . ?

	ખૂબ મહત્ત્વના	કેટલાક મહત્ત્વના	થોડાંક મહત્ત્વના	બિલકુલ નહીં.
વિદ્યાર્થીઓની માગણી				
સ્થાનિક ધંધો અને ઉદ્યોગની જરૂરિયાત				
સ્ટાફની સરળ પ્રાપ્તિ				
સરકારી પ્રોત્સાહનો				
વહીવટી સરળતા				
સગવડતાની ઉપલબ્ધતાને કારણે				
સરકારી ખાતાની ભલામણે				
બીજુ કોઈ કારણ હોય તો દર્શાવો				

૧૦. વ્યવસાયલક્ષી અભ્યાસક્રમ માટે વિદ્યાર્થી પ્રવેશ માટે કંઈ પધ્ધતિ અપનાવેલી (જરૂરી હોય તે મુદ્દામાં ✔ કરો)

શૈક્ષણિક લાયકાત		વિદ્યાર્થીઓના રસને કારણે	
લેખિત પરીક્ષા દ્વારા		પ્રાયોગિક કસોટી દ્વારા	
ઓછી ગુણવત્તાવાળાને પસંદ નહિ કરવા		સરકારી સૂચનથી	
મૌખિક ઈન્ટરવ્યુ દ્વારા		શારીરિક પરીક્ષા દ્વારા	
વલણ કસોટી દ્વારા		ઔદ્યોગિક જૂથના સૂચનથી	

11. વિદ્યાર્થીની પસંદગીની પ્રકિયામાં શાળા દ્વારા ખાસ બજેટનો ખર્ચ કરવામાં આવે છે ?

હા ☐

ના ☐

12. એડમીશન આપવામાં આવેલ વિદ્યાર્થીઓનું વિસ્તારની દષ્ટિએ પ્રમાણ કેટલુ હોય છે ?

મોટાભાગના વિદ્યાર્થીઓ શાળા જે વિસ્તારમાં આવેલી છે તે વિસ્તારના હોય છે ? ☐

મોટાભાગના વિદ્યાર્થીઓ શાળા જે નગર કે શહેરમાં આવેલી છે તે શહેરના હોય છે. ☐

મોટાભાગના વિદ્યાર્થીઓ નગર કે શહેર બહારના હોય છે. ☐

13. વ્ય. પ્રવાહમાં એડમીશન આપવામાં આવેલ વિદ્યાર્થીઓ મોટેભાગે કયાંથી આવે છે.

આપની શાળામાંથી ☐

બીજી શાળામાંથી ☐

14. આપ સરકારે નક્કી કરેલ વર્ગસંખ્યા સાથે સહમત છો ?

હા ☐

ના ☐

જો "ના" તો કેટલી વર્ગ સંખ્યા હોવી જોઈએ ?

10 સુધી ☐ 10 અને 15 ની વચ્ચે ☐ 16 અને 20ની વચ્ચે ☐ 20થી વધુ ☐

આપના વર્ગની સરેરાશ સંખ્યા કેટલી ?

(સંખ્યામાં લખો) ☐

15. વ્ય. અભ્યાસક્રમમાં એક શિક્ષક દીઠ વિદ્યાર્થીની સરેરાશ સંખ્યા કેટલી છે ?

વિદ્યાર્થીની સંખ્યા ☐

16. આપ જયારે નવા વ્યવસાયલક્ષી શિક્ષકની પસંદગી કરો છો ત્યારે નીચેના ધોરણો કેટલાં મહત્ત્વના ધોરણો હોય છે ?

	ખુબજ મહત્ત્વના	કેટલાક મહત્ત્વના	થોડાંક મહત્ત્વ	બિલકુલનહીં
શૈક્ષણિક લાયકાત	☐	☐	☐	☐
વ્યવસાયિક લાયકાત	☐	☐	☐	☐
શિક્ષકનો અનુભવ	☐	☐	☐	☐
વ્યવહારિક અનુભવ	☐	☐	☐	☐
ઔદ્યોગિક અનુભવ	☐	☐	☐	☐
શાળાના સંચાલકનો નિર્ણય મુજબ સરકારના ધારા ધોરણ મુજબ ઓછામાં	☐	☐	☐	☐
ઓછી ગુણવત્તા હોવી અને વિધયાત્મકતા	☐	☐	☐	☐
બીજી કોઈ રીતે કરત હોયતો જણાવો	☐	☐	☐	☐

17. અનુભવી અને લાયકાતવાળા વ્યવસાયલક્ષી શિક્ષકની ભરતી કરવી આપને માટે શકય છે ?

હા ☐

ના ☐

જો "ના" તો મુખ્ય કારણ કયું ? જરૂર જણાય ત્યાં (✔) કરો.

પગાર ઘણો ઓછો છે માટે અનુભવી શિક્ષક મળતા નથી. ☐

શક્ષકોને સામાજિક મોભો મળતો નથી. ☐

ઔદ્યોગિક અનુભવ ધરાવતા ઘણા ઓછા શિક્ષકોછે. ☐

શિક્ષકોની શૈક્ષણિક લાયકાત વ્ય.લક્ષી શિક્ષણને સંબંધિત નથી. ☐

વ્ય.શિક્ષણ સારા શિક્ષકોને આકર્ષતુ નથી. ☐

બીજું કોઈ કારણ હોય તો જણાવો. ☐

18. વ્યવસાયલક્ષી શિક્ષકોની ફેરબદલીની ટકાવારી બીજા શિક્ષકોના પ્રમાણમાં કેટલી હોય છે ?

20 % કરતાં વધારે ☐

10 % 20 % વચ્ચે ☐

5 % થી 10 % વચ્ચે ☐

5 % થી ઓછા ☐

સામાન્ય રીતે વ્યવસાયલક્ષી શિક્ષકોની કામગીરીનું મુલ્યાંકન કરતાં આપને શું જણાય છે ?

બધાજ શિક્ષકોને વધારે તાલિમ આપવી પડે અને અપગ્રેડ	☐
ઘણાં શિક્ષકોને વધારાની તાલિમ, કૌશલ્યો અને અનુભવની જરૂર છે.	☐
સામન્યરીતે સંતોષજનક છે પરંતુ કેટલાક શિક્ષકોને અમુક ક્ષેત્રમાં તાલીમની જરૂરી છે.	☐
બધાજ શિક્ષકોની કામગીરી સંતોષનજક છે.	☐

જો આપ માનતા હોય કે સ્ટાફને વધુ ટ્રેઈનીંગ અને અનુભવની જરૂર છે તો નીચેના કયા ક્ષેત્રમાં જરૂરી છે. જરૂર હોય ત્યાં (✔) કરો.

વ્યવસાયિક કે ટેકનીકલ જ્ઞાનના ક્ષેત્રે	☐	પ્રાયોગિક કે કૌશલ્ય ક્ષેત્રે	☐
શિક્ષણની પ્રયુકિતઓ	☐	ઔદ્યોગિક અનુભવ અંગે	☐
શાળા સંચાલનની તાલીમ	☐	બીજુ કોઈ ક્ષેત્ર હોય તો જણાવો _____	☐

શું આપ માનો છો કે વ્ય. શિક્ષણ માટે સાધારણ શિક્ષકની લાયકાત પૂરતી છે ?

હા	☐
ના	☐

જો ''ના'' તો વ્ય. શિક્ષકો માટે કઈ ખાસ તાલીમની જરૂરીયાત છે.

વધારે પ્રાયોગિક અને વ્યવસાયિક અનુભવની તાલીમ.	☐	વ્ય. શિક્ષકો માટે ખાસ તાલીમ અને લાયકાત ઉભાં કરવાં જોઈએ	☐
બીજી કોઈ તાલીમ હોય તો જણાવો.....	☐		

આપ વ્યવસાયલક્ષી શિક્ષકોને બીજા શિક્ષકો સાથેની કાર્યની મૂલવણીમાં કેવી રીતે સરખાવો છો. ?

તેઓ વધારે ઉત્સાહીન અને કાર્યદક્ષ છે.	☐
તેઓ બરોબર છે.	☐
તેઓઓછા ઉત્સાહિત અને કાર્યદક્ષ હોય છે.	☐

જો આપ એમ વિચારતા હો કે વ્યવસાયલક્ષી શિક્ષકો ઓછી કાયક્ષમવાળા હોય તો શા માટે તેવું વિચારો છો તે માટે નીચેના યોગ્ય કારણોમાં (✔) કરો.

સામાજીક મોભાનો અભાવ		વિદ્યાર્થીઓ તરફથી પ્રોત્સાહન ઓછું મળે છે.	
શિક્ષકમાં ગુણવત્તાનો અભાવ		કારકીર્દિની પ્રગતિનો અભાવ	
અપૂરતા સાધનો અને સગવડોનો અભાવ	✓	બીજી કોઈ રીતે હોય તો જણાવો	

13. **આપ વ્યવસાયલક્ષી શિક્ષકોને ચાલુ નોકરીયે તાલીમની સુવિધાઓ પુરી પાડો છો ?**

હા	
ના	

જો ના , તો મુખ્ય કારણો કયા ? તે કારણો સામે (✔) કરો.

નાણાંકિય સાધનોનો અભાવ		સંબંધિત કોર્સ પ્રાપ્ત થતા નથી	
વ્યવસાયલક્ષી શિક્ષકોને રસ હોતો નથી		એવા કોર્સ ફરજિયાત નથી માટે શિક્ષકોની સંખ્યા ઓછી હાજર રહે છે.	
આ પ્રકારના કોર્સમાં બઢતીનો અવકાશ નથી		આ પ્રકારના ચાલતા કોર્સ શાળાથી ઘણે જ દૂર હોય છે.	
સરકારી સંસ્થાઓ આ પ્રકારના કોર્સ પૂરતા પ્રમાણમાં યોજતી નથી.		આ પ્રકારના કોર્સ ઘણી નીચી ગુણવત્તાવાળા હોયછે.	

4. **દરેક વ્યકિતગત શિક્ષકની કામગિરી ચકાસવા આપ કઈ પદ્ધતિઓ અપનાવો છો ?**

પાસ થયેલ વિદ્યાર્થીઓ પરથી		સુપરવાઈઝરના મૂલ્યાંકન દ્વારા	
શિક્ષકની હાજરીનો રેકોર્ડ પરથી		વિદ્યાર્થીના અભિપ્રાય પ્રમાણે	
વર્ગખંડમાં શિક્ષકનાં શિક્ષણકાર્ય દરમ્યાન કરેલ નિરીક્ષણના અહેવાલ પરથી		બીજી કોઈ રીતે	

5. **જો શિક્ષક ખરેખર ફરજ બજાવવામાં નિષ્ફળ જાયતો તમો સામાન્ય રીતે કયા એકશન લો છો ? તેની સામે (✔) કરો.**

તાલિમ પર મોકલવા		સંચાલન સમિતિ સમક્ષ યોગ્ય કાર્યવાહી માટે રજૂઆત કરવી	
ડીસમીસ કરવા માટે ફોર્મલ ચેતવણી આપવી		શાળામાં જ સુધારવા પ્રયત્ન કરવા	
શિક્ષકનું વાર્ષિક ઈન્ક્રીમેન્ટ રોકવું		બીજી કોઈ રીતે હોય તો જણાવો	

6 નીચેના વિધાનો અંગે આપનો પ્રત્યુત્તર આપો.

	સંપૂર્ણ સહમત	સહમત	અસહમત	સંપૂર્ણ અસહમત
અભ્યાસક્રમના હેતુઓ તાલીમની જરૂરિયાત સાથે સંતોષકારક છે.				
કોર્ષ અને અભ્યાસક્રમ જરૂરી પ્રાયોગિક તાલીમ પૂરી પાડતા નથી.				
સૈધ્ધાંતિક અને પ્રાયોગિક વિભાગો પરસ્પર જોડાયેલ નથી.				
બે વર્ષનો અભ્યાસક્રમ વિદ્યાર્થીને રોજગાર માટે તૈયાર ન કરી શકે.				
સ્થાનિક જરૂરિયાતને લગતા અભ્યાસક્રમ ઉપલબ્ધ નથી.				
ચાલુ અને ભવિષ્યની ઔદ્યોગિક ક્ષમતા પરિપૂર્ણ બધી રીતે કરે છે.				
અભ્યાસક્રમ અને કોર્ષ નિયમિત રીતે પુનઃ મુલ્યાંકન અને પરિવર્તન થતા નથી.				
ભવિષ્યના વિદ્યાર્થીઓ અને તાલીમાર્થીઓને માર્ગદર્શન આપવા માટે સંતોષકારક યોજના નથી.				
તાલીમાર્થીને રોજગાર શોધવા માટેની યોજના સંતોષકારક છે.				
પરીક્ષા માટેની યોજના સ્પષ્ટ છે.				
કર્મચારીઓના અનુભવ, લાયકાત અને જવાબદારીના અનુસંધાનમાં બઢતીની યોજના સંતોષકારક છે.				
મકાન અને અન્ય સેવાઓ શાળામાં જળવાય છે.				
જરૂરી ચીજો તેના ઉપયોગના પ્રમાણમાં ઉપલબ્ધ છે.				
એકંદરે શાળામાં વહીવટ ખૂબજ અસરકારક રીતે કામ કરે છે.				
ઉદ્યોગો સંલગ્ન જાહેરાત અથવા તેના જેવી ઉપયોગી બાબતોમાં ભાગ લે છે.				
કર્મચારીઓ ઉદ્યોગો સાથે જોડાવવા નિયમિત વ્યવસ્થા કરવામાં આવે છે.				
શાળા ઔદ્યોગિક વાતાવરણ ઊભું કરે છે.				
વ્યવસાયલક્ષી શિક્ષણ-પધ્ધતિના વિકાસ માટેની રાષ્ટ્રીય યોજના છે.				
વ્યવસાયલક્ષી શિક્ષણની ગુણવત્તા કેન્દ્ર અથવા રાજ્ય દ્વારા સંકલન કરાય છે.				

7 નીચેના દરેક સાધનો માટે સરકારી ગ્રાન્ટ પૂરતી છે ?

	ખૂબજ પૂરતી છે	પૂરતી	પૂરતી નથી.
વર્ગખંડો માટે			
સ્પેશ્યલ પ્રયોગશાળા માટે			
સ્પેશ્યલ વર્કશોપ માટે			
મકાન અને મરામત માટે			
પુસ્તકાલયની સગવડ માટે			
શિક્ષણનાં સાધનો માટે			
વિદ્યાર્થીઓ માટેના પ્રાયોગિક મટિરીયલ્સ માટે			
વહીવટી સેવાઓ માટે.			

8 ધોરણ-૧૨ પાસ કર્યા પછી વિદ્યાર્થીઓ કયાંય જાય છે ?

	બધાજ	કેટલાક	થોડાક	નહિવત
ઉચ્ચ અભ્યાસમાં				
એપ્રેન્ટીસ શીપ માં				
સ્વરોજગારમાં				
કુટુંબના વ્યવસાયમાં				
નોકરી કરે છે.				
બેરોજગાર				

9 આપની શાળામાં ચાલતા અભ્યાસક્રમમાં કયો અભ્યાસક્રમ વધારે સફળ થયો છે ?

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શાળાએ સ્થાનિક ઉદ્યોગ સાથે જોડાણ કરીને **on-the-job-training** પ્રોગ્રામ કરેલ છે ?

હા ☐

ના ☐

હા, તો કયા પ્રકારનો અને કેટલા સમયનો કાર્યક્રમ હતો ?

.....

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આપને સ્થાનિક ઉદ્યોગો નીચેનામાંથી કયા પ્રકારે ટેકો આપે છે ? જરૂરી હોય છે તે બધાજ ખાનામાં ટીકમાર્ક કરો.

…ને તેમના જૂના યંત્રો આપે છે	☐	અભ્યાસની પરીક્ષા સમિતિમાં મદદરૂપ થાય છે.	☐	વિદ્યાર્થીને એકમની મુલાકાત આપે છે.	☐
…ોગપતિઓ શાળામાં …ન આપે છે.	☐	શાળા સાથે સંયુક્ત પ્રોજેકટનું આયોજન કરે છે.	☐	નાણાંકિય ટેકો આપવો છે.	☐
…ાસક્રમની સાધન સામ્રગી …પે છે.	☐	સારા વિદ્યાર્થીઓને ઈનામ આપે છે.	☐	કારકિર્દિ અંગે સલાહ આપવામાં મદદરૂપ થાય છે.	☐

આપના સ્થાનિક ઉદ્યોગપતિઓ વ્યવસાયલક્ષી શિક્ષણમાં કેવો રસ લે છે. ?

ઘણો વધારે ☐ વધારે ☐ થોડાક ☐ ઘણો ઓછો ☐

વ્યવસાયલક્ષીના ધોરણ-૧૨ના જાહેર પરિણામ પછી આપ નીચેની બાબતો અંગે શું કરો છો ?

	હા	ના
સારા માર્કસે પાસ થયેલ વિદ્યાર્થી માટે પ્રોત્સાહન આપવા ફકંશન ગોઠવો છો	☐	☐
સ્થાનિક ઉદ્યોગ અને ધંધાઓને વિદ્યાર્થીઓના નામ સરનામાં પરિણામ સાથે મોકલાવો છો	☐	☐
વિદ્યાર્થીનું જાહેર સન્માન ગોઠવો છો	☐	☐
રોજગાર કચેરીને બધાજ વિદ્યાર્થીઓના નામ સરનામાં પરિણામ સાથે મોકલો છો	☐	☐
એપ્રેન્ટીસશીપ ઓફિસે બધાંજ વિદ્યાર્થીઓના નામ, સરનામા સાથે પરિણામ મોકલો છો.	☐	☐

34 **આપશ્રી માનતા હોય તેવા વ્યવસાયલક્ષી શિક્ષણના સુધારા માટે સૌથી વધારે જરૂરી હોય તેવા નીચેના મુદ્દાઓ પૈકી ત્રણ મુદ્દાઓ સામે (✔) કરો.**

વ્ય. શિક્ષણનો ઉંચો મોભો		પ્રાયોગિક કાર્ય માટે વધારે સમય ફાળવવો	
અદ્યતન મકાન		કાર્ય કરવા માટે વધુ તકો આપવી	
અદ્યતન આનુંસંગિક સાધનો		અભ્યાસ ક્રમ દરમ્યાન વધારે સારુ માર્ગદર્શન આપવું	
શૈક્ષણિક સ્ટાફની ઉંચી લાયકાત અને અનુભવ		શિસ્તનું ચુસ્ત પાલન	
અભ્યાસક્રમના વર્ષ વધારવા		અભ્યાસને અંતે નોકરીની ગેરંટી	
ઉચ્ચ અભ્યાસમાં વધુ તકો		અભ્યાસને અંતે લોનની સગવડ	
માધ્યમિક કક્ષાએથી જ વ્ય. અભ્યાસક્રમ શરૂ કરવો		બીજી કોઈ રીત હોય તો જણાવો.	

35 **વ્યવસાયલક્ષી શિક્ષણની શરૂઆત કયારથી કરવી જોઈએ.**

પ્રાથમિક સ્તરેથી	
માધ્યમિક સ્તરેથી	
ઉચ્ચતર માધ્યમિક સ્તરેથી	

36 **સરકારની નીચેના મુદ્દાઓ અંગેની નીતિ માટે આપ સહમત છો ?**

	સહમત	**અસહમત**
ગ્રાન્ટની પોલીસી અંગે		
વ્યવસાયલક્ષી નિરીક્ષણ અંગે		
વ્યવસાયલક્ષીની ભવિષ્યની દ્રષ્ટિ અંગે.		
સરકારી કર્મચારીઓની કામગીરી અંગે		
સરકારી નીતિ-નિયમો અંગે જેમ કે		
કર્મચારીની ભરતીની નીતિ અંગે		
કર્મચારીને ડીસમીસ કરવાની નીતિ અંગે		

કર્મચારી પાસે કામ કરાવવાની નીતિ અંગે		
સ્કૂલ અંગે સરકારી વલણ અંગે		
સરકારની વિદ્યાર્થીઓના પ્રવેશ અંગે		
સરકારની આ શિક્ષણને વધુ પ્રચલિત કરવાના પ્રયત્નો અંગે		
આ શિક્ષણમાં વધારે ઔદ્યોગિક ગ્રુહોના સમાવેશ કરવા અંગે		
વ્યવસાયલક્ષી પાસ કર્યા પછી વિદ્યાર્થીઓની પૂરી પાડવાની સવલતો આપવા અંગે		
શાળા-ઉદ્યોગોને વધુ સલંગ્ન બનાવવા પ્રયત્ન અંગે		
આ શિક્ષણને પ્રાધ્યાન્ય આપવા અંગે.		

આ વ્યવસાયલક્ષી શિક્ષણ અંગે કોઈ સૂચન કે ભલામણ કરવા માંગતા હોવ તો નીચે મહેરબાની કરીને દર્શાવશો.

પ્રશ્નોત્તરી પૂર્ણ કરવા બદલ આપના મનન અને પુરુષાર્થ માટે આપનો આભારી છું.

APPENDIX 4b

Questionnaire for Teachers (in Gujarati)

Govind Desai
(M.Com. M.Ed., M.Phil.)
14, Hudson Close,
Leicester.
U.K.

આદરણીય શિક્ષક મિત્રશ્રી,

ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષિણના સંશોધનનો અભ્યાસ મેં ઇંગ્લેન્ડની લેઇસ્ટર યુનિવર્સિટીની પીએચ.ડી.ની પદવી મેળવવા માટે હાથ ધર્યો છે. આપ શાળાના કુશળ શિક્ષક છો. આ સાથે પ્રસ્તુત અભ્યાસના સંદર્ભમાં તૈયાર કરેલ પ્રશ્નાવલિ છે જે ભરવા માટે આપને વિનંતી કરું છુ.

પ્રશ્નાવલિમાં વિગતો ભરતી વખતે નીચેની સૂચનાઓ અવશ્ય ધ્યાનમાં રાખશો.

૧. પ્રશ્નાવલિએ કસોટી કે પરીક્ષા નથી. એમાં સાચા કે ખોટા ઉત્તરો નથી. સાચા ઉત્તરો એ જ છે જે તમારી લાગણીના પ્રતિભાવો છે. તમારા અભિપ્રાયો અને અનુભવો છે.

૨. પ્રશ્નાવલિ સંપૂર્ણ ગોપનીય છે. શાળામાં એની માહિતી કોઈને આપવાની નથી. પ્રશ્નાવલિમાંથી મળેલી માહિતી કોઠાઓમાં ગોઠવીને અર્થઘટન માટે ઉપયોગમાં લેવાની છે. એટલે નિરાંતે અને મુક્ત મનથી પ્રશ્નોના સાચા જવાબો આપવા વિનંતી.

૩. સાચા ઉત્તર સામે આપેલા બોક્ષમાં (✓) ની નિશાની કરો જ્યાં ઉત્તર લખવાનો હોય ત્યાં બોક્ષ (પેટી)નો ઉપયોગ ન કરશો પેટીની સાથે આપેલા આંકડા ધ્યાનમાં લેવાના નથી. એ પ્રશ્નાવલિના ઉત્તરોના ક્રમાંકન માટે છે.

આપના સહકારની અપેક્ષા છે.

આપનો

ગોવિંદ દેસાઈ

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા ☐ ના ☐

જો હા, તો આપનું સરનામું જણાવો :

જાતિ	સ્ત્રી	
	પુરુષ	
ઉંમર	30 થી ઓછી	
	30 થી 45 વચ્ચે	
	45 અને તેથી વધુ	
જ્ઞાતિ	સામાન્ય	
	અનુસૂચિત જનજાતિ	
	અનુસૂચિત જાતિ	
	સામાજિક અને શૈક્ષણિક રીતે પછાતજાતિ	
	મંડલ પંચ	
	લઘુમતી જાતિ/કોમ	

૪. (અ) આપની શૈક્ષણિક લાયકાત જણાવો (વ્યવસાયિક નહિ)

ડીગ્રી/ડીપ્લોમાં/સર્ટીફિકેટનુંનામ		સંસ્થા/યુનિ.	મેળવેલ ટકાવારી	વિષય
1	ડીપ્લોમા ઇન			
2	બી.કોમ./ બી.એ / બીએસ.સી			
3	એમ.કોમ./ એમ.એ / એમ.એસ.સી			
4	એમ.ફિલ., પી.એચ.ડી.			

(બ) આપની બી.એડ્. સહિતની વ્યવસાયીક લાયકાત જણાવો.

ડીગ્રી/ડીપ્લોમાં / સર્ટીફિકેટનું નામ	સંસ્થા / યુનિ.નું નામ	મેળવેલ ટકા/વર્ગ
બી.એડ્.		
એમ.એડ્.		

5. શાળામાં આપનો હોદ્દો જણાવો. ફુલ ટાઈમ તરીકે (.....) 25 પાર્ટ ટાઈમ તરીકે (.....)26 ટીક માર્ક કરો

વ્યવસાયિક શિક્ષક		મદદનીશ શિક્ષક	
ભાષાશિક્ષક		ઈન્સ્ટ્રકટર, લેબકોડીનર	

6. તમે જે વિષય શીખવો છો તે અંગે તમારી પાસે કોઈ ઔદ્યોગિક અનુભવ છે ?

હા ☐ ના ☐

જો 'હા ' તો અનુભવ અંગે જણાવો.

Post નું નામ	સમયગાળો	કાર્ય અંગેની જવાબદારી

7. આપની પાસે શિક્ષક તરીકેનો કેટલા વર્ષનો અનુભવ છે ?

5 વર્ષથી ઓછો	
5 થી 10 વર્ષની વચ્ચે	
10 થી 15 વર્ષની વચ્ચે	
15 વર્ષ અને વધારે	

આપને શિક્ષકનો વ્યવસાય પસંદ કરવામાં નીચેના પરિબળોએ કેવો ભાગ ભજવ્યા હતો.

	ઘણો મહત્વનો	કેટલોક મહત્વનો	થોડોક મહત્વનો
સારો પગાર			
સામાજીક મોભામાં વધારો			
કામ કરવાની સારી પરિસ્થિતિ			
સલામત અને કાયમી નોકરી			
મારા કુટુંબનો વ્યવસાય શિક્ષકનો છે.			
શિક્ષકની નોકરી મેળવવી સરળ છે.			
ફેરબદલી શકયતા નહિવત			
બીજુ કોઈ કારણ હોય તો જણાવો			

આપને ચાલુ નોકરીમાં પસંદ થવા માટે નીચેના કારણોએ કેવો મહત્વનો ભાગ ભજવ્યો હતો ?

	ઘણા મહત્વનો	કેટલાક મહત્વનો	નહિવત મહત્વ
મારી શૈક્ષણિક લાયકાત			
મારી વ્યવસાયિક લાયકાત			
મારો અગાઉનો શિક્ષકનો અનુભવ			
મારો અગાઉનો ઔદ્યોગિક અનુભવ			
દાન			
આચાર્ય સાથેનો મારો સંપર્ક			
વ્યક્તિગત સંપર્કથી			
અનામત જગ્યા માટેની લાયકાત			
બીજું કોઈ કારણ હોયતો મહેરબાની કરીને જણાવો. _____ _____ _____			

. કેટલા વ્યવસાયલક્ષી શિક્ષકોએ નોકરી વ્યક્તિગત દાનથી મેળવી છે ?

મોટાભાગનાં	કેટલાંક	થોડાંક	ભાગ્યેજ કોઈ	કોઈજ નહીં
☐	☐	☐	☐	☐

. વ્યવસાયલક્ષી શિક્ષકની લાયકાત તેની ફરજના પ્રમાણમાં કેવી છે ?

વ્ય.લક્ષી શિક્ષકો પાસે વધારે લાયકાત હોય છે	☐
શિક્ષકો પાસે પૂરતી લાયકાત હોય છે	☐
શિક્ષકો પાસે ઓછી લાયકાત હોય છે	☐

ઓછી લાયકાત હોય તો કઈ વધારાની લાયકાત જરૂરી છે. (ગમે તે બે ખાનામાં નિશાની કરો)

સારી વ્યવસાયિક તાલીમ	☐
રીફ્રેશમેન્ટ કોર્ષીસ	☐
ચાલુ સર્વિસે તાલીમ (ઇન સર્વિસ)	☐
શિક્ષણ કામગીરી વધારે પ્રાયોગિક તાલીમ	☐
વધારે ઔદ્યોગિક અને વ્યવસાયિક તાલીમ	☐

. આપ શાળામાં જે વિષય શિખવતા હોય તે જણાવો.

ધોરણ	વિષયના નામ		
11.	1.	2.	3.
12.	1.	2.	3.

૩. શિક્ષણ ખાતા એ આપના માટે નોકરી દરમ્યાન કોઈ તાલીમના વર્ગોનું આયોજન કરેલ છે.?

હા ☐

ના ☐

૩૧ તો કયા વર્ગો વધારે ઉપયોગી છે

ટૂંકા સમય માટેના ☐

લાંબા સમય માટેના ☐

વ્યવસાયીક તાલીમ અંગેના ☐

ઔદ્યોગિક તાલીમ અંગેના ☐

૪. આપના અભિપ્રાય મુજબ વ્યવસાયલક્ષી અભ્યાસક્રમનું ધોરણ વિદ્યાર્થીઓની ક્ષમતાના પ્રમાણમાં નીચેના મુદ્દાઓ માટે કેવું હોય છે ?

સૈદ્ધાંતિક અભ્યાસક્રમ

ઘણો અઘરો છે ☐

ઘણો સરળ છે. ☐

ધોરણ પ્રમાણે યોગ્ય છે. ☐

પ્રાયોગિક અભ્યાસક્રમ

ઘણો અઘરો છે. ☐

ઘણો સરળ છે. ☐

ધોરણ પ્રમાણે યોગ્ય છે. ☐

15. **વ્યવસાયલક્ષી શિક્ષણ સાથે સંકળાયેલા નીચેના મુદ્દાઓ વિશે આપ શું માનો છો ?**

સમયનું ફાળવણી

	વધારવી જોઈએ	ઘટાડવી જોઈએ	બરાબર છે.
વ્યવસાયલક્ષી વિષયો માટે			
ભાષાનાં વિષયો માટે			
માળખાકીય વિષયો માટે			
ઉદ્યોગ સાહસિકતા માટે			

પ્રાયોગિક કાર્ય માટેના સમયની ફાળવણી

	વધારવી જોઈએ	ઘટાડવી જોઈએ	બરાબર છે.
વ્યવસાયલક્ષી વિષયો માટે			
ભાષાના વિષયો માટે			
માળખાકીય વિષય માટે			
ઉદ્યોગ સાહસિકતા માટે			

સૈદ્ધાંતિક કાર્ય માટેના સમયની ફાળવણી

	વધારવી જોઈએ	ઘટાડવી જોઈએ	બરાબર છે.
વ્યવસાયલક્ષી વિષયો માટે			
ભાષાનાં વિષયો માટે			
માળખાકીય વિષય માટે			
ઉદ્યોગ સાહસિકતા માટે			

અભ્યાસક્રમની ગુણવત્તા

	સુધારવી જોઈએ	બરોબર છે.		સુધારવી જોઈએ.	બરોબર છે.
વ્યવસાયલક્ષી વિષયોની			માળખાકીય વિષયની		
ભાષાનાં વિષયની			ઉદ્યોગ સાહસિકતાની		

વિદ્યાર્થીની કારકિર્દી સાથેનો સંબંધ

	યોગ્ય સંબંધ છે	કેટલોક સંબંધ છે	નહિવત સંબંધ છે
વ્યવસાયલક્ષી વિષયોનો			
ભાષાનાં વિષયોનો			
માળખાકીય વિષયોનો			
ઉદ્યોગ સાહસિકતાનો			

16 આપના અભ્યાસક્રમ અંગે નીચેના મુદ્દાઓ આપને કેવા લાગે છે ?

	સંતોષકારક	અસંતોષકારક		સંતોષકારક	અસંતોષકારક
પ્રયોગશાળા અને વર્કશોપની સગવળતા			શિક્ષણ અંગે માર્ગદર્શન		
પુસ્તકાલયની સગવડતા			સાધનોની ગુણવત્તા		
શિખવવાના સાધનોની ઉપલબ્ધતા			સાધનોની જાળવણી અને સફાઈ		
વર્ગખંડની સગવડતા			શાળાની ભૌતિક સુવિધાઓ		

17 શાળામાં ઉપયોગમાં લેવાતાં સાધનો બહારના ધંધામાં કે વ્યવસાયના સાધનોની સરખામણીમાં કેવા છે ?

સરખા છે		સારી ગુણવત્તાવાળા છે		હલકી ગુણવત્તાવાળા છે	

18 વ્યવસાયલક્ષી શિક્ષણ સુધારવા માટેના નીચેના પરિબળોમાંથી આપ અંગત રીતે માનતા હોય તેવા <u>ત્રણ</u> ખાનાંમાં ટીકમાર્ક કરો

વ્યવસાયલક્ષી શિક્ષણનો ઉંચો મોભો		પ્રા.અભ્યાસક્રમ પાછળ વધારે સમય આપવો	
અદ્યતન મકાન		અભ્યાસ દરમિયાન કામ ઉપર તાલીમ માટે વધુ તકો આપવી	
આધુનિક સાધન		અભ્યાસ પહેલા વિદ્યાર્થીઓને સારું માર્ગદર્શન પૂરું પાડવું	
શૈક્ષણિક સ્ટાફની ઊંચી લાયકાત		શિસ્તપાલન પર ખાસ ભાર	
અભ્યાસક્રમનાં વર્ષ વધારવા		અભ્યાસને અંતે નોકરીની ગેરંટી	
ઉચ્ચ અભ્યાસમાં પ્રવેશ માટે વધુ તકો		સ્થાનિક ઉદ્યોગને સંલગ્ન અભ્યાસક્રમ	
વ્યવસાયલક્ષી શિક્ષણ માધ્યમિક સ્તરે આપવું		વ્ય.શિક્ષણને વધારે સામેલ કરવા ઔદ્યોગિક કરણ કરવું.	

9 નીચેના વિધાનો અંગે આપનો પ્રત્યુત્તર આપો.

	સંપૂર્ણ સહમત	સહમત	અસહમત	સંપૂર્ણ અસહમત
અભ્યાસક્રમના હેતુઓ તાલીમની જરૂરિયાત સાથે સંતોષકારક છે.				
કોર્ષ અને અભ્યાસક્રમ જરૂરી પ્રાયોગિક તાલીમ પૂરી પાડતા નથી.				
સૈધ્ધાંતિક અને પ્રાયોગિક વિભાગો પરસ્પર જોડાયેલ નથી.				
બે વર્ષનો અભ્યાસક્રમ વિદ્યાર્થીને રોજગાર માટે તૈયાર ન કરી શકે.				
સ્થાનિક જરૂરિયાતને લગતા અભ્યાસક્રમ ઉપલબ્ધ નથી.				
ચાલુ અને ભવિષ્યની ઔદ્યોગિક ક્ષમતા પરિપૂર્ણ બધી રીતે કરે છે.				
અભ્યાસક્રમ અને કોર્ષ નિયમિત રીતે પુનઃ મુલ્યાંકન અને પરિવર્તન થતા નથી.				
ભવિષ્યના વિદ્યાર્થીઓ અને તાલીમાર્થીઓને માર્ગદર્શન આપવા માટે સંતોષકારક યોજના નથી.				
તાલીમાર્થીને રોજગાર શોધવા માટેની યોજના સંતોષકારક છે.				
પરીક્ષા માટેની યોજના સ્પષ્ટ છે.				
કર્મચારીઓના અનુભવ, લાયકાત અને જવાબદારીના અનુસંધાનમાં બઢતીની યોજના સંતોષકારક છે.				
મકાન અને અન્ય સેવાઓ શાળામાં જળવાય છે.				
જરૂરી ચીજો તેના ઉપયોગના પ્રમાણમાં ઉપલબ્ધ છે.				
એકંદરે શાળામાં વહીવટ ખૂબજ અસરકારક રીતે કામ કરે છે.				
ઉદ્યોગો સંલગ્ન જાહેરાત અથવા તેના જેવી ઉપયોગી બાબતોમાં ભાગ લે છે.				
કર્મચારીઓ ઉદ્યોગો સાથે જોડાવવા નિયમિત વ્યવસ્થા કરવામાં આવે છે.				
શાળા ઔદ્યોગિક વાતાવરણ ઊભું કરે છે.				
વ્યવસાયલક્ષી શિક્ષણ-પધ્ધતિના વિકાસ માટેની રાષ્ટ્રીય યોજના છે.				
વ્યવસાયલક્ષી શિક્ષણની ગુણવત્તા કેન્દ્ર અથવા રાજ્ય દ્વારા સંકલન કરાય છે.				

આપણા મતે, વ્યવસાયલક્ષી શિક્ષણ કયા સ્ટેજે શરૂ કરવું જોઈએ ?

પ્રાથમિક વિભાગથી	
માધ્યમિક વિભાગથી	
ઉચ્ચતર માધ્યમિક વિભાગથી	

આ વ્યવસાયલક્ષી શિક્ષણ અંગે કોઈ સૂચન કે ભલામણ કરવા માંગતા હોવ તો નીચે મહેરબાની કરીને દર્શાવશો.

પ્રશ્નાવલી ભરવા આપે કરેલ મનન અને પુરુષાર્થ માટે હું આપનો આભારી છું

APPENDIX 4c

Questionnaire for Students (in Gujarati)

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14, Hudson Close,
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વ્હાલા વિદ્યાર્થી મિત્ર,

ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષિણના સંશોધનનો અભ્યાસ મેં ઇંગ્લેન્ડની લેઈસ્ટર યુનિવર્સિટીની પીએચ.ડી.ની પદવી મેળવવા માટે હાથ ધર્યો છે. આપ શાળાના આદર્શ વિદ્યાર્થીઓ છો. આ સાથે પ્રસ્તુત અભ્યાસના સંદર્ભમાં તૈયાર કરેલ પ્રશ્નાવલિ જે ભરવા માટે આપને વિનંતી કરું છું.

પ્રશ્નાવલિમાં વિગતો ભરતી વખતે નીચેની સૂચનાઓ અવશ્ય ધ્યાનમાં રાખશો.

૧. પ્રશ્નાવલિએ કસોટી કે પરીક્ષા નથી. એમાં સાચા કે ખોટા ઉત્તરો નથી. સાચા ઉત્તરો એ જ છે જે તમારી લાગણીના પ્રતિભાવો છે. તમારા અભિપ્રાયો અને અનુભવો છે.

૨. પ્રશ્નાવલિ સંપૂર્ણ ગોપનીય છે. શાળામાં એની માહિતી કોઈને આપવાની નથી. પ્રશ્નાવલિમાંથી મળેલી માહિતી કોઠાઓમાં ગોઠવીને અર્થઘટન માટે ઉપયોગમાં લેવાની છે. એટલે નિરાંતે અને મુક્ત મનથી પ્રશ્નોના સાચા જવાબો આપવા વિનંતી.

૩. સાચા ઉત્તર સામે આપેલા બોક્ષમાં (✓) ની નિશાની કરો જ્યાં ઉત્તર લખવાનો હોય ત્યાં બોક્ષ (પેટી)નો ઉપયોગ ન કરશો પેટીની સાથે આપેલા આંકડા ધ્યાનમાં લેવાના નથી. એ પ્રશ્નાવલિના ઉત્તરોના ક્રમાંકન માટે છે.

આપના સહકારની અપેક્ષા છે.

આપનો

ગોવિંદ દેસાઈ

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા ☐ ના ☐

જો હા, તો આપનું સરનામું જણાવો :

કોડ

1. જાતિ

છોકરી

છોકરો

2. કયા ધોરણમાં અભ્યાસ કરો છો ?

ધોરણ - 11

ધોરણ - 12

3. આપની ઉંમર કેટલી છે ?

17 કે તેથી ઓછી

અઢાર

19 કે તેથી વધુ

4. જ્ઞાતિ

સામાન્ય

અનુસૂચિત જન જાતિ

અનુસૂચિત જાતિ

સામાજિક અને શૈક્ષણિક પછાતજાતિ

મંડલ પંચ

લઘુમતી જાતિ

આપની શૈક્ષણિક લાયકાત જણાવો.

	એસ.એસ.સી.	એચ.એસ.સી	ડીપ્લોમા	ડીગ્રી કોર્ષ
પાસ કર્યાનું વર્ષ				
ટકાવારી				
કેટલા પ્રયત્ને				

આપના કુટુંબના સભ્યોએ મેળવેલી વધુમાં વધુ શૈક્ષણિક લાયકાત જણાવો.

	પ્રાથમિક	માધ્યમિક	ઉચ્ચ માધ્યમિક	સ્નાતક	અનુસ્નાતક
પિતા					
માતા					
ભાઈ					
બહેન					

આપના કુટુંબનો મુખ્ય વ્યવસાય કયો છે ?

સરકારી નોકરી	
ખાનગી નોકરી	
પોતાનો ધંધો	
ભાગીદારી	
કામદાર	
ખેડૂત	
ખેતમજુર	
બેરોજગાર	
બીજો	

આપના કુટુંબની સરેરાશ માસિક આવક કેટલી છે ?

1000 રૂા. થી ઓછી	
1000 રૂા. થી 1500 રૂા. વચ્ચે	
1500 રૂા. થી 2500 રૂા. વચ્ચે	
2500 રૂા. થી 5000 રૂા. વચ્ચે	
5000 રૂા. થી વધારે	

વ્યવસાયલક્ષી શિક્ષણથી આપ કયારે વાકેફ થયા ?

પ્રાથમિક શાળાએથી	
માધ્યમિક શાળાએથી	
માધ્યમિક (S. S. C.) શિક્ષણ પાસ કર્યા પછી	
વ્યવસાયલક્ષીમાં દાખલ થતાં પહેલાં	

વ્યવસાયલક્ષી શિક્ષણ અંગેની માહિતી આપે જ્યાંથી મેળવી હોય તેવાં નીચેનાં બે મુખ્ય પ્રાપ્તિસ્થાનો સામે (✔) કરો.

મારી અગાઉની શાળામાંથી		મારી ચાલુ શાળા મારફત	
કુટુંબ અને મિત્રો દ્વારા		કારકીર્દિ સેવા દ્વારા	
શાળાના શિક્ષકો દ્વારા		વર્તમાનપત્રની જાહેરાત દ્વારા	
સરકારી સંસ્થાઓ દ્વારા		સામાજિક કાર્યકરો દ્વારા	
પત્રિકાઓ મેળવીને		જ્ઞાતિના સામાજિક આગેવાન દ્વારા	
ધંધાકિય વ્યક્તિ દ્વારા		બીજી કોઈ રીતે હોય તો જણાવો....	

11. આપ જે વ્યવસાયલક્ષી અભ્યાસક્રમમાં ભણો છો તે માટે નીચે આપેલાં કારણો આપને કેવાં મહત્વનાં છે ?

	ખાસ મહત્વ	કેટલુંક મહત્વ	થોડુંક મહત્વ	બિલકુલ નહીં
હું જે ઇચ્છતો હતો તે અભ્યાસક્રમની પ્રાપ્તી ન થતા				
હું મારો પોતાનો ધંધો શરૂ કરવા માંગુ છું				
હું નવી પદ્ધતિઓ શીખવા માગું છું				
હું કારકિર્દી ઉજ્જવળ બનાવવા માગું છું				
અભ્યાસક્રમ પૂરો કરવો સરળ છે.				
આ અભ્યાસક્રમમાં ખાસ રસ છે.				
અભ્યાસક્રમથી રાષ્ટ્રીય માન્યતા મળે છે				
નોકરી મેળવવા માટે સારી તક આપે છે.				
અભ્યાસક્રમ સ્થાનિક વિસ્તારમાં લોકપ્રિય છે.				
મારી રહેઠાણની નજીકમાંજ અભ્યાસક્રમ ચાલે છે				
અભ્યાસક્રમમાં આધુનિક ટેકનોલોજીનો ઉપયોગ થાય છે.				
એક નવોજ અભ્યાસક્રમ છે.				
અભ્યાસક્રમ પ્રાદેશિક પ્રખ્યાતી પામેલ છે.				
ઉચ્ચ અભ્યાસ માટે અનુકૂળ છે.				
અભ્યાસક્રમ અંગે મારા મિત્રો/કુટુંબો મને ભલામણ કરેલ છે.				
બેરોજગારી નિવારવા માટે એક વિકલ્પ છે.				
અપંગ-બેરા વિદ્યાર્થી માટે સારી સુવિધા છે.				
અભ્યાસક્રમ મારા કુટુંબના વ્યવસાય સાથે સંબંધિત છે.				
બીજુ કોઈ કારણ હોય તો જણાવો.....				

12. આ અભ્યાસક્રમ શરૂ કરતાં પહેલા, નીચેના પ્રાપ્તિસ્થાનોએથી આપને અભ્યાસક્રમ અંગે કેવુ માર્ગદર્શન મળ્યું ?

	સારુ	સંતોષકારક	નબળું
તમારી અગાઉની શાળામાંથી			
માર્ગદર્શન કેન્દ્રથી			
કુટુંબ અને મિત્રો પાસેથી			
સ્થાનિક વર્તમાનપત્ર દ્વારા			
શાળાના શિક્ષકો દ્વારા			
સામાજિક અને જ્ઞાતિના અગ્રણી દ્વારા			
સરકારી સંસ્થાઓ દ્વારા			

13. નીચેના પ્રશ્નોના જવાબ આપના વ્યવસાયલક્ષીના અભ્યાસક્રમના અનુંસંધાનમાં આપો.

સમયની ફાળવણી	વધારવી જોઈએ	ઘટાડવી જોઈએ	જેમ છે તે બરાબર છે
વ્યવસાયલક્ષી વિષયો માટે			
ભાષાનો વિષય માટે			
માળખાકીય વિષય માટે			
ઉદ્યોગ સાહસિકતા માટે			

પ્રાયોગિક કાર્ય માટે સમયની ફાળવણી	વધારવી જોઈએ	ઘટાડવી જોઈએ	જેમ છે તે બરાબર છે
વ્યવસાયલક્ષી વિષય (મુખ્ય વિષય)માટે			
વ્યવસાયલક્ષી વિષય-૨ માટે			
વ્યવસાયલક્ષી વિષય-૩ માટે			
ઉદ્યોગ સાહસિકતા માટે			

શૈક્ષણિક કાર્ય માટેના સમયની ફાળવણી (થીયરી)

	વધારવી જોઈએ	ઘટાડવી જોઈએ	જેમ છે તેમ બરાબર છે.
વ્યવસાયલક્ષી વિષયો માટે			
ભાષાના વિષય માટે			
માળખાકિય વિષય માટે			
ઉદ્યોગ સાહસિકતા માટે			

વ્યવસાયલક્ષી અભ્યાસક્રમની ગુણવત્તા

	સુધારવી જોઈએ	સંતોષકારક છે.
વ્યવસાયલક્ષી વિષયોની		
ભાષાનાં વિષયોની		
માળખાકિય વિષયોની		
ઉદ્યોગ સાહસિકતાની		

નીચેના વિષયો પર કેટલો ભાર આપવો જોઈએ

	ખૂબ જ ભાર આપવો જોઈએ	બરોબર છે	ઘણો જ ઓછો ભાર આપવો
વ્યવસાયલક્ષી વિષયો ઉપર			
ભાષાનો વિષય ઉપર			
માળખાકીય વિષય ઉપર			
ઉદ્યોગ સાહસિકતા ઉપર			

નીચેના વિષયો આપની કારકીર્દિ સાથે કેવા સંબંધિત છે ?

	યોગ્ય સંબંધિત છે	ઠીક સંબધ છે	થોડોક સંબંધ છે.
વ્યવસાયલક્ષી વિષય			
ભાષાનો વિષય			
માળખાકીય વિષય			
ઉદ્યોગ સાહસિકતા			

14 આપના વ્યવસાયલક્ષી અભ્યાસક્રમનાં નીચેના પરિબળો અંગે આપનું મંતવ્ય કેવું છે ?

	સંતોષકારક	અસંતોષકારક
પ્રયોગશાળા અને વર્કશોપનાં સાધનો અંગે		
આપવામાં આવતી તાલીમનું વાતાવરણ અંગે		
શાળાનું સામાન્ય વાતાવરણ અંગે		
પુસ્તક અંગે		
શિક્ષકોની સંખ્યા અંગે		
શિક્ષકોની ગુણવત્તા અંગે		

	સંતોષકારક	અસંતોષકારક
પુસ્તકાલયની સગવડતા અંગે		
મકાનની સગવડ અંગે		
શાળાના સમય અંગે		
પ્રાયોગિક કાર્ય અંગે		
ઉદ્યોગની મુલાકાત અંગે		
ઉદ્યોગનાં અગ્રણીઓનું પ્રવચન અંગે		
સૈદ્ધાંતિક વર્ગ ખંડ અંગે		
પ્રયોગશાળા કે વર્કશોપખંડ અંગે		
"રો મટેરાંયલ્સ" ની પ્રાપ્તી અંગે કારકિર્દી અંગે માહિતી		

5. નીચેના વર્ગોમાં સરેરાશ સંખ્યા કેટલી હોય છે ?

'કલાસ રૂમ' માં	
'વર્કશોપમ' માં (પ્રાયોગિક ખંડ)	

6. આપની અપેક્ષાઓના અનુસંધાનમાં વ્યવસાયલક્ષી અભ્યાસક્રમ કેવો છે ?

અભ્યાસક્રમ જરૂરિયાતની અપેક્ષા સાથે સંતોપકારક છે.	
અભ્યાસક્રમ અંગે મને અસંતોષ છે.	

7. તમને અભ્યાસક્રમ અંગે અસંતોષ હોય તો તેના મુખ્ય કારણો. મહેરબાની કરીને જણાવો.

1).....

2).....

3).....

આપની વ્યવસાયલક્ષી અભ્યાસ ક્રમ અંગે આપનું શું માનવું છે.

સૈદ્ધાંતિક અભ્યાસક્રમ (થીયરી)		પ્રાયોગિક અભ્યાસક્રમ	
ઘણો જ અઘરો છે.		ઘણો જ અઘરો છે.	
ઘણો જ સરળ છે.		ઘણો જ સરળ છે.	
બરાબર છે.		બરોબર છે.	

આપ માનતા હોય તેવા વ્યવસાયલક્ષી અભ્યાસક્રમની ગુણવત્તામાં વધારો કરનારાના નીચેના મુદ્દાઓ પૈકી કોઈ પણ <u>ત્રણ સામે</u> ટીક માર્ક કરો.

વ્ય. શિક્ષણનો ઉચો મોભો		પ્રાયોગિક કાર્ય માટે વધારે સમય ફાળવવો	
અદ્યતન મકાન		કાર્ય કરવા માટે વધુ તકો આપવી	
અદ્યતન આનુંસંગિક સાધનો		અભ્યાસ ક્રમ દરમ્યાન વધારે સારુ માર્ગદર્શન આપવું	
શૈક્ષણિક સ્ટાફની ઉચી લાયકાત અને અનુભવ		શિસ્તનું ચુસ્ત પાલન	
અભ્યાસક્રમના વર્ષ વધારવા		અભ્યાસને અંતે નોકરીની ગેરંટી	
ઉચ્ચ અભ્યાસમાં વધુ તકો		અભ્યાસને અંતે લોનની સગવડ	
માધ્યમિક કક્ષાએથી જ વ્ય. અભ્યાસક્રમ શરૂ કરવો		બીજી કોઈ રીત હોય તો જણાવો.	

વ્યવસાયલક્ષી અભ્યાસક્રમને અંતે નીચેની શકયતાઓ અંગે આપશું માનો છો

	સારી	મધ્યમ	નહિવત
કુટુંબનો વ્યવસાય/ધંધો માં પ્રવેશની શકયતા			
પૂરા સમયની નોકરીની શકયતા			
એપ્રેન્ટીસશીપ શકયતા			
ઉચ્ચ અભ્યાસ અંગેની શકયતા			
સ્વરોજગાર અંગે			
સરકારી લોન અંગે			
સામાજીક મોભામાં વધારાની શકયતા અંગે			

20. જો આપને આપના વ્યવસાયલક્ષી અભ્યાસક્રમના અનુંસધાનમાં સ્વરોજગારી / એપ્રેન્ટિસ ઉપલબ્ધ ન થાય તો અભ્યસાક્રમને સંબંધિત ન હોય તેવી સ્વરોજગારમાં કે એપ્રેન્ટિસમાં જોડાશો.

હા ☐

ના ☐

21. શું આપ માનો છો કે આપે જે વ્યવસાયલક્ષી અભ્યાસક્રમની પંસદગી કરી છે ને સાચી અને સારી છે.

હા ☐

ના ☐

22. આપ માનો છે કે આપ બીજા બધા વિદ્યાર્થીઓના પ્રતિનિધિ તરીકે અભિપ્રાય આપ્યા છે.

હા ☐

ના ☐

23. વ્યવસાયલક્ષી શિક્ષણ અંગે મને આપનાં અમૂલ્ય અને ઉપયોગી સૂચનો અને ભલામણોની ખૂબજ જરૂરિયાત છે. તો મહેરબાની કરીને નીચે જણાવો.

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પ્રશ્નોત્તરી ભરવા માટેના આપના અમૂલ્ય મનન અને સમય માટે આપનો હાર્દિક આભાર

APPENDIX 4d

Questionnaire for Ex-students (in Gujarati)

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14, Hudson Close,
Leicester,
U.K.

વ્હાલા ભૂતપૂર્વ વિદ્યાર્થી મિત્ર,

ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષિણના સંશોધનનો અભ્યાસ મેં ઇંગ્લેન્ડની લેઈસ્ટર યુનિવર્સિટીની પીએચ.ડી.ની પદવી મેળવવા માટે હાથ ધર્યો છે. આપ શાળાના ભૂતપૂર્વ વિદ્યાર્થીઓ છો. આ સાથે પ્રસ્તુત અભ્યાસના સંદર્ભમાં તૈયાર કરેલ પ્રશ્નાવલિ આપને મોકલું છું. જે ભરીને સાથેના કવરમાં મને પરત મોકલશો.

પ્રશ્નાવલિમાં વિગતો ભરતી વખતે નીચેની સૂચનાઓ અવશ્ય ધ્યાનમાં રાખશો.

૧. પ્રશ્નાવલિએ કસોટી કે પરીક્ષા નથી. એમાં સાચા કે ખોટા ઉત્તરો નથી. સાચા ઉત્તરો એ જ છે જે તમારી લાગણીના પ્રતિભાવો છે. તમારા અભિપ્રાયો અને અનુભવો છે.

૨. પ્રશ્નાવલિ સંપૂર્ણ ગોપનીય છે. શાળામાં એની માહિતી કોઈને આપવાની નથી. પ્રશ્નાવલિમાંથી મળેલી માહિતી કોઠાઓમાં ગોઠવીને અર્થઘટન માટે ઉપયોગમાં લેવાની છે. એટલે નિરાંતે અને મુક્ત મનથી પ્રશ્નોના સાચા જવાબો આપવા વિનંતી.

૩. સાચા ઉત્તર સામે આપેલા બોક્ષમાં (✓) ની નિશાની કરો જ્યાં ઉત્તર લખવાનો હોય ત્યાં બોક્ષ (પેટી)નો ઉપયોગ ન કરશો પેટીની સાથે આપેલા આંકડા ધ્યાનમાં લેવાના નથી. એ પ્રશ્નાવલિના ઉત્તરોના ક્રમાંકન માટે છે.

આપના સહકારની અપેક્ષા છે.

આપનો

ગોવિંદ દેસાઈ

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા ☐ ના ☐

જો હા, તો આપનું સરનામું જણાવો :

કોડ

1. જાતિ

સ્ત્રી	
પુરુષ	

2. ઉંમર

19 કે તેથી ઓછી	
વીસ	
એકવીસ કે તેથી વધુ	

3. જ્ઞાતિ

જનરલ	
અનુસૂચિત જન જાતિ	
અનુસૂચિત જાતિ	
સામાજિક અને શૈક્ષણિક પછાત જાતિ	
મંડલ પંચ	
લઘુમતી જાતિ	

4. આપે જે વ્યવસાયલક્ષી અભ્યાસ પૂર્ણ કર્યો હોય તેની વિગત જણાવો.

<u>જૂથનું નામ</u>

કોમર્સ	
હોમ સાયંસ	
એગ્રીકલ્ચર	
ટેકનોલોજી	

અભ્યાસક્રમનું નામ ..... પાસ કર્યાનું વર્ષ ..... ટકાવારી ..... કેટલા પ્રયત્ને .....

આપે વ્યવસાયલક્ષી સિવાયની બીજી કોઈ લાયકાત મેળવી હોય તો જણાવો

	એસ.એસ.સી.	એચ.એસ.સી.	ડીપ્લોમા સર્ટી	ડીગ્રી કોર્સ
પાસ કર્યાનું વર્ષ				
મેળવેલ ટકા				

આપના કુટુંબના સભ્યોએ પ્રાપ્ત કરેલી મહત્તમ શૈક્ષણિક લાયકાત જણાવો.

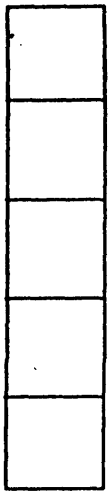
	અભણ	પ્રાથમિક	માધ્યમિક	સ્નાતક	અનુસ્નાતક
પિતા					
માતા					
ભાઈ					
બહેન					

આપના કુટુંબનો મુખ્ય વ્યવસાય કયો છે ?

સરકારી નોકરી	
ખાનગી નોકરી	
પોતાનો ધંધો	
ભાગીદારી પેઢી	
કારીગર	
ખેડૂત	
ખેત મજૂર	
બેરોજગાર	
બીજો કોઈ વ્યવસાય હોય તે જણાવો	

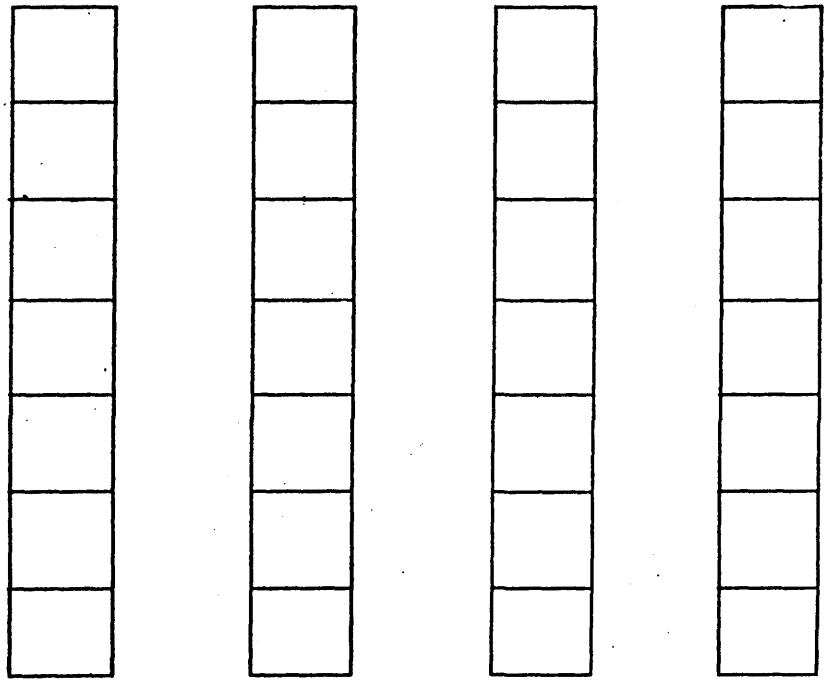
૮.આપના કુટુંબની સરેરાશ માસિક આવક કેટલી છે ?

- 1000 રૂ. થી ઓછી
- 1000 રૂ. થી 1500 રૂ. ની વચ્ચે
- 1500 રૂ. થી 2500 રૂ. ની વચ્ચે
- 2500 રૂ. થી 5000 રૂ. ની વચ્ચે
- 5000 રૂ. થી વધુ



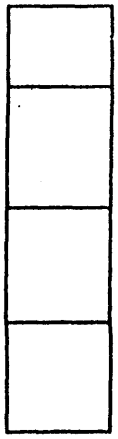
૯. આપની હાલની નોકરી મેળવવા અગે નીચેના પરિબળોએ કેટલો મહત્વનો ભાગ ભજવ્યો છે ?

	ખૂબ જ મહત્વનો	કેટલોક મહત્વનો	થોડાક મહત્વને	બિલકુલનહી.
સ્વપ્રયત્ન				
શાળાના પ્રયત્નોથી મોકલેલ માહિતી (પત્ર) દ્વારા				
સગાસંબંધી અને મિત્રોની મદદથી				
અભ્યાસ દરમ્યાન કરેલ સંપર્ક દ્વારા				
વર્તમાનપત્ર, રેડિયો દ્વારા				
રોજગાર વિનિમય કચેરી દ્વારા				
એપ્રેન્ટિસશીપ બોર્ડ દ્વારા				



10. આપે હાલની નોકરી કયારે મેળવી હતી ?

- અભ્યાસ પૂરો કર્યા તે પહેલાં
- અભ્યાસ પૂરો કર્યા પછીના ૬ માસમાં
- અભ્યાસ પૂરો કર્યાના ૬ થી ૧૨ માસમાં
- અભ્યાસ પૂરો કર્યાના ૧૨ માસ પછી



1. આપે હાલની નોકરી કેવી રીતે મેળવી ?

ખૂબજ મુશ્કેલીથી	
થોડીક મુશ્કેલીથી	
ખૂબજ ઓછી મુશ્કેલીથી	
સરળતાથી	

2. શું આપની હાલની નોકરી આપે પૂર્ણ કરેલ વ્યવસાયલક્ષી કોર્ષને સંબંધિત છે ?

હા	
ના	

જો ના, હોય તો

મેં પ્રયત્ન કરેલ, પરંતુ સંબંધિત નોકરી મળી નહી	
હું ઈચ્છતો ન હતો કે સંભવિત નોકરી મળે	
મારી પાસે નોકરી છતાં હું સંબંધિત નોકરી માટે રાહ જોઉ છું	
મારા રહેઠાણની નજીક મને સંબંધિત નોકરી મળી નહીં	

3. આપે પૂર્ણ કરેલ વ્યવસાયલક્ષી અભ્યાસક્રમનાં નીચેના પરિબળો નોકરી અસરકારક રીતે કરવા કેટલા મહત્વનાં છે ?

	ખાસ મહત્વ	કેટલુંક મહત્વ	થોડુંક મહત્વ	બિલકુલ નહી
વ્યવસાયલક્ષી વિષયો અને ઉદ્યોગસાહસિકતાનું સૈધ્ધાંતિકજ્ઞાન				
વ્યવસાયલક્ષી વિષયો અને ઉદ્યોગસાહસિકતાનું પ્રાયોગિકજ્ઞાન				
કાર્યનો અનુભવ				

14. વ્યવસાયલક્ષી અભ્યાસક્રમના નીચેના વિષયોમાંથી સૌથી વધારે ઉપયોગી થતો હોય તેવા <u>કોઈ એક વિષય</u> સામે ટીક માર્ક કરો.

વ્યવસાયલક્ષી વિષયો	
ભાષાનો વિષય	
માળખાકિય વિષય	
ઉદ્યોગ સાહસિકતાનો વિષય	

15. આપની સાથે કામ કરતા બીજા કર્મચારીઓની સરખામણીમાં આપને નીચેની સગવડો કેવી મળે છે ?

	ઘણી સારી	સરખીજ	ખરાબ
કામ કરવાની સગવડ			
બીજી સગવડ જેવી કે ખોરાક, મુસાફરી ખર્ચ, કપડા વગેરે.			
માન			
તાલિમ			
લાભ જેવા કે રજાઓ, બોનસ વગેરે			

16. નીચે આપેલા કૌશલ્યોમાંથી આપને ચાલુ નોકરી કરવામાં ખૂબ જ અસરકારક રીતે ઉપયોગી હોય તેવા <u>ફક્ત ત્રણ</u> કૌશલ્ય સામે ટીક (✔) કરો.

બીજાઓની સાથે સારી રીતે કામકરવાની કુશળતા		વ્યવહારિક કુશળતા	
વાત ચીત કરવાની કુશળતા		કાર્યની શરૂ કરવાની કુશળતા	
ગાણિતિક કુશળતા		બીજાનાંસૂચનોનોઅમલકરવાનીકુશળતા	
		સમસ્યા ઉકેલ કુશળતા	

17. આ આપની પહેલી નોકરી છે ?

હા ☐

ના ☐

18. આપ મહિને કેટલું કમાવો છો ?

500 રૂ. થી ઓછુ ☐

500 રૂ. થી 750 રૂ. વચ્ચે ☐

750 રૂ. થી 1000 રૂ. વચ્ચે ☐

1000 રૂ. થી વધારે ☐

19. આપ નોકરી (તાલીમ) કરવામાં આપને કેટલો ખર્ચ થાય છે ?

વેતન કરતાં વધારે ☐

વેતન જેટલું જ ☐

વેતનના 75 % કરતાં વધારે ☐

વેતનના 50 % કરતાં વધારે ☐

વેતનના 25 % કરતાં વધારે ☐

વેતનના 25 % કરતાં ઓછું ☐

20. જયારે આપ ધોરણ -12 પાસ કર્યુ ત્યારે કેટલી કમાવાની આશા રાખેલી ?

હાલ કરતાં વધારે ☐

હાલ કરતાં ઓછી ☐

હાલ મેળવો છે તેટલી ☐

21. તમારી હાલની નોકરીમાં તમે જે સાધનો વાપરો તે તમે શાળાના અભ્યાસ દરમ્યાન ઉપયોગ કર્યો હતો ?

હા ☐

ના ☐

22. શાળાના અભ્યાસ દરમિયાન આપે જે શીખ્યુ તે આપને અસરકારક અને સફળતાપૂર્વક નોકરી કરવામાં ઉપયોગી છે ?

હા ☐

ના ☐

23. મહેરબાની કરીને નીચેના મુદ્દાઓમાંથી **ત્રણ એવા મુદ્દાઓ** સામે ટીકમાર્ક કરો જેને આપ વ્યવસાયલક્ષી શિક્ષણનો અસરકારક અને સફળ બનાવામાં સૌથી વધારે ઉપયોગી હોય તેવું આપ માનતા હોવ.

વ્ય. શિક્ષણનો ઉચો મોભો		પ્રાયોગિક કાર્ય માટે વધારે સમય ફાળવવો	
અદ્યતન મકાન		કાર્ય કરવા માટે વધુ તકો આપવી	
અદ્યતન આનુંસંગિક સાધનો		અભ્યાસ ક્રમ દરમ્યાન વધારે સારુ માર્ગદર્શન આપવું	
શૈક્ષણિક સ્ટાફની ઉચી લાયકાત અને અનુભવ		શિસ્તનું ચુસ્ત પાલન	
અભ્યાસક્રમના વર્ષ વધારવા		અભ્યાસને અંતે નોકરીની ગેરંટી	
ઉચ્ચ અભ્યાસમાં વધુ તકો		અભ્યાસને અંતે લોનની સગવડ	
માધ્યમિક કક્ષાએથી જ વ્ય. અભ્યાસક્રમ શરૂ કરવો		બીજી કોઈ રીત હોય તો જણાવો.	

24. **આપ જો ધોરણ-૧૨ (વ્યવસાયલક્ષી) વિશે ભૂતકાળમાં દષ્ટિપાત કરો તો નીચેની બાબત અંગે શું વિચારશો ?**

હું વિચારું છું કે વ્યવસાયલક્ષી શિક્ષણમાં અભ્યાસ ન કર્યો હોત તો સારું.	
વ્યવસાયલક્ષી અભ્યાસ કર્યા કરતાં કામ કે નોકરી શરૂ કરી હોત તો સારું	
હું વિચારુ છું કે બીજો વ્યવસાયલક્ષી અભ્યાસ કર્યો હોત તો સારું	
હું ખુશી અનુભવું છું કે મેં વ્યવસાયલક્ષી શિક્ષણ યોગ્ય જ પસંદ કર્યું હતું.	

25. **જો આપનો કોઇ મિત્ર કે સંબંધી વ્યવસાયલક્ષી અભ્યાસ કરવા અંગે પૂછે તો આપ ભલામણ કરશો ?**

હા	
ના	

એપ્રેન્ટીસશીપ પૂરી કર્યા પછી આપ શું કરવાનું ઈચ્છો છો ?

બીજી નોકરી શોધવી	
સ્વરોજગાર શરૂ કરવો	
કુંટુંબનો વ્યવસાય અપનાવવો	
ઉચ્ચ અભ્યાસમાં પ્રવેશ મેળવવો	
હજી નક્કી નથી કર્યુ.	

આ વ્યવસાયલક્ષી શિક્ષણ અંગે કોઈ સૂચન કે ભલામણ કરવા માંગતા હોવ તો નીચે મહેરબાની કરીને દર્શાવશો.

આ પ્રશ્નોત્તરી પૂરી કરવામાં આપશ્રી કરેલી મદદ બદલ આપનો આભારી છું.

APPENDIX 4e

Questionnaire for Employers (in Gujarati)

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આદરણીય શ્રી .....

ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષિણના સંશોધનનો અભ્યાસ મેં ઇંગ્લેન્ડની લેઇસ્ટર યુનિવર્સિટીની પીએચ.ડી.ની પદવી મેળવવા માટે હાથ ધર્યો છે. આ સાથે પ્રસ્તુત અભ્યાસના સંદર્ભમાં તૈયાર કરેલ પ્રશ્નાવલિ આપને મોકલું છું. જે ભરીને સાથેના કવરમાં મને પરત મોકલશો.

પ્રશ્નાવલિમાં વિગતો ભરતી વખતે નીચેની સૂચનાઓ અવશ્ય ધ્યાનમાં રાખશો.

૧. પ્રશ્નાવલિએ કસોટી કે પરીક્ષા નથી. એમાં સાચા કે ખોટા ઉત્તરો નથી. સાચા ઉત્તરો એ જ છે જે તમારી લાગણીના પ્રતિભાવો છે. તમારા અભિપ્રાયો અને અનુભવો છે.

૨. પ્રશ્નાવલિ સંપૂર્ણ ગોપનીય છે. શાળામાં એની માહિતી કોઈને આપવાની નથી. પ્રશ્નાવલિમાંથી મળેલી માહિતી કોઠાઓમાં ગોઠવીને અર્થઘટન માટે ઉપયોગમાં લેવાની છે. એટલે નિરાંતે અને મુક્ત મનથી પ્રશ્નોના સાચા જવાબો આપવા વિનંતી.

૩. સાચા ઉત્તર સામે આપેલા બોક્ષમાં (✓) ની નિશાની કરો જ્યાં ઉત્તર લખવાનો હોય ત્યાં બોક્ષ (પેટી)નો ઉપયોગ ન કરશો પેટીની સાથે આપેલા આંકડા ધ્યાનમાં લેવાના નથી. એ પ્રશ્નાવલિના ઉત્તરોના ક્રમાંકન માટે છે.

આપના સહકારની અપેક્ષા છે.

આપનો

ગોવિંદ દેસાઈ

આપ આ સંશોધનનું પરિણામ જાણવા માગો છો ? હા ☐ ના ☐

જો હા, તો આપનું સરનામું જણાવો :

કેસ નંબર

1. જાતી

સ્ત્રી	
પુરુષ	

2. ધંધાનો પ્રકાર

એકાકી વેપારી	
ભાગીદારી પેઢી	
લિમિટેડ (મર્યાદિત) કંપની	
જાહેર કંપની	
સરકારી સાહસ	
બીજો હોય તો મહેરબાની કરીને જણાવો	

3. વિસ્તાર

ગ્રામ્ય	
શહેરી	

4. કર્મચારીઓની કુલ સંખ્યા (આશરે) _____

5. વ્યવસાયલક્ષી એપ્રેન્ટિસની સંખ્યા (આશરે) _____

6. આપ જ્યારે નવા કર્મચારી અને વ્યવસાયલક્ષી એપ્રેન્ટિસની નિમણૂંક કરો છો ત્યારે નીચેનામાંથી ક્યા મુદ્દા મહત્ત્વના હોય છે. (✓) નિશાની કરો (બંને ખાનામાં)

	નવા કર્મચારી માટે	વ્ય. એપ્રેન્ટિસ માટે
વ્યક્તિગત ઓળખાણ		
લેખિત પરીક્ષાનું પરિણામ		
શૈક્ષણિક લાયકાત		
આનુંસગિત અનુભવ		
ઉમર		
ઉમેદવારની જાતિ		
અગાઉ કામે રાખનારની ભલામણથી/સંદર્ભથી		
બીજા કારીગરની ભલામણથી/સંદર્ભથી		
શાળાના સંદર્ભથી		
રોજગાર વિનિમય કચેરીની ભલામણથી		
સરકારી એપ્રેન્ટિસશીપ બોર્ડની ભલામણથી		
બીજી કોઈ રીતે હોય તો તે જણાવો.		

7. નીચેના કર્મચારી/કારીગરોની ભરતી કેવી રીતે થાય છે ?

	ઘણી જ સરળતાથી	સરળતાથી	થોડીક મુશ્કેલીથી	ઘણીજ મુશ્કેલીથી
બીનકુશળ કારીગરો				
અર્ધકુશળ કારીગરો				
કુશળ કારીગરો				
વોકેશનલ એપ્રેન્ટિશ				

8. આપ સામન્ય રીતે વ્યવસાયલક્ષી એપ્રેન્ટિશની નિમણૂંક કઈ રીતે કરો છો ?

	હંમેશમુજબ	કેટલીકવાર	ભાગ્યેજ
વર્તમાનપત્ર દ્વારા			
સગાસંબંધીઓ દ્વારા			
રોજગાર વિનિમય કચેરી દ્વારા			
ખાનગી રોજગાર સંસ્થા દ્વારા			
વ્યવસાયલક્ષી શાળાના સંપર્કથી			
બીજી કોઈ રીતે હોય તો જણાવો			

9. **સામાન્ય કર્મચારી કે કારીગરોની જગ્યાયે વ્યવસાયલક્ષી એપ્રેન્ટિસની નિમણુંક કરવાના આપણા નિર્ણયમાં નીચેના પરિબળો કેટલા મહત્ત્વના હોય છે ?**

	ખૂબજ મહત્વના	કેટલુક મહત્વ	થોડુંક મહત્વ	બિલકુલ નહીં
તેઓ સરળતાથી મળી રહે છે.				
તેઓ વધારે વિશ્વાસપાત્ર છે.				
તેઓ તત્કાળ નોકરી પર વધારે ઉત્પાદકીય છે.				
તેઓ વધારે કાર્યક્ષમ હોય છે.				
સરકારનો કવોટા પૂરો કરવા				
તેઓને નોકરીમાંથી કાઢી મૂકવા સરળ છે.				
તેઓ ઓછા વેતને મળે છે.				
તેઓને કાર્યનો આનુંસગિત પ્રાયોગિક અનુભવ હોય છે.				
તેઓ સૂચનાઓનો સારી રીતે અમલ કરે છે.				
તેઓ ઘણાં ઉત્સાહી હોય છે.				
તેઓને વધારે સૈદ્ધાંતિક જ્ઞાન અને પ્રાયોગિક અનુભવ વધારે હોય છે.				
તેઓ ગતિશીલ હોય છે.				

10. મહેરબાની કરીને આપે નિમણૂંક કરેલ વાર્ષિક વ્યવસાયલક્ષી એપ્રેન્ટિસની સંખ્યા દર્શાવો અને જો તેમને કાયમી કરેલ હોય તો પણ સખ્યા વર્ણવો.

વર્ષ	નિમણૂંક કરેલ વ્યવસાયલક્ષી એપ્રેન્ટીસની સંખ્યા	કાયમી કરેલાની સંખ્યા
1995		
1994		
1993		

11. એક જ સરખા કાર્યમાં કામ કરતા અન્ય કર્મચારી ની સરખામણીમાં વ્યવસાયલક્ષી એપ્રેન્ટિસ કેવા હોય છે ?

તેઓ વધારે કુશળ છે ☐ તેઓ અર્ધ કુશળ છે. ☐ તેઓ કુશળ નથી. ☐

12. જો વ્યવસાયલક્ષી એપ્રેન્ટીસ અન્ય કર્મચારી / કારીગરની સરખામણીમાં કુશળ ન હોય તો, તેની આ અકુશળતા માટે નીચેનાં પરિબળો કેટલાં અંશે જવાબદાર હોય છે ?

	ઘણાં જ જવાબદાર	કેટલેક અંશે જવાબદાર	થોડાક અંશે જવાબદાર	બિલકુલ નહીં
યોગ્ય વલણનો અભાવ	☐	☐	☐	☐
સૈદ્ધાંતિક જ્ઞાનનો અભાવ	☐	☐	☐	☐
પ્રાયોગિક જ્ઞાનનો અભાવ	☐	☐	☐	☐
વ્યવહારીક કુશળતાનો અભાવ	☐	☐	☐	☐
શિસ્તનો અને સમયકારકતાનો અભાવ	☐	☐	☐	☐
કામના સ્થળ પરની મશીનરીથી વાકેફ હોતા નથી	☐	☐	☐	☐
સંસ્થા સાથેના લગનનો અભાવ	☐	☐	☐	☐
બીજું કોઈ પણ કારણ હોય તો જણાવો	☐	☐	☐	☐

12. આપની કંપનીની 'વ્યવસાયલક્ષી એપ્રેન્ટિસ' ની કાર્ય-જવાબદારીના અનુંસધાનમાં નીચેના કૌશલ્યો કેટલાં મહત્ત્વના છે ?

	ખૂબ મહત્વના	કેટલાક મહત્વના	થોડાક મહત્વના	બિલકુલ મહત્વના નહીં
બીજાઓની સાથે કામ કરવાની કુશળતા				
કામની આપ-લે અને પત્રાચારની કુશળતા				
વ્યવહારિક કુશળતા				
ગાણેતિક કુશળતા				
કાર્ય શરૂ કરવાની કુશળતા				
સૂચનાઓનો અમલ કરવાની કુશળતા				
સમસ્યા ઉકેલ કુશળતા				

13. ઉપરોક્ત કૌશલ્યોના અનુસંધાનમાં વ્યવસાયલક્ષી એપ્રેન્ટિસની કાર્ય કુશળતા કેવી હોય છે ?

	ખૂબ સારી છે	સારી હોય છે	ઠીક હોય છે	નહિવત હોય છે
બીજાઓની સાથે કામ કરવાની કુશળતા				
કામની આપેલ અને પત્રાચારની કુશળતા				
વ્યવહારીક કુશળતા				
ગાણિતિક કુશળતા				
શરૂઆત કરવાની કુશળતા				
સૂચનાઓનો અમલ કરવાની કુશળતા				
સમસ્યા ઉકેલ કુશળતા				

14. આપના ધંધા પ્રત્યે વ્યવસાયલક્ષી એપ્રેન્ટિસનું વલણ કેવું હોય છે.

ખૂબજ હકારાત્મક ☐ હકારાત્મક ☐ નકારાત્મક ☐

15. વ્યવસાયલક્ષી એપ્રેન્ટિસ અંગે આપનો સર્વાંગી અભિપ્રાય કેવો છે ?

ઘણો જ સંતોષકારક ☐ સંતોષકારક ☐ અસંતોષકારક ☐

16. નીચે જણાવેલ સંસ્થા તરફથી આપશ્રીને કયારેય વ્યવસાયલક્ષી એપ્રેન્ટિસ માટે ભલામણ પત્ર મળ્યા છે ?

	હા	ના
શાળામાંથી	☐	☐
સરકારી એપ્રેન્ટીસશીપ બોર્ડ માંથી	☐	☐
સ્થાનિક સામાજિક નેતા પાસેથી	☐	☐
અગાઉના એમ્પ્લોયર પાસેથી	☐	☐
જિલ્લા શિક્ષણખાતા તરફથી	☐	☐
સરકારી રોજગાર વિનિમય કચેરી માંથી	☐	☐

17. આપ નીચેની બાબતોથી માહિતગાર છો ?

	હા	ના
સરકારી એપ્રેન્ટીસશીપ કાયદાથી	☐	☐
સરકારી શિક્ષણ સુધારાઓથી	☐	☐
આપની સ્થાનિક વ્યવસાયલક્ષી શાળાના અભ્યાસક્રમો અને તેના કાર્યક્રમોમાંથી	☐	☐
આપનાં સ્થાનિક વ્ય.લક્ષી શાળા અને તાલીમ કેન્દ્રોથી	☐	☐

18. આપનો સ્થાનિક વ્યવસાયલક્ષી શાળા સાથે સંપર્ક છે ?

જો 'હા' હોય તો કઈ રીતે — હા ☐ ના ☐

સરકારી સૂચનથી	☐	શાળાના પ્રાસંગિક આમંત્રણથી	☐	શાળાના પ્રતિનિધિ દ્વારા મારી મુલાકાતથી	☐
વિદ્યાર્થી દ્વારા	☐	શાળા તરફથી મળેલ પત્રો દ્વારા	☐	શાળામાં ખાસ પ્રવચન આપવાથી	☐

19. નીચેના મુદ્દામાંથી ત્રણ એવા મુદ્દાઓ સામે ટીકમાર્ક કરો કે જેને આપ વ્યવસાયલક્ષી શિક્ષણના સુધારા માટે સૌથી વધારે મહત્વના હોય તેવું માનતા હોવ.

વ્ય. શિક્ષણનો ઉચો મોભો		પ્રાયોગિક કાર્ય માટે વધારે સમય ફાળવવો	
અદ્યતન મકાન		કાર્ય કરવા માટે વધુ તકો આપવી	
અદ્યતન આનુંસંગિક સાધનો		અભ્યાસ ક્રમ દરમ્યાન વધારે સારુ માર્ગદર્શન આપવું	
શૈક્ષણિક સ્ટાફની ઉચી લાયકાત અને અનુભવ		શિસ્તનું ચુસ્ત પાલન	
અભ્યાસક્રમના વર્ષ વધારવા		અભ્યાસને અંતે નોકરીની ગેરંટી	
ઉચ્ચ અભ્યાસમાં વધુ તકો		અભ્યાસને અંતે લોનની સગવડ	
માધ્યમિક કક્ષાએથી જ વ્ય. અભ્યાસક્રમ શરૂ કરવો		બીજી કોઈ રીત હોય તો જણાવો.	

20. આપને સેવા આપવાનું ગમશે ?

	હા	ના
અભ્યાસક્રમ બનાવતી સમિતિમાં		
વ્ય.શિક્ષણ સુધારણા સમિતિમાં		
આપના વિસ્તારની વ્ય.શાળાના સંચાલનમાં		

21. આપશ્રીએ નીચેના પૈકીની કોઈ પણ મદદ કે સેવા વ્યવસાયલક્ષી શાળાઓને આપેલ હોય તો ટીકમાર્ક કરો.

જુનાં યંત્ર આપેલ છે.	પરીક્ષાના અભ્યાસક્રમની સમિતિની બેઠકમાં હાજરી આપેલ	વિદ્યાર્થીઓને ઉદ્યોગની મુલાકાત આપેલ છે.
પ્રવચન આપેલ છે.	શાળાની યોજનાના આયોજનમાં રસ લીધેલ છે.	શાળાઓને નાણાંકિય મદદ કરેલ છે.
અભ્યાસક્રમ વિકસાવવા માટે શિક્ષકોને મદદ કરેલ છે.	તેજસ્વી વિદ્યાર્થીઓ માટે ઇનામની વહેંચણી કરેલ છે	વિદ્યાર્થીઓને કારકીર્દિ અંગેની સલાહ આપી છે.

૧ આપ વધારે વ્યવસાયલક્ષી એપ્રેન્ટિસને રાખવા બીજાઓને ભલામણ કરશો ?

હા ☐

ના ☐

જો ભલામણ કરવા માગતા હોવ તો શા માટે ?

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જો ભલામણ કરવા ન માગતા હોવ તો શા માટે ?

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.....

આ વ્યવસાયલક્ષી શિક્ષણ અંગે કોઈ સૂચન કે ભલામણ કરવા માંગતા હોવ તો નીચે મહેરબાની કરીને દર્શાવશો.

આ પ્રશ્નોત્તરી પૂરી કરવામાં આપશ્રી કરેલી મદદ બદલ આપનો આભારી છું.

APPENDIX 5

Profile of Respondents

Details of Respondent		Principal	Teacher	Student	Ex-student	Employer
Total Respondent (number)		21	163	546	111	47
		%	%	%	%	%
Area wise	Urban	62	58	57	70	89
	Rural	38	42	43	30	11
Sex wise	Male	62	57	39	50	100
	Female	38	43	61	50	00
Caste wise	General Caste	95	81	55	27	-
Scheduled Caste		05	04	13	16	-
Scheduled Tribe		00	07	19	24	-
Socially and Educationally Backward Caste		00	08	13	33	-
Trade wise	Commerce	32	41	38	54	-
	Technical	20	21	12	31	-
	Home-science	44	36	46	14	-
	Agriculture	04	02	04	01	-
Zone wise	Ahmedabad	43	42	37	37	41
	Gandhinagar	19	30	28	28	15
	Rajkot	19	12	17	15	20
	Baroda	19	16	18	20	24

APPENDIX 6

Details of respondents by schools

Name of schools	Principal	Teacher	Student	Ex-student
1. Gnan Jyot Vidhalaya	1	17	31	4
2. Nutan Vidhalaya	1	4	14	2
3. Mangaldip Vidhalaya	1	9	16	4
4. Navyug Vidhalaya	1	6	26	5
5. Uma Sikshantirthy	1	8	31	6
6. Guru Krupa Vidhalaya	1	13	15	6
7. Prakash High School	1	4	27	5
8. Andhjan Vidhalaya	1	3	7	5
9. Gandhi Ashram Vidhalaya	1	4	35	4
10. Experimental High School	1	21	79	11
11. Aadarsh High School	1	9	14	10
12. Modern High School	1	14	39	6
13. Bharat High School	1	5	21	4
14. Sheth V.D.T.Girls High School	1	8	42	6
15. C.N.Girls Vidhalaya	1	8	21	5
16. Sherayas High School	1	6	21	7
17. Uttar Buniyadi High School	1	4	14	4
18. Alfred High School	1	5	17	6
19. Induben High School	1	3	14	4
20. Kadvibai Kanya Vidhalaya	1	8	46	4
21. Shrimad Dyanand Vidhalaya	1	4	16	3

APPENDIX 7a

President's letter

Sudhir J Shah
M.A., B.Ed.

Principal
Shree J. C. Shah Prakash
High School
Relief Road, Ahmedabad
Phone - 364582

Member - Gujarat Secondary Education Board
- Gujarat Higher Secondary Education Board

Dear Principal,

I would like to introduce Mr. G. Desai as my close relative. He is reading for a Ph.D. at the School of Education in Leicester University, U.K. He is doing his research on Gujarat Vocational Education.

I request you to allow him to visit your school so that he administrates his questionnaires and talk with you and your staff about his research work.

He is my closed relative, so I hope for good co-operation and response.

All the best

Yours,

Sudhir Shah

APPENDIX 7b

President's letter (in Gujarati)

સુધીર જે. શાહ
એમ. એ.,બી. એડ.

આચાર્ય
શ્રી જે. સી. શાહ પ્રકાશ હાઈસ્કુલ
રીલીફ રોડ, અમદાવાદ-૩૮૦ ૦૦૧.
ફોન : ૩૬૪૫૮૨

સભ્ય : ગુજરાત માધ્યમિક શિક્ષણ બોર્ડ, ગાંધીનગર
ઉચ્ચતર માધ્યમિક શિક્ષણ બોર્ડ

માનનીય આચાર્યશ્રી,

_____

_____

સાદર વંદન !

આવનાર ભાઈ શ્રી ગોવિંદભાઈ દેસાઈ મારા સ્નેહી છે. તેઓ ઈંગ્લેન્ડની લેઈસ્ટર યુનિવર્સિટીમાં પીએચ.ડી.નું કાર્ય કરે છે. તેમનું સંશોધન કાર્ય ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષણ પર છે. તેમની પ્રશ્નોત્તરી ભરી આપવા અને તેમના સંશોધન કાર્યમાં મદદરૂપ થવા અંગત વિનંતી છે. આ અંગે તેઓ વિગતે ચર્ચા આપની સાથે રૂબરૂમાં કરશે. અંગત સ્નેહી હોવાથી આપના સહકારની અપેક્ષા રાખું છું.

કુશળ હશો.

લિ. આપનો

(સુધીર જે. શાહ)

આઈ/૪, આયોજન નગર સોસાયટી, શ્રેયસ રેલવે ક્રોસીંગ પાસે, આંબાવાડી, અમદાવાદ-૩૮૦ ૦૧૫.

Appendix 8a
District Education Officer's letter

State Education Department
Vocational Stream
Patnagar Yojana Bhavan
Allis Bridge
Ahmedabad

To,

The Principal / Administrator

_____

_____

Sub - Research in Vocational Education

Dear Sir,

Your are instructed to co-operate with Govind Desai, who is going to visit your school with this letter. He is doing research in vocational education to help us. Please fill in the questionnaires and help him.

R.V. Patel
Education Officer
Vocational Stream

Appendix 8b
District Education Officer's letter (in Gujarati)

જિલ્લા શિક્ષણાધિકારીની કચેરી
વ્યવસાયલક્ષી પ્રવાહ
પાટનગર યોજના ભવન
એલીસબ્રીજ, અમદાવાદ - ૬.

પ્રતિ,
આચાર્યશ્રી/સંચાલકશ્રી

_____

_____

વિષય : વ્યવસાયલક્ષી શિક્ષણમાં સંશોધન અંગે.

મહાશય,

જયભારત સાથે જણાવવાનું કે આ પત્ર લઈ આવનાર ગોવિંદ દેસાઈ આપણા વ્યવસાયલક્ષી શિક્ષણના વિકાસમાં સહાયભૂત થવા સંશોધન હાથ ધરેલછે તેના ભાગ રૂપે તૈયાર કરેલ પ્રશ્નાવલી ભરાવવામાં મદદરૂપ થવા જણાવવામાં આવેછે.

(આર. વી. પટેલ)
જિલ્લા શિક્ષણાધિકારી
વ્યવસાયલક્ષી પ્રવાહ

APPENDIX 9a

Researcher's letter

Govind Desai

H-2-23 Anandnagar Apartment
New Vadaj.
Ahmedabad - 380013

Date 4 - 4 - 1996.

To,

The Principal

_____

_____

Sub - Permission for visiting school

Dear Sir,

I have been given your name by State Education Department (Vocational Stream).

I am glad to inform you that I am reading for a Ph.D. at the School of Education in the University of Leicester, U.K. Regarding my research, which is based on Vocational Education of Gujarat State, I would like to visit your school.

I request you to allow me on Date : _____ Time :_____ to visit your school. I would be grateful if you arrange for me to meet staff, students and particularly ex-student who are appointed in wage employment, apprenticeship at the time.

I have enclosed two letters, one from the State Education Department and other from your president Sudhir Shah, requesting you to allow me access for research work.

Hoping for your valuable co-operation.

yours faithfully,

Govind Desai

APPENDIX 9b
Researcher's letter (in Gujarati)

ગોવિંદ વી. દેસાઈ
એચ-૨-૨૩, આનંદનગર એપાર્ટમેન્ટ,
નવાવાડજ,
અમદાવાદ-૩૮૦૦૧૩.
તા. ૪-૪-૧૯૯૬.

પ્રતિ,
આચાર્યશ્રી,
_____
_____

વિષય :- શાળાની મુલાકાત આપવા બાબત.

નમસ્તે,

જયભારત સાથે જણાવવાનું કે ગુજરાત રાજ્ય વ્યવસાયલક્ષી શિક્ષણ વિભાગ તરફથી મને જાણવા મળ્યું છે કે આપની શાળા આ વિસ્તારમાં વ્યવસાયલક્ષી શિક્ષણ ક્ષેત્રે ખૂબ જ સુંદર કામગીરી કરે છે.

મને જણાવતાં આનંદ થાય છે કે હું ઈંગ્લેન્ડની લેઈસ્ટર યુનિવર્સિટીમાં ગુજરાતમાં ચાલતા વ્યવસાયલક્ષી શિક્ષણના અભ્યાસ અંગે Ph.D. શરૂ કરેલ છે. મારા અભ્યાસના અનુસંધાનમાં હું આપની શાળાની મુલાકાત લેવા ઈચ્છું છું.

હું આપશ્રીને વિનંતી કરું છું કે આપ મને તા. .....ને .....ના રોજ ..... વાગે શાળાની મુલાકાત લેવાની મંજુરી આપશો. શાળાની મુલાકાત સમયે શાળામાં અભ્યાસ કરતા ધોરણ-૧૧, ૧૨ ના વિદ્યાર્થીઓ, શિક્ષક મિત્રો અને ધોરણ-૧૨ પાસ કરેલ ભૂતપૂર્વ વિદ્યાર્થી (જો શક્ય હોય તો) હાજર રાખશો તો આપનો ખૂબ જ આભારી થઈશ.

આ સાથે આપની જાણસારું જિલ્લા શિક્ષણાધિકારીશ્રી અને શ્રી સુધીરભાઈ શાહના વિનંતી પત્રો બિડેલ છે.

આપના અમૂલ્ય સહકારની અપેક્ષાએ વિરમું છું.

લિ.

(ગોવિંદ વી. દેસાઈ.)

APPENDIX 10a

Letter for Ex-student

Govind Desai

14, Hudson Close
Leicester
U.K.(England)

Dear Student friend,

I have been given your name by your Higher Secondary School as some one who might be willing to help me in my research. I am writing to you with two sets of questionnaires, to be completed by yourself and the other to be completed by your employer.

After completing both questionnaires, please send them to me in the pre-paid self-addressed envelope enclosed.

The information you provide, will be most useful to me in my research work, so please try and complete the questionnaire as best as you can. There is no need to provide any personal details about yourself, and all information given, will be treated in the strictest confidence.

Thanking you most sincerely for your help.

Yours student friend,

Govind Desai
Encl. - Two sets of Questionnaires

APPENDIX 10b

Letter for Ex-student (in Gujarati)

Govind Desai
(M.Com., M.Ed., M.Phil)
14,Hudson Close, .
Leicester,
U.K. (England)

વ્હાલા વિદ્યાર્થી મિત્ર,

મને આપની શાળામાંથી (જે શાળામાં આપશ્રીએ ધોરણ-૧૨ વ્યવસાયલક્ષી પરીક્ષા પાસ કરી છે) જાણવા મળ્યુ છે કે આપ ખૂબ જ હોંશિયાર અને સમજદાર વ્યક્તિત્વ ધરાવતા વિદ્યાર્થી છો. આ જાણીને મે આ પત્ર સાથે બે પ્રશ્નાવલિઓ મોકલી છે. જેમાંથી એક (વ્હાલા ભૂતપૂર્વ વિદ્યાર્થી મિત્ર વાળી) પ્રશ્નાવલિ આપશ્રીએ ભરવાની છે અને બીજી પ્રશ્નાવલિ (આદરણીયશ્રી વાળી) આપશ્રી વ્યવસાયલક્ષી પાસ કર્યા પછી જ્યાં એપ્રેન્ટિસશીપ તરીકે કે બીજી કોઈ રીતે કામ કરેલ હોય તેવી વ્યક્તિ પાસે, અથવા જેના હાથ નીચે આપશ્રીએ કામ કર્ય હોય કે કરતા હોય તેવી વ્યક્તિ પાસે, અથવા જ્યાં વ્યવસાયલક્ષી વિદ્યાર્થીઓ નોકરી કરતા હોય તેવી વ્યક્તિ પાસે ભરાવાની છે.

આ બે પ્રશ્નાવલિ ભર્યા પછી મને આ સાથે રાખેલ કવર જેના ઉપર મારું સરનામું લખેલ છે. તેમાં ભરીને મને વહેલી તકે મોકલી આપવા હું આપને ખૂબ જ નમ્ર ભરી વિનંતી કરું છું. આપશ્રીએ કવર ઉપર ટિકિટ લગાડવાની જરૂર નથી.

આપની આ પ્રશ્નાવલિ મારા અભ્યાસમાં ખૂબ જ ઉપયોગી અને મહત્વની હોવાથી ખૂબ જ કાળજીપૂર્વક અને સમજદારીપૂર્વક ભરવા આપને વિનંતી કરું છું. આપશ્રીએ પ્રશ્નાવલિમાં કયાંય આપનું નામ-સરનામું લખવાનું નથી ફક્ત તમારા અભિપ્રાય અને સૂચનો જણાવવાના છે. આપને કંઈક મુશ્કેલી જણાયતો આપની સ્કૂલના શિક્ષક મિત્રનો સંપર્ક સાધશો તો આપને મદદ કરશે.

ફરીથી આપના ખૂબ જ મૂલ્યવાન સહકાર માટે આપનો હૃદયપૂર્વકનો આભાર માનું છું.

નમસ્કાર

લી.

ગોવિંદ દેસાઈ

APPENDIX 11

Table 1
Details of Schools and their Students

Details of Schools	Nos. of School	Nos. in %
School's Nature-1		
Government	1	5%
Private	-	-
Government aided Private	20	95%
School's Nature-2		
Only Girls	7	33%
Only Boys	1	5%
Comprehensive	13	62%
Nos. of Students (General)		
a. 1 to 100	2	10%
b. 101 to 200	1	5%
c. 201 to 300	1	5%
d. 301 to 400	14	75%
e. Over 401	1	5%
Nos. of Vocational Students		
a. 1 to 50	10	52%
b. 51 to 100	5	24%
c. 101 to 150	3	14%
d. 151 to 200	2	10%

Table 2

Profile of School Principals

General background of sample schools principals	Nos. of Principals
Age	
Less than 30 years	1
Between 31 to 40 years	3
More than 41 year	17
Qualification background	
Master of Commerce	8
Master of Arts	4
Master of Science	9
A. Grades	
First Class	1
Second Class	15
Third Class	5
Bachelor of Education	21
B. Grades	
First Class	5
Second Class	14
Third Class	1
Master of Education	4
C. Grades	
Second Class	2
Third Class	2

(table 2 continued)

Experiences	
As a Teacher	
Up to 10 years	11
Between 11 to 20 years	5
Between 21 to 30 years	1
More than 31 years	4
As a Principal	
Up to 5 years	8
Between 6 to 10 years	8
Between 11 to 15 years	3
More than 16 years	2

Table 3

Profile of Vocational Teachers

Details of Vocational Teachers		Total	Vocational teacher	Language teacher
Total Nos. of Teachers		163	148	15
Working as Full time		163	148	15
General Background				
1. Area Wise	Urban	94	86	8
	Rural	69	62	7
2. Sex Wise	Female	70	62	8
	Male	93	86	7
3. Caste Wise	General Caste	126	117	9
	Scheduled Caste	6	5	1
	Scheduled Tribe	11	8	3
	Socially Educationally Backward Caste	12	11	1
4. Trade Wise	Commerce	67	62	5
	Technical	34	31	3
	Home-science	58	53	5
	Agriculture	4	3	1
Educational Background				
Diploma		38	38	-
Grades	First Class	31	31	
	Second Class	7	7	-
Bachelor in	Commerce	8	8	-
	Arts	15	10	5
	Science	20	20	-

(table 3 continued)

Grades	First Class	11	-	-
	Second Class	23	-	-
	Third Class	9	-	-
Master in	Commerce	46	46	--
	Arts	30	20	10
	Science	6	6	--
Grades	First Class	5	-	-
	Second Class	43	-	-
	Third Class	34	-	-
Bachelor in	Education	90	75	15
Grades	First Class	54	49	5
	Second Class	33	24	9
	Third Class	3	2	1
Master in	Education	8	8	--
Grades	First Class	5	5	--
	Second Class	3	3	--
Industrial Experience		25	25	--
Post	Relevant	22	22	--
	Irrelevant	3	3	--
Time	Less than a year	20	20	--
	More than a year	5	5	--
Teaching Experiences		162	147	15
Less than 5 years		43	39	4
Between 5 to 10 years		103	95	8
Between 11 to 15 years		4	3	1
More than 16 years		12	10	2

Table 4

The importance of criteria in the appointment of new vocational teachers

Name of responsible factors	Very imp		Of some imp		Of little imp		Of no imp	
Name of respondents	Pr.	Tr.	Pr.	Tr.	Pr.	Tr.	Pr.	Tr.
Academic qualification (%)	90	87	10	08	00	2	00	3
Professional qualification (%)	95	55	00	11	05	21	00	13
Teaching experiences (%)	57		24		19		00	
Industrial experiences (%)	24		19		33		24	
Practical experience (%)	35		30		25		10	
School management decision (%)	47		18		24		11	
According to government criteria regarding minimum qualification and positive describe-nation (%)	12		41		06		41	
A donation (%)		36		11		24		29
My contact with principal (%)		19		14		42		25
Through Personal contacts (%)		20		17		37		26
I was eligible for reserved job (%)		9		5		50		36

Table 5

A Personal donation analysis by Zone, Area and Trade

Details		Most of them	Some of them	A few	Hardly any	None
Overall Response (%)		61	11	07	19	02
		%				
Zone	Ahmedabad	43	-	-	-	-
	Gandhinagar	26	-	-	-	-
	Rajkot	19	-	-	-	-
	Baroda	12	-	-	-	-
Area	Urban	69	-	-	-	-
	Rural	31	-	-	-	-
Trade	Commerce	41	-	-	-	-
	Technical	22	-	-	-	-
	Home-science	20	-	-	-	-
	Agriculture	17	-	-	-	-

Table 6

Profile of Vocational Students

Details of Vocational Students		Total	Commerce	Technical	Home - science	Agriculture
Nos. of Students		546	209	65	253	19
Sex	Boy	213	129	65	-	19
	Girl	333	80	-	253	-
Areas	Urban	313	-	-	-	-
	Rural	233	-	-	-	-
Standard	XI	242	84	20	132	06
	XII	304	125	45	121	13
Age	Below 17 years	305	113	33	154	05
	Between 17 to 18	188	83	22	78	05
	19 years and more	53	13	10	21	09
Caste	General Caste	297	111	28	146	12
	Scheduled Caste	71	32	05	30	04
	Scheduled Tribe	101	27	09	62	03
Socially and Educationally Backward Caste		74	37	22	15	-
Educational Back-ground						
1. S.S.C.		514	-	-	-	-
Grade	First Class	176	77	29	65	05
	Second Class	287	95	27	156	09
	Third Class	51	20	4	22	05
Trial	First Trial	372	150	53	156	13
	Second Trial	117	29	7	75	06
	Third and more trial	17	06	03	08	-
2. H.S.C		13	-	-	-	-

Table 7

Different stages of vocational awareness

Name of stage	%
After passing the secondary schooling	73
At secondary	17
Just before enrolling	09
At primary school	01

Table 8

Major sources of vocational information

Details	%	Name of zone (%)				Area (%)		Name of course (%)			
		A	G	R	B	U	R	C	T	Hs	A
From my previous school	13	-	-	-	-	-	-	-	-	-	-
Through family and friends	46	59	59	27	30	45	47	26	46	45	21
From school teacher(s)	69	76	56	69	73	71	65	71	57	70	63
From government agencies	0	-	-	-	-	-	-	-	-	-	-
Getting leaflets	9	-	-	-	-	-	-	-	-	-	-
From employer	2	-	-	-	-	-	-	-	-	-	-
From my present school	43	45	27	43	62	49	35	38	24	50	63
From the careers service	2	-	-	-	-	-	-	-	-	-	-
From adverts in local newspaper	5	-	-	-	-	-	-	-	-	-	-
From social worker	3	-	-	-	-	-	-	-	-	-	-
Other please specify	0	-	-	-	-	-	-	-	-	-	-

A - Ahmedabad G - Gandhinagar R - Rajkot B - Baroda
U - Urban R - Rural
C - Commerce T - Technical Hs - Home-science A - Agriculture

Table 9

Students' rating of different vocational information sources

Name of sources		Good	Fair	Poor
From your previous school	%	50	28	22
From careers service	%	24	36	40
From family and friends	%	58	31	11
Though local newspaper	%	31	35	34
From school teacher	%	68	24	8
From social and community leaders	%	19	41	40
From government agencies	%	30	31	39

Table 10

Students' rating of reasons for joining vocational education course

Details	Highly imp	Of some	of little	of no imp
I want to learn new skills	389 (71%)	90 (16%)	44 (8%)	14 (5%)
I want to start my own business	293 (56%)	49 (8%)	100 (18%)	86 (18%)
I want to improve my job prospects	409 (78%)	64 (12%)	28 (5%)	24 (5%)
The course leads to a good chance of getting a job	286 (52%)	97 (19%)	93 (19%)	56 (10%)
The only alternative to the course was unemployment	372 (68%)	53 (10%)	56 (12%)	52 (10%)

(table 10 continued)

Details	Highly imp	Of some	of little	of no imp
The course is related to my family occupation	163 (31%)	69 (13%)	73 (14%)	210 (42%)
I am particular interested in this area	392 (72%)	53 10%)	60 (11%)	30 (7%)
The course leads to a recognised national qualification	226 (41%)	93 (18%)	95 (18%)	110 (23%)
The course has a good reputation locally	207 (38%)	106 (20%)	124 (24%)	92 (18%)
The latest technology is used in the course	308 (56%)	76 (15%)	77 (16%)	65 (13%)
The course has a good reputation regionally	203 (37%)	84 (18%)	140 (27%)	94 (18%)
I was not accepted on the course I would have preferred to study	202 (40%)	73 (14%)	98 (19%)	136 (27%)
The course is easy to complete	299 (55%)	94 (18%)	83 (17%)	51 (10%)
The course is near to where I live	233 (43%)	82 (17%)	92 (17%)	127 (23%)
My friends/family recommended this course to me	239 (43%)	107 (20%)	84 (18%)	103 (19%)
There is provision to integrate disabled students	208 (38%)	64 (12%)	86 (17%)	165 (33%)
The course leads to further study	272 (58%)	110 (20%)	80 (14%)	40 (8%)
The course is new one	351 (64%)	76 (16%)	49 (10%)	53 (10%)

Table 11

Principals' and Teachers' Responses to Statements on Vocational Education

Sentence details		Strongly agree		Agree		Dis-agree		Strongly disagree	
Name of Respondents		Pr.	Tr.	Pr.	Tr	Pr	Tr	Pr	Tr
The course objectives expressed and related to training needs are satisfactory.	%	14	23	48	50	33	14	5	13
The content of curricula and syllabuses do not provide an appropriate level of practical training.	%	57	20	19	55	24	12	-	13
The theoretical and practical areas are not co-ordinated.	%	24	28	19	12	48	44	9	16
A two years course does not prepare students for employment.	%	57	14	14	25	14	47	15	14
Courses designed to meet local needs are not available.	%	81	59	14	15	5	22	-	4
Courses do not correspond to current and foreseeable industrial needs.	%	19	6	14	20	48	52	19	22
Curricula and syllabuses are not reviewed and revised regularly.	%	76	69	14	22	5	6	5	3
There is a satisfactory scheme for advising potential students and trainees about courses and careers.	%	14	12	20	20	52	61	14	7
There is a satisfactory scheme for assisting students to find employment.	%	14	17	24	19	48	62	14	2
There is a clear description of the examination scheme.	%	71	69	19	21	5	6	5	4
There is a satisfactorily scheme for grading staff in relation to experience, qualifications and responsibilities.	%	33	9	14	17	33	68	19	6
Buildings and services are maintained satisfactorily in the school.	%	71	44	19	22	10	28	-	6
The availability of materials and their use in the training are satisfactorily.	%	76	20	14	18	10	60	-	2

(table 11 continued)

Overall, the school appears well-managed regarding management style and effectiveness.	%	57	10	24	25	14	46	5	19
Industry participates in joint publicity or similar supporting activities.	%	10	5	5	10	80	77	5	8
There is a regular arrangement for staff to be attached to industry is effective.	%	10	2	14	15	71	47	5	36
The schools in creating a general work environment similar to that industry is effective.	%	19	10	24	35	47	50	10	5
There is a current national development plan for vocational education system.	%	14	7	5	10	71	74	10	9
Quality of vocational education is monitored by Central Staff or State Government.	%	19	12	10	16	57	58	14	14
The education department provide for systematic and effective coverage of responsibility for planning implementation and follow-up.	%	14	10	10	14	71	56	5	20

Pr. - Principal Tr. - Teacher

Table 12

Response of Teachers and Students on Vocational Curricula

Details		Should be increased		Should be decreased		Keep as it is	
Details of Respondent		Student	Teacher	Student	Teacher	Student	Teacher
The Amount of time devoted to							
Vocational Subjects	%	68	54	2	3	29	43
Language Subject	%	33	2	21	34	45	64
General Foundation Subjects	%	38	15	15	18	47	67
Entrepreneurship	%	76	74	10	2	12	24
The Amount of time for practical work							
Vocational Subject-1	%	69	70	3	28	27	2
Vocational Subject-2	%	45	3	15	36	40	61
Vocational Subject-3	%	45	15	14	20	41	65
Entrepreneurship	%	76	81	6	1	18	18
The Amount of time for theoretical work							
Vocational Subject-1	%	61	38	7	5	32	57
Vocational Subject-2	%	37	2	20	28	43	70
Vocational Subject-3	%	37	23	24	21	39	56
Entrepreneurship	%	66	54	7	6	25	42
Emphasis							
Vocational Subjects	%	72	68	24	28	3	4
Language Subject	%	28	27	63	63	9	10
General Foundation Subjects	%	30	28	51	48	19	24
Entrepreneurship	%	79	71	16	23	4	.6

(table 12 continued)

Relevance to the Students future		considerable Relevance		of some relevance		Of little relevance	
Vocational Subjects	%	79	77	14	16	7	6
Language Subject	%	38	32	44	39	17	29
General Foundation Subjects	%	30	34	47	52	23	14
Entrepreneurship	%	78	76	15	12	6	12
Quality of Course		should be improved		keep as it is			
Vocational Subjects	%	73	76	27	24		
Language Subject	%	35	21	65	79		
General Foundation Subjects	%	44	37	56	63		
Entrepreneurship	%	64	61	36	39		

Table 13

Teachers and Students response on Physical Resources

Name of Physical Resources	Respondent		Satisfactory	Unsatisfactory
Building and Maintenance	Students	%	80	20
General Environment of School	Students	%	84	16
Discipline	Students	%	85	15
School Time	Students	%	86	14
Physical Facilities	Teachers	%	68	32
Library	Students	%	72	28
	Teachers	%	58	42
Class rooms	Students	%	72	28
	Teachers	%	75	25
Laboratory and Workshop	Students	%	77	23
	Teachers	%	54	46
Equipment in Lab and Workshop	Students	%	65	35
Quality of equipment	Teachers	%	59	41
Maintenance of Equipment	Teachers	%	61	39
Instructional Materials	Teachers	%	54	46
Guidance and Teaching	Teachers	%	66	34
Nos. of Teachers	Students	%	89	11
Quality of Teachers	Students	%	88	12
Level of provided Training	Students	%	80	20
Practical Work	Students	%	78	22
Raw-materials	Students	%	61	39
Visit to Industries	Students	%	71	29
Expert Speech	Students	%	63	37

Table 14

Apprenticeship available in Gujarat State

I	**Commerce Group**
1.	Office Management
2.	Stenography
3.	Purchasing and Stenography
4.	Life Insurance
5.	Accountancy and Auditing
6.	Banking Assistant
II	**Technical Group**
1.	Building Maintenance
2.	Maintenance and Domestic Appliances
3.	Building Maintenance
III	**Home Science Group**
3.	Food Preservation and Processing
5.	Catering and Restaurant Management
4.	Institutional House Keeping
6.	Commercial Garment, Design and Making
IV	**Agriculture Group**
1.	Farming
3.	Dairy Science
5.	Poultry Farming

Source: Annual Administrative Report 1993-94, p.11 Published by Joint Director 10 + 2 Pat Nagar Yogna Bhavan, Ahmedabad.

Table 15

Principals' views on Student Destinations after completion of Vocational Course

Details	In	Almost All	A lot	Some	Very few
Apprenticeship	%	43	14	38	5
Higher Education	%	14	62	14	10
Work in family firm	%	5	38	24	33
Paid employment	%	5	29	38	28
Unemployment	%	5	29	33	33
Set up own business	%	5	19	52	24

Table 16

Students views on their chances at the end of Vocational Course by Trade, Area and Sex

Details				Trade %				Area %		Sex %	
	Good	Fair	Poor	C	T	Hs	A	U	R	B	G
Set up own business (%)	61	26	13	50	59	64	100	68	48	60	60
Government loan (%)	57	21	22	49	65	58	95	59	53	53	61
Higher Education (%)	51	34	15	38	54	55	84	49	49	52	44
Work in family firm (%)	50	27	23	47	60	48	16	52	44	45	53
Increasing in social status (%)	43	29	28	32	45	43	84	47	32	39	42
Apprenticeship(%)	43	26	31	32	26	46	100	50	27	43	35
Paid employment (%)	28	41	31	27	48	21	11	26	26	24	30

C - Commerce T - Technical Hs - Home-science A - Agriculture
U - Urban R - Rural B - Boy G - Girl

Table 17

The reasons which influencing Employers to recruit Vocational Students

Details of factors		Highly	Some	Little	No
It fulfils government imposed quotas	%	70	23	5	2
They are easily available	%	68	26	6	0
They follow instructions better	%	52	32	15	1
They are cheaper	%	45	36	15	4
They are more reliable	%	35	42	20	3
They are more productive immediately on employment	%	34	32	29	5
They have more theoretical knowledge and practical experience	%	32	23	34	11
They display more initiative	%	26	30	31	13
They can advance faster	%	21	38	24	17
They are more enthusiastic	%	19	38	28	15

Table 18

The most important factors taken into account by Employers when recruiting new workers and new apprentices

Details of Criteria	For General %	For Apprentice %
Personal Recommendation	18	5
Written Test	0	1
Academic Qualification	38	55
Relevant Experience	28	18
Age	0	1
Caste of Applicants	2	2
Reference from formal employer	14	0
Reference from other worker	0	0
Reference from School	0	10
The Government Employment Department	0	1
Recommendation by the Government Apprenticeship Board	0	7

Table 19

Employers and Ex-students Rating of the Importance of skills for undertaking the jobs

	Employers rating of important of skills				Ex-students rating important of skills			
Name of skills	highly imp	of some imp	of little imp	of no importance	very highly	highly	adequate	poor
Skills to work well with others (%)	38	51	11	00	19	55	26	00
Communication skills (%)	38	48	14	00	06	24	46	24
Numeric skills (%)	17	64	13	06	07	45	40	08
Practical skills (%)	32	55	11	02	07	09	46	38
Skills to use initiative (%)	36	51	06	07	04	32	36	28
Skills to follow instruction (%)	32	43	17	08	05	41	35	19
Problem solving Skills (%)	49	39	12	00	3	21	50	26

Table 20

Ex-students' views on the importance of different agencies in helping them obtain their present job

Details		Highly imp	Of some imp	Of little imp	Of no imp
My own efforts	%	76	9	7	8
With the help of the school	%	18	45	10	27
Through news paper, radio	%	18	26	24	32
With help of friends and relatives	%	3	8	20	69
Through Government employment department	%	3	5	23	69
Through the Western Apprenticeship	%	2	16	37	45
Through contact made during the course	%	1	15	22	62

Table 21

Time taken by ex-students to obtain a post after completion of Vocational Course

Duration	Nos. with %	Com merce	Tech-nical	Home-science	Agricul ture	Urban	Rural
Before completion of course	1 1%			1		1	0
Within 6 months	17 15%	8	2	5	2	14	3
Between 6 to 12 months	49 44%	19	20	2	8	35	14
More than 12 months	44 40%	22	12	7	3	28	16

Table 22

Student's views on facilities available at workplace

Name of facilities		Better	About the same	Worse
Conditions in the work place	%	19	65	16
Other facilities e.g. transport, food	%	4	45	51
Respect	%	9	58	33
Training	%	28	49	23
Benefits e.g. holidays, bonuses	%	12	59	29

APPENDIX 12

The role of the Staff Development Cell

The following description relate to the role of the Staff Development Staff Cell in vocational schools. They should :

(a) maintain Personnel Information System on all the members of the faculty in the vocational schools including qualifications, experiences, staff development programmes attended, staff development needs as identified by staff appraisals,

(b) update the information about staff development needs on a regular basis,

(c) Arranging for annual staff appraisals and identify the training needs of faculty,

(d) Identify the training needs For personnel involved in the implementation of different schemes,

(e) prepare Career Development Plans for faculty in collaboration with the Staff Development Cells at the State Directorate,

(f) monitoring the re-deployment of trained faculty in the state effective utilisation of the competencies gained them,

(g) Interacting training establishments to ensure implementation of training programmes.

Staff Development Cells at the Directorate of Vocational Education will carry out the following activities

(1) elicit information on Staff Development needs for individual schools on a continuing basis and maintain and information system on the vocational faculty, principals, Heads of Departments and senior officials with regard to their career development needs.

2) draw up plans for faculty staff development programmes in which personnel from the vocational education system will be deputised annually based on requirements as

identified by Staff Development Staff Cell of vocational.

3) plan for the Staff Development of the officers of the Directorate and Board of Vocational Education in specialised areas like Industrial Liaison, educational management, project management and evaluation, management of innovations, use of computers, staff appraisal, institutions evaluation etc., to be carried out within the other states and abroad.

4) maintain information about possible training places in large and medium industries in specialised areas, where vocational faculty can be deputised for training.

5) maintain information about laboratories, industries, training establishments within the country or abroad for faculty training in emerging technology areas.

6) interact with the Vocational teacher's training Institute for deputising teachers to long-term programmes likes Master's degree in Vocational / Technical Education, induction programmes for new teachers and need based industrial training.

7) arranging with the Vocational Teacher's training Institutes for training programmes in special areas like Resources (Media) Development, Evaluation, Educational Research, etc., to meet the needs of schemes under the various projects.

8) liaise with state Engineering Colleges and universities and industry for deputising teachers to undergo higher education programmes in various faculty.

9) monitor the implementation of staff development programmes conducted at different location and to undertake studies to evaluate effectiveness of the staff development programmes

These descriptions of the role have been taken from World Bank (1990,1991a) and UNEVOC (1995)

APPENDIX 13a
Advertisement for Vocational Teachers

Wanted Vocational Teachers for Higher Secondary (vocational) School
We are looking for qualified and experienced Vocational teachers
Appointment will be on merit and No donation will be taken
Write with Bio-data
H-2-23 Anandnagar Apartment, New Vadaj, Ahmedabad-380013

APPENDIX 13b
Advertisement for Vocational Teachers
(in Gujarati)

જોઈએ છે વ્યવસાયલક્ષી શિક્ષકો

વ્યવસાયલક્ષી વિષય શિખવી શકે તેવા અનુભવી શિક્ષકો જોઈએ છે. પસંદગીનું ધોરણ લાયકાત, શિક્ષક તરીકેનો અનુભવ, ઔદ્યોગિક અનુભવ વગેરેને ધ્યાનમાં લઈને રાખવામાં આવેલ છે.

• ડોનેશન લેવામાં આવતું નથી. •

લખો : ગોવિંદ દેસાઈ, એચ-૨-૨૩, આનંદનગર એપાર્ટમેન્ટસ્, નવાવાડજ, અમદાવાદ-૩૮૦ ૦૧૩.