Vocational Education and Training Through Open Distance Learning : Challenges and Strategies
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ABSTRACT

In this paper, the need for skill training has been highlighted; and the National Institute of Open Schooling (NIOS) model of providing Vocational Education and Training (VET) has been presented. The challenges faced by VET have been briefly mentioned and some significant aspects of VET has been discussed. The paper presents in detail a project which is being carried out by NIOS in the State of Uttarakhand, to assess the vocational aptitude of learners. For this purpose four tests have been designed and developed viz., (1) General Awareness Test, (2) Mental Ability Test(Verbal), (3) Mental Ability Test (Non-verbal), and (4) Vocational Aptitude Test. These tests were administered on a pilot basis to a batch of six hundred students in Uttarakhand. The paper discusses the outcome of these tests and the methodology how the aptitude of the learner is identified and relevant vocational course is allotted scientifically keeping the ability, aptitude and interest in view, as obtained from the test.

The concerns and future strategies for providing VET to potential learners through appropriate technologies and innovations in curriculum and assessment as well as providing contextual learning and "Hands-on" experience and practical training under the guidance of master craftsmen has been discussed in the paper.

1. INTRODUCTION

1.1 When the Indian economy has been consistently growing at a robust rate over the past few years (9.1% in 2005-06 and 9.4% in 2006-07), coupled with rapid technological advances in the industry, the expected profile of the worker has also been rapidly changing. Further, the demand for knowledge worker is also being increasingly perceived. A survey conducted by the Federation of Indian Chamber of Commerce and Industry (FICCI-2007) reveals shortage of middle level skilled manpower. It is, therefore, felt that there is an urgent need to address this shortage by promoting skill development and for meeting the diverse needs of business and industry in terms of both quality and quantity and meeting requirements of industry.

1.2 This leads us to the realisation that there is a continuously increasing number of youth to be trained in marketable skills, so that they can be more employable (wage or self) and can stand on their own feet. The number of dropouts as well as out of school youth who need to be trained is much larger than the capacity of the formal system to cater to in the country. Therefore, the modality of training the youth in the different vocations through the modality of Open and Distance Learning (ODL) is an extremely significant alternative, and needs to be promoted and strengthened.

2. NATIONAL INSTITUTE OF OPEN SCHOOLING (NIOS) MODEL OF VOCATIONAL EDUCATION AND TRAINING (VET)

2.1 The National Open School (NOS) established in 1989, renamed as the National Institute of Open Schooling in the year 2002, is an autonomous organization under the Ministry of Human Resource Development, Government of India. NIOS is responsible for imparting education through open and distance mode from Primary to Senior Secondary level. It has the mandate for offering vocational education and training programmes to general and prioritized groups (Scheduled Castes, Schedule Tribes, women, rural people, neo-literates, disabled and disadvantaged groups of the society, etc.) through a network of its study-cum-training centres known as **Accredited Institutes (AIs).** The NIOS has a network of 11 Regional Centres and about 2067 study centres for programme delivery in academic areas through Open Learning and the Distance Education mode. For vocational education courses, about 1063 accredited vocational institutes (AVIs) are currently operational throughout the country. The

cumulative enrollment in VET during the last 5 years is 93,000. Of these approximately 56,000 have been certified, so far.

2.2 The Vocational Education courses of NIOS are offered at pre-secondary, secondary, senior secondary and post-senior secondary levels. The pre-secondary courses are more of the nature of exposure to the world of work. In addition, the vocational courses are offered as (i) Package Courses of Certificate and Diploma level which are of 1 or 2 years duration, (ii) Stand-alone courses are available in combination with other academic courses, (iii) Life enrichment (non credit) courses and, (iv) Six months certificate level courses.

3. STATUS OF VOCATIONAL EDUCATION AND TRAINING IN INDIA

3.1 In India Vocational Education and Training (VET) is delivered through a variety of government and non-government agencies, at central and state levels.

3.2 Under the centrally sponsored scheme of vocationalisation of education at the secondary level (1987-88), vocational courses in six major areas were introduced at the plus two level by the Government of India, Ministry of Human Resource Development (MHRD). At present more than 150 competency based vocational curriculum have been developed by the Central Institute of Vocational Education (CIVE) at Bhopal. The CIVE is a constituent of the National Council of Educational Research and Training (NCERT). These vocational courses have been introduced in about 6500 senior secondary schools at the plus two level.

4. CHALLENGES RELATED TO VET

The following main challenges confront vocational education in open schooling in terms of its clientele and outreach, its curricula and methodology, organization of teaching learning as well as learning materials, use of educational technology, examination and certification, methodology to recognize and quantify prior learning and to provide for greater articulation and alignment with the world of work and further learning.

a) Curriculum-related Challenges

b) Outreach-related Challenges

c) Methodology-related Challenges

d) Evaluation and certification related challenges

5. SIGNIFICANT ASPECTS AND ISSUES OF VET

5.1 Life Long Learning :

In the present scenario the learner prefers to do some modules and enter the world of work. When the adult learner wishes to do some more modules, the system provides for that.

5.2 Credit System and Certification :

NIOS has already prepared a number of modules in several vocational areas which provide sufficient flexibility to the learner. When a pre-determined number of modules is completed and required number of credits earned, a certificate / diploma is awarded by NIOS to the candidate.

NIOS has a system where credits are allowed for completing vocational course/module. The credits earned by the candidate are recorded and when more modules are completed, the credits are added to his previous score. Certificate/Diploma is awarded when required number of credits has been earned.

The transfer credit system provides the learner the much desired flexibility and allows the candidate to enter into or exit from the system as per his/her convenience.

5.3 Credit for Prior Learning :

Recognition of prior learning has an important place in any system of vocational education. Modular courses and the credit accumulation and transfer make it easier to implement it. A learner often comes to a course with some degree of prior competence or background knowledge relevant to the current programme of study. It is important to

recognise relevant knowledge or skills of learners and to assign them due number of credits for past experience in the given programme of study.

5.4 Quality Assurance :

The quality of the vocational training programmes needs to be ensured particularly in an open distance learning mode. In order to achieve this, the competencies desired to be acquired through practical work for each module are identified. The Personal Contact Programme (PCP) is then prescribed for a pre-determined number of hours at the work place and testing and certification is meticulously done jointly by the trainer from industry and NIOS.

Use of Information and Communication Technology (ICT) in Open Distance Learning(ODL).

The NIOS provides training to the learners through accredited vocational institutes. These AVIs need to use ICT with the 'human' teacher organizing and supplementing it.

6. ASSESSMENT OF VOCATIONAL APTITUDE OF LEARNERS : NIOS-UTTRAKHAND INITIATIVE

6.1 One of the significant aspects in this regard is to develop the full potential of the learner. The interest, aptitude and capacity of the learner need to be identified before giving the career choice/vocational choice to the candidate. The demand side of the vocation has to be determined by surveys separately.

6.2 As the population clusters in the hilly state of Uttrakhand are far flung and thinly populated with inhospitable terrain and difficult modes of transport, the programmes for such geographical areas need freedom and flexibility to a large extend.

6.3 Fifteen courses suited to the specific needs of Uttrakhand were identified. Facilities for implementating these are also available in the state.

6.4 The courses have some inherent characteristics and these have been identified and presented through a **tri-partite, bi-polar classification** which is as under :-

- Routine (A1) / Innovative (A2)
- Physical (B1) / Intellectual (B2)
- Repetitive (C1) / Creative (C2)

Table : Vocational Courses and their identified attributes

S. No.	Name of Course	Attributes of Course		
1.	House Wiring and Repair of Electrical Appliances	A1	B1	C1
2.	Welding Technology	A1	B1	C1
3.	Carpentry	A1	B1	C1
4.	Dress Designing	A2	B2	C2
5.	Computer Applications	A1	B2	C2
6.	Cutting, Tailoring and Dress Design	A2	B2	C1
7.	Electrical Technician	A1	B1	C1
8.	Desk Top Publishing	A2	B2	C2
9.	Security Services	A1	B1	C1
10.	Bee-keeping	A1	B1	C1
11.	Public Health	A1	B1	C1
12.	Food Preservation	A1	B1	C1
13.	Beauty Culture	A2	B2	C2
14.	Plumbing	A1	B1	C1
15.	Motor and Transformer Winding	A1	B1	C1

While allocating courses to aspirant candidates, the characteristics of the courses are proposed to be matched with those possessed by the candidates as identified through a specially developed aptitude test.

6.5 The Test Battery

In view of the criteria of different courses and for identifying the types of students possessing the most suitable aptitude (inherent capacities and potential) for pursuing them, the NIOS took up an elaborate exercise for constructing a battery of four tests.

The General Awareness Test has fifty multiple choice questions with four alternatives to be attempted in the thirty minutes. Of these, 25% of the question are specifically related to awareness about Uttrakhand. Each question carries one mark.

The Verbal Mental Ability Test consists of thirty multiple choice questions to be attempted in forty five minutes. 90 seconds are thus given for solving each of these questions.

The Non-verbal Mental Ability Test has thirty multiple choice question with diagrammatic alternatives. In view of the difficulty level the time required for answering the questions of this section, 90 minutes are given.

For the sake convenience, it was decided that all the tests of all the sections carried one mark.

The Vocational Aptitude Test contains sixty situational statements presented in clusters of three. Each statement has been classified as per the aforesaid tri-partite bi-polar classification possessing three characteristics. The students are required to mark the three statements in each cluster in respect of their liking viz., High liking, Average liking and Low liking. The time given for this test is thirty minutes.

6.6 Analysis of the Tests

The first three tests are supposed to yield scores as in any other tests. The scores on all the three after being totalled could be used for deciding the rank order of the candidates.

The vocational aptitude test on the other hand has been designed to yield scores in respect of the attributes such as routine / innovative, physical/intellectual, repetitive/creative activity, in regard to the highest or average or low liking categories. These scores could be used for allotting courses out of the available ones from the list of 15 courses at a centre. This is proposed to be done by tallying the characteristics of each of the 15 courses with the scores on different characteristics obtained by the candidate and matching the characteristics. Personal preference and prior experience are also taken into account in this regard.

It may not always be possible to allocate the course desired by the candidate and the one most suitable for him on the basis of the order of priorities determined by the test scores. In most cases, it will be attempted to allocate the vocational course for the characteristics which the candidate has shown preference in the best liked category. The second score on the Average liking areas will be used next and those related to the least-liked characteristics are proposed not to be considered

6.7 The Pilot Try out of the Tests

The tests was tried out on a pilot basis on candidates from different centres of Uttarakhand in two stages. In the first experiment the tests were administered to a batch of 30 students. On the basis of the feedback, the questions/test were modified.

In the second experiment, the coverage of students was 600 in Uttarakhand.

6.8 Conclusion :

This has been a maiden preliminary exercise about allocation of the courses to candidates on which they are likely to succeed better on the basis of the above analysis. The exercise has also brought to light some shortcomings in the process. For example, in the aptitude test, some candidates marked all the three activities as best liked in a cluster. This has brought to the fore the need for oral instructions, besides the written ones, before the students start to respond.

In allocating courses, it is proposed to give first priority to the scores of the best liked category. The second priority will be given to the average category. It is proposed not to consider scores on activities where candidate has marked “least interest”.

A Personal data sheet has also been developed for obtaining personal information about individual candidates. They were required to fill it before starting to attempt the test. A span of thirty minutes was given for this purpose before the start of the test.

7. CONCERNS, INITIATIVES AND FUTURE STRATEGIES

Further the following points are mentioned for the planning of future system :-

a) The wages of workers with qualifications beyond primary school have grown far more rapidly than those of workers with primary school or less; the steepest of increases being for workers with tertiary qualifications. Thus education and skill acquisition are important determinants of job and income prospects.

b) There is growing demand for workers with secondary education with technical/vocational skills.

c) Although the number of workers with some education has grown, the overall educational attainment remains low in absolute terms and in comparison to other countries, India has only marginally improved its performance in education. Although productivity has been increasing and education levels rising, still considerable ground needs to be covered to further improve the quality of education and training.

d) There is a general awareness among people for job oriented courses and ever increasing young learners are looking for new career paths in demand driven vocational education courses rather than pursuing degree courses which do not prepare them for a job in the world of work.

The organized public and private sectors employ only 11 per cent and the rest 89% of employment in India is in the informal sector, with employees working in relatively low productivity jobs. The country requires technical and skilled manpower particularly in view of the opening up of economy in recent years and thrust on liberalization and globalization. Development of appropriate skills may thus be an important intervention to increase the productivity of this workforce.

e) The vocational education and training system needs to be planned and established for a large number of youth who are looking for this. Some of the major issues/concerns are listed below :

   i. Identification of the beneficiary target group

   ii. Development of competency based modular curricula

   iii. Development of learning materials including print, non-print and e-learning materials

   iv. Establishing a delivery system through training providers

   v. Seeking and ensuring the support of industry/enterprise in providing internship/master craftsman for practical lessons, skill training/ contextual training in the workplace

   vi. Promoting the concept of life long-learning

   vii. Providing demand driven and not supply driven competency based modular courses with built-in flexibility for multi entry/exit, credit based system

   viii. Increasing the outreach, so as to cover an ever increasing number of educated/uneducated, employed / unemployed adult youth and provide relevant multi skill training and make them more employable

   ix. Designing and putting a well conceived quality assurance programme in place to ensure quality in skill training

x. Developing national standards for competency based certification

xi. Certification at the national level using performance tests or competency testing involving user agency.

xii. Developing a Management Information System (MIS) for continuous monitoring and feedback

xiii. Ensuring research based decision-making by educational planners and administrators

xiv. Developing a mechanism to continually survey the economic sector for economic development and technological development and assessing the requirement of skilled manpower in the economic sector, and provide the curriculum developers with the basic data to work on

xv. Develop suitable learning materials for learners both print as well as non-print.

xvi. Encourage increasing use of Information and Communication Technology(ICT) and provide on line learning to learners in difficult to reach areas.