

LEARNER'S SATISFACTION: A CASE STUDY ON IGNOU'S ENGINEERING DIPLOMA PROGRAM

Dr. Neelam VENKATESHWARLU
Mechanical Engineering School Engineering and Technology
Indira Gandhi National Open University, New Delhi, India

Dr. Ashish AGARWAL
Mechanical Engineering School Engineering and Technology
Indira Gandhi National Open University, New Delhi, India

ABSTRACT

Open and Distance Learning (ODL) system is different from conventional education system. ODL system imparts education through multiple media and techniques to equalize the class room education. Unlike the conventional system, the distant learners (students, adults, employed persons, etc.) may face some problems during their course of study. In this paper authors discuss various problems faced by the ODL learners and propose some good practices to enhance the learner's satisfaction level. The paper further describes the importance of Engineering programs offered through ODL for working technicians (ITI certificate holders) and working technical supervisors (Engineering Diploma holders). It also talks about the career opportunities and promotion aspects after the completion of their respective programs.

Keywords: Open and Distance Learning, Working People Education, Engineering Education

INTRODUCTION

Education is a lifelong learning process to gain the knowledge and skills in competitive sense. ODL system is a good opportunity for lifelong learning process. Because in the formal education system, compulsory component of attending classes deprived the working people, who are interested in lifelong learning. ODL system tries to reach the doorsteps of the learners, by devising various means of learning tools and techniques, such as study materials, study centers with world class facilities including libraries, internet, etc. ODL system's most important characteristic is its flexibility of learning that is learner can learn at home, at office, during travel, at leisure times and the weekend classes conducted at study centers. There is a more flexibility in ODL system, for example, if any learner joins in any program of 3 years duration (i.e Diploma in Mechanical Engineering) and due to unavoidable circumstances, he was forced to discontinue the program for 2 years, and later he wants to join then after permission he will be given a chance to complete his Diploma in ODL system. With all these types of flexibilities the ODL system motivates the learners to complete their Diplomas and Degrees in maximum duration time which are lacking in conventional system of education. ODL system plays vital role in providing educational opportunities for the employed learners as well as to the learners who wants to enhance their educational knowledge and capabilities up to date. In India and abroad the importance of ODL system is

increasing due to its diversified and flexible learning methodologies. ODL system has more flexibility in adapting technologies, methods for efficient conduction of knowledge transformation. For example adaption of ICT's in ODL played a pivotal role in providing Audio/Video program, virtual and augmented laboratories etc; to the learners at extensive support. Now a days MOOC's is providing various courses through on online learning methodology, where students can enroll for a program or for a course, listen the classes, write the assignments, exams and get the results and certification through online only. This is nothing but new technology mediated learning of ODL system. In the present paper an attempt has been made to analyze the level of satisfaction among students enrolled in Diploma in Mechanical Engineering (DME).

LITERATURE REVIEW

From the literature it has been observed that there is a tremendous scope for distance education in engineering and technology provided designing and development of industry need based programs and maintaining quality in delivery of educational services or support services in terms of open and distance learning. According to Rama Chandra & Moni Sahay (2008) maintaining quality of education through the distance mode is always a challenge. Quality of design, quality of services, quality of ICTs in ODL and quality of technologies utilized in distance education plays a vital role in imparting quality education to the employed learners, adult learners and lifelong learners. According to Anil K. Dimri (2015) ODL mode of learning is highly suitable to the diversified socio-economic, geo-physical and ethno-cultural condition of India to provide opportunities to bureaucrats, technocrats, corporate professionals to enhance their skill and knowledge while working. S.Raja Rao (2008) expressed his views that the different types of media and communication technologies play a vital role in democratizing education, reaching more people and places while maintaining the quality. Here the distance education providers should take initiatives to improve the quality of distance education continuously by giving more importance to research in distance education as well as training and developing the teachers in updated ICTs utilized for distance education.

There are different approaches to improve the quality in education, distance education and technical education. Roma Mitra Debnath & Ravi Shankar (2012) suggested two major approaches to quality improvement, such as quality assurance and quality enhancement. Once the distance educators implement these two approaches in their education system continuously, the learner satisfaction level will be increased. The student satisfaction is one of the challenges for the distance educators. To understand the students satisfaction in the distance education programs, there are different methodologies available such as questionnaire feedback and interview methodologies. Highest student satisfaction can be achieved through initiatives taken by the educational universities, educational institutes and government policies on educational quality improvement. Recently Jharkhand State Chief Minister Hemant Soren (2014) has taken initiatives to improving the quality of education in the state. The research conducted by Romadhani Ardi et al. (2012) utilized "students satisfaction" as the predictor of successful TQM implementation in higher educational institutes in Indonesia. Santosh Panda (2011) expressed his views about the present change taking place on the ODL system due to fast developments of ICT's and its implementation.

Francis Glasgow (2011) conducted need assessment studies in ODL system to know the demand of the various programs and courses, which are essential for self-development, community development, skill development, management development etc; for employed people or adult learners. This study suggested that technical and vocational courses are very much essential for community development. Sushmita Mitra (2010) discussed about model

of partnership in ODL education and its impact on the open schooling performance in India. It was also suggested that partnerships in ODL system will have numerous advantages like workloads can be shared, avoiding duplication work and cost savings and effective new technology implementation etc. Therefore partnerships in ODL education system should be encouraged and strictly implemented. A Mishra et al (2010) conducted a research study on evaluation of students support services in ODL education system and suggested that increased face to face interaction of counselors, regional center staff and study center staff with students may satisfy the learners and also enhances the passing percentage. According to Agolla J. Evans et al; (2011), many higher learning institutions have embraced the quality as the only panacea to student's satisfaction. Murugan Krishnan Pillai (2011) discussed about quality development in learner support services to enhance the student satisfaction and suggested that the ODL institutions should identify their quality indicators and best practice them to improve the quality of support services, which will enhance the student's satisfaction level and quality standards of ODL institutions.

In this context this paper is also focusing on student satisfaction as one of the following objectives:

- to provide awareness about successful conduction of engineering programs through distance education
- to provide awareness about importance of ODL engineering programs for employed persons or adult learners
- to understand about promotional aspects of employed engineering learners
- to understand about the need of the engineering programs through distance mode
- to provide information about learners satisfaction after successful completion of Diploma in Mechanical Engineering (DME) program from SOET, IGNOU and
- to provide awareness about ODL learners problems which they face after joining ODL engineering programs etc.

CASE STUDY ON DIPLOMA IN MECHANICAL ENGINEERING AT IGNOU

IGNOU has planned employment related Diploma Engineering Programs for Technical ITI holders and are employed in Manufacturing Sector. In Engineering and Technology areas, the University has planned to develop employment related continuing education programs aiming at increased job potential and economic advantage for the learner. Towards this, the University has identified the manpower training needs of employment sector and has launched *three years Diploma in Mechanical Engineering*. After successfully completion of the program, the learner will get *Diploma in Mechanical Engineering (DME)*. *The DME program* is designed to provide training and continuing education and professional knowledge appropriate for upgrading the ITI level manpower engaged in managing Mechanical/Production/Automobiles tasks.

In concrete terms, the University proposes to identify specific areas in Engineering and Technology for program development in consultation with employing agencies at central and state levels including Governmental, Public and Private Sector organizations and Professional Bodies, so as to reflect in the curriculum design, the functional education and training needs of the targeted learner group at the workplace. Subsequently, the University visualizes that these and such other industrial organizations and professional Bodies and their professionals and experts will participate with the University in the tasks of preparation of instructional material for such functional curriculum as also in its implementation, thereby making the program preparation and implementation endeavor a participative outcome between the University and industry. The methodology of instruction in this University is different from that of the conventional universities. The Open University system is more learner-oriented,

as the student is an active participant in the teaching and learning process. Most of the instruction is imparted through distance rather than face-to-face communication. The university follows a multimedia approach for instruction. It comprises:

- **Written Material:** The written material for both theory and practical components of the program is supplied to the students in batches of blocks for every course booklet comprises 3 to 5 units.
- **Audio-Visual Material Aids:** The learning package contains audio and video cassettes which have been produced by the University for better clarification and enhancement of understanding of the course material given to the student. A video program is normally of 25-30 minutes duration. The audio tapes are run and video cassettes are screened at the study centers during the hours of the counseling session.
- **Counseling Sessions:** Normally counseling sessions are held as per a schedule drawn beforehand by the Coordinator. They are held on week-ends, that is to say, Saturday and Sunday of the week. There will be a minimum of 10 counseling sessions of 2 hours duration for each course (20 hours for each course on an average) of the program devoted to theoretical aspects.
- **Teleconferencing and EDUSAT Lecturers:** Some of the lecturers will be telecast through teleconferences and some will be telecast through interactive EDUSAT lecture sessions.

The Study Centre will organize counseling sessions for all courses of study. Here, students can take help from the counselors in their study. The counselor will also organize sessions on audio-video programs.

Importance of Engineering Programs through ODL

Since 1994, SOET, IGNOU was running its Engineering Degree and Diploma programs successfully by identifying recognized engineering colleges as its study centers for conducting theory and practical classes during weekends and holidays. More than 3000 learners (working people) have successfully completed their degrees and diplomas in engineering. And most of these learners have got their promotions and increments in their existing industries. This is one of the life satisfaction components for any individual who achieves in his life and who gets full satisfaction.

First of all one should understand about the intake eligibility of learners. The eligibility for Diploma in Mechanical engineering programs is 10th + ITI pass in any trade and should be employed (working people only). As the working people regularly remain in touch with construction of buildings, working on machines, instruments, measurements, quality aspects, tools, techniques, methods, improvements, drawings, materials etc., they can easily understand the concepts, theories, practical problems and various techniques to solve the problems. It is also very advantageous that the employed persons will show much interest in completing their courses, because of the rewards they get in terms of promotions and increments. Also, another advantage with ODL system for the employed persons is that, new employment to the learners is not needed, because they are already working people.

Distance education universities and institutes have their own world class infrastructural facilities such as university campus, regional centers, evaluation centers and study centers, etc. For Diploma in Mechanical Engineering program the study centers are Govt. & Private Polytechnics, where the theory and practical classes will be conducted during holidays and weekends.

Opportunities and Learning Management System in ODL

Employed people, who want to improve their educational qualifications, ODL system is the most viable alternative method of study. If the working people complete any diploma in engineering, they will get rewards in terms of increments and promotions in their existing jobs. Therefore the working people get satisfied and those who satisfied will work more enthusiastically which leads to productivity improvement and management satisfaction. In this way, the ODL system provides the better opportunities for those who want to improve their educational qualifications while working. The opportunities and learning management system in ODL is shown in Figure 1. The ODL systems never compromise with quality of education.

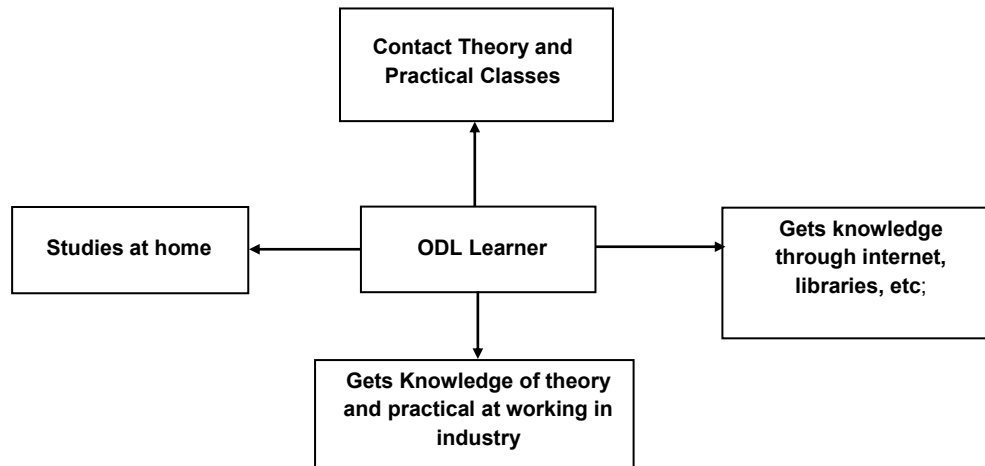


Figure: 1
ODL Learning Management System

There is a positive correlation between educational qualifications up-gradation and gaining promotions in the existing employment. The relationship between educational qualification improvement and gaining promotion is as shown in Figure 2 and Figure 3.

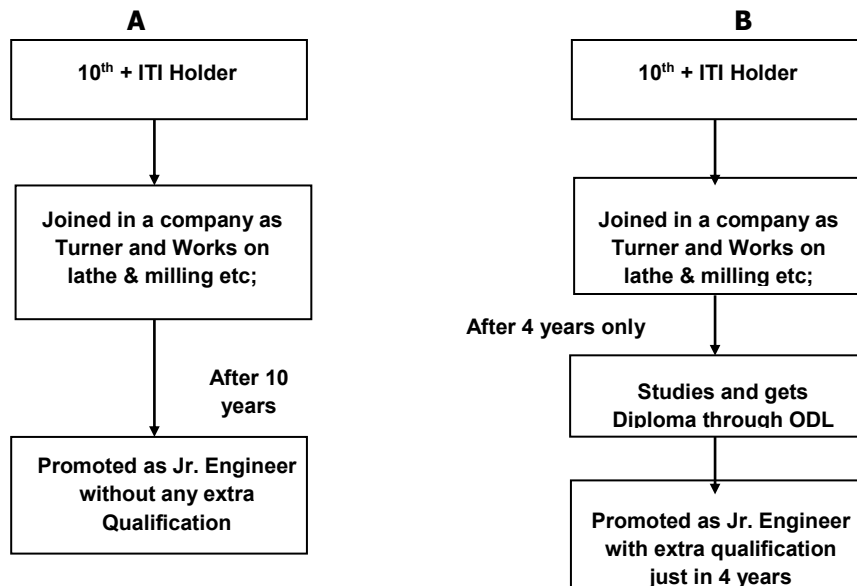


Figure: 2
Comparison of Promotions in the Industries for ITI holders (Technicians)

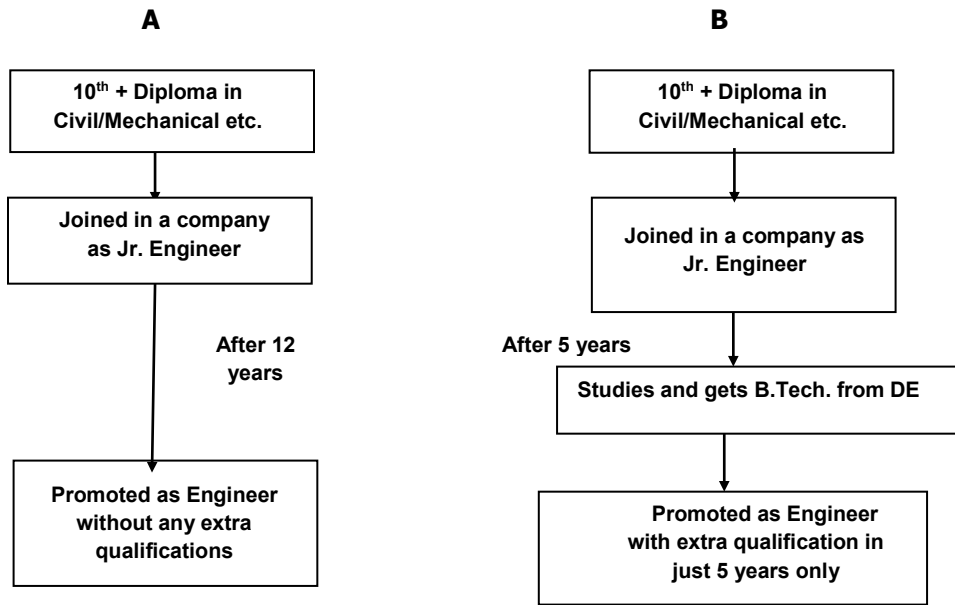


Figure: 3
Comparison of Promotions in the Industries for Diploma holders (Jr. Engineers)

As shown in above Figures 2 and 3, you may observe Figure A and Figure B the differences in promotional aspects in the industries encourage the working people to join in ODL universities to improve their educational qualifications. Please keenly observe the differences, in figure 2, an ITI holder will get his promotion after 10 years without any extra qualification (figure 2A), but an ITI holder will get his promotion after 4 years only with an extra diploma qualification through ODL mode (figure 2B).

Problems Faced by the ODL Learners

The ODL learners (students) may face so many problems when they join in ODL learning program due to various reasons. The following main problems have been observed since three years from the students of Diploma in Mechanical Engineering (DME) program of IGNOU.

- Irregularity in receipts of study materials for some courses
- Delay in conduction of practical courses at some study centers
- Non-conduction of project viva at some regional centers
- Delay in up-dating assignment and practical marks in the grade cards

ODL educators should concentrate on services required by the learners, so that the problems are minimized and the satisfaction level is maximized. In order to know about the satisfaction level of the students of DME program of IGNOU, a feedback analysis is conducted. A small questionnaire has been developed and sent to the students of DME program. The population size of DME students is first batch of throughout India and the population is around 500 students and sample size taken is taken randomly 100 students.

The feedback analysis on questionnaire is as follows:

- To gauge the level of satisfaction among the students of DME, an interview was conducted with the passed out students. On the basis of their feedback, following hypotheses have been formulated:

Hypotheses Formulation

The hypotheses for the present study are formulated as follows:

H1: Student's satisfaction level is influenced by support services provided by ODL University

H2: The timely communication received from the program coordinator affects the level of student satisfaction.

Questionnaire Analysis

A research questionnaire was developed to know the opinion of the Diploma in Mechanical Engineering (DME) students of the SOET, IGNOU about performance of DME program and its post study effectiveness on the student career advancement in promotions and other financial benefits gained. The questionnaire was developed on a five-point Likert scale. The students were asked to just tick mark on the five-point Likert scale. The 100 number of questionnaires have been sent to the students of DME program and all these students were selected on the basis of their academic performance. About 58 filled-in questionnaire feedbacks are received and accepted because they have filled all the questions with care. Few students have even proposed some more extra suggestions also. The analysis of the questionnaire is as follows:

Quality of Study Materials Provided by IGNOU

The study materials designed for Diploma in Mechanical Engineering (DME) was rated by the students as excellent (67%), Very good (17%) and Good (12%) which implies that study materials have achieved the higher student satisfaction level. The percentages are shown in Figure 4.

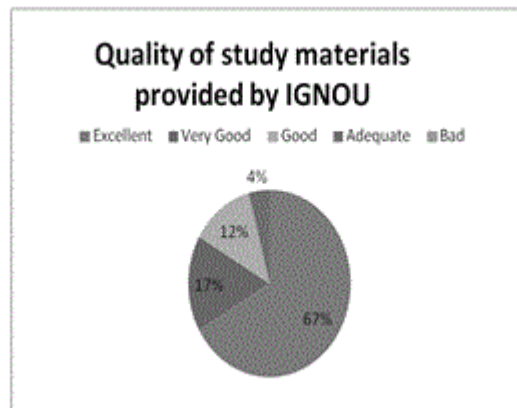


Figure: 4
Students Rating about DME Materials

Timely Counseling of Theory Classes Conducted at Study Center

The timely counseling of theory classes conducted at study center for Diploma in Mechanical Engineering (DME) was rated by the students as excellent (62%), Very good (25%) and Good (13%) which implies our counseling classes achieved the higher student satisfaction level. The percentages are shown in Figure 5.

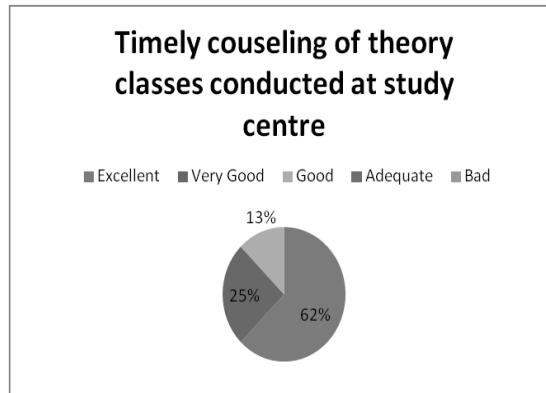


Figure: 5
Student satisfaction

Timely Counseling of Practical Classes Conducted at Study Center

The timely counseling of practical classes conducted at study centers for Diploma in Mechanical Engineering (DME) was rated by the students as excellent (58%), Very good (12%), Good (17%) and Adequate (13%). That means our practical counseling classes conduction is achieved the higher student satisfaction level. The percentages are shown in Figure 6.

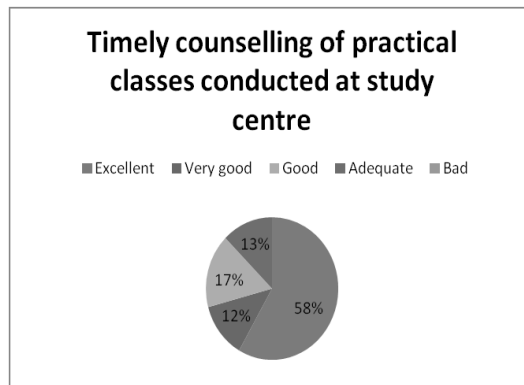


Figure: 6
Timely Counseling of Practical Classes Conducted at Study Centers

Here one may observe that the support services provided by IGNOU to DME students is very good as per above analysis and their satisfaction is very high. Therefore the Hypothesis H1: There is a positive correlation between effective support services provided by ODL universities and student's satisfaction level is accepted.

Communication from DME Program Coordinator

The communication from Diploma in Mechanical Engineering (DME) program coordinator was rated by the students as excellent (75%), Very good (9%), Good (8%), Adequate (4%) and Bad (4%) which implies communication from DME program coordinator has achieved the highest student satisfaction level. The percentages are shown in Figure 7.

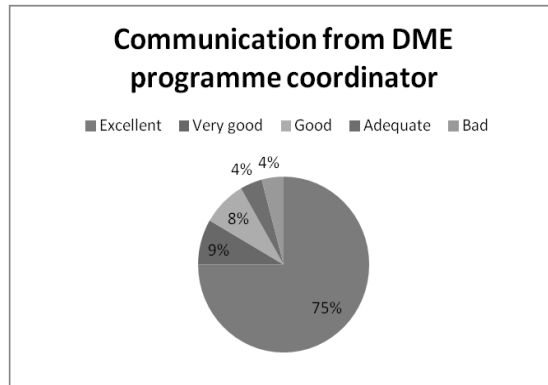


Figure: 7
Communication from DME Program Coordinator

Here it is observed that the effective communication received from the program coordinator is very well and the student satisfaction level is very high. Therefore the Hypothesis, H2: There is a positive correlation between the effective communication received from the program coordinator and student satisfaction level is accepted.

Chance of Getting Promotion after Completing DME Program

The chance of getting promotion after completing Diploma in Mechanical Engineering (DME) program was rated by the students as excellent (42%), Very good (46%) and Good (12%) which means the DME program is having high value in the industry and society. The percentages are shown in Figure 8.

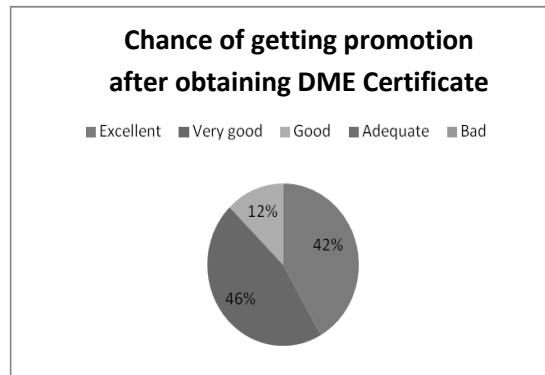


Figure: 8
Chance of Getting Promotion after Obtaining DME Certificate

Chance of Getting Increment after Obtaining DME Certificate

The chance of getting increment after completing Diploma in Mechanical Engineering (DME) program was rated by the students as Excellent (25%), Very good (33%), Good (25%) and Adequate (17%) that means the DME program is having high value in the industry and gives weightage in their promotion policy. The percentages are shown in Figure 9.

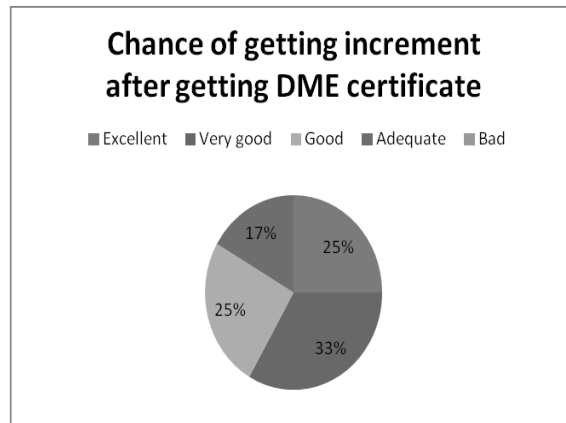


Figure: 9
Chance of Getting Increment after Obtaining DME Certificate.

Overall Perception of Students about the DME Program

Most of the students have given positive feedback on DME program of SOET, IGNOU. Only one student out of 58 gave a negative feedback. With these feedbacks, it is observed that our DME program performance is very good. The ODL system is not only helps the learners to upgrade their knowledge but also opens up promotions and increments in the companies where they are working. Most of them also want to pursue further studies if any from SOET, IGNOU.

Significance of this Study

With this study it is understood that the demand for engineering diploma program through distance mode is high. By designing and developing need based engineering diploma programs through ODL mode is very much helpful to the students as well industry. The paper also observes that most of the learners are highly motivated for learning while earning. The study indicates high satisfaction rate of learners about delivery of this program to gain full-fledged knowledge in the specific field. The students after getting this engineering diploma program certificate are highly motivated through gaining promotions in their jobs. This is an excellent recognition for IGNOU engineering diploma program. IGNOU engineering diploma students are getting promotions through participating in their competitive examinations. This is because of excellent design of course curriculum and innovative approaches in reaching and teaching the employed learners. By analyzing feedback results, it is understood that IGNOU's innovative approach in designing, developing and delivery of program is excellent and student's satisfaction level is delightful. Through this study it is understood that adopting innovative approaches in understanding the needs of industry and the learners is very much important for the ODL system. Therefore it is very much essential to understand the needs of the industry and learners, while designing and developing need based engineering diploma programs through ODL mode.

CONCLUSION

In the present paper, learner satisfaction is analyzed for IGNOU students of engineering diploma programs. Various problems faced by the students have been identified by conducting interview with selected students. A student who encounters any problem as

above immediately contacts the program coordinator on phone. With the received phone calls only, it is observed that the above problems are categorized as main problems; if these problems are solved most of the students expressed their satisfaction. Therefore it is observed that the ODL educators should plan their activities in totality to satisfy the learners. The following activities are to be carried out in a systematic manner to the satisfaction of the learners in order to make the programs successful.

- Proper designing of program structure and course curriculum
- Study materials should be developed in advance
- Closely controlling and maintenance of study center activities
- Timely up-dating assignment marks and term end marks in the grade cards
- Proper and effective communication between headquarters and regional centers
- Effective communication between RC's, SED, MPDD, RSD and SRD in advance in respect of launching of a program, program modules and methodologies
- In order to reduce the communication gap the orientation program should be conducted in all the RCs in scheduled manner
- Regular feedback from students about the following:
 - Timely receipts of materials
 - Regularity in counseling classes
 - Timely dispatch of assignment marks to SED etc.

In this paper authors carried out research on the need of the educational qualification enhancement, problems faced by the ODL learners (employed students) and the satisfaction after getting the higher education through ODL mode of education. In this paper authors gather the data through questionnaire and analyzed using the Microsoft excel. It is observed that there is a higher demand for educational enhancement from the technical employed people for gaining updated knowledge as well as higher level promotions in the existing jobs. It is understood that working technicians (ITI certificate holders) and working junior engineers (Technical Diploma holders) are highly satisfied with the quality of curriculum and services provided by ODL universities and institutes who were offering technical ODL programs. It is concluded that there will be higher demand in the future for the technical education through ODL mode of education for working people provided that the quality curriculum and support services are developed by the universities.

BIODATA and CONTACT ADDRESSES of the AUTHORS



Dr. Neelam VENKATESHWARLU Associate Professor Mechanical Engineering School Engineering and Technology Indira Gandhi National Open University New Delhi India has more than twenty years of experience in teaching. His area of interest is Production Management, Total Quality Management, Education Technology etc. His research papers appeared in National and International Journals.

Dr. Neelam VENKATESHWARLU
Mechanical Engineering School Engineering and Technology
Indira Gandhi National Open University New Delhi India
Phone: +91-11-29572918
Mobile: +91-8826655368
Email: nvenkateshwarlu2008@ignou.ac.in



Dr. Ashish AGARWAL Associate Professor Mechanical Engineering School Engineering and Technology Indira Gandhi National Open University New Delhi India has more than twenty years of experience in teaching. His area of interest is Production Management, Supply Chain Management, Total Quality Management, Education Technology and Project Management. His research papers appeared in European Journal of Operational Research, Industrial Marketing Management, International Journal of Productivity and Performance Measurement etc.

Dr. Ashish AGARWAL
Mechanical Engineering School Engineering and Technology
Indira Gandhi National Open University New Delhi India
Phone: +91-11-29572922
Mobile: +91-9868225927
Email: ashisha@ignou.ac.in

REFERENCES

- Ardi, R., Hidayatno, A. & Zagloel, T. Y. M. (2012). Investigating relationships among quality dimensions in higher education. *Quality Assurance in Education*, (20)4, 408-428.
- Chandra, R. & Sahay M. (2008). Quality issues in IGNOU's BCA and MCA projects: A case study of Regional Centre, Patna. *Indian Journal of Open Learning*, 17(2), 145-153.
- Debnath R. M. & Shankar R. (2012). Improving service quality in technical education: Use of interpretive structural modeling. *Quality Assurance in Education*, (20) 4, 387-407.
- Dimri, A. K. (2015). Mechanism of F2F student support in open and distance learning system: Indian experience, *Turkish Online Journal of Distance Education*, 16(3), 61-73.
- Evans, A.J., Brian, M. & Oladeji, K. I. (2011). Impact of organizational resources on quality of services in distance and open learning in Botswana. *Indian Journal of Open Learning*, 20(3), 163-178.
- Glasgow, F. (2011). Needs assessment in open and distance learning (ODL): Case of the Institute of distance and continuing education (IDCE), University of Guyana. *Indian Journal of Open Learning*, 20(1), 15-30.
- Hemant, S. (2014). Initiatives to improving the quality of education. *Times of India*, January 25, p. 23.
- Krishnapillai, M. (2011). Learners support services at state open universities in India: Quality matters. *Indian Journal of Open Learning*, 20(1), 31-40.
- Mishra, A., Vijayshri, V. & Garg, S. C. (2010). Undergraduate physics programme of IGNOU: Evaluation of student support services. *Indian Journal of Open Learning*, 19(3), 159-181.
- Mitra, S. (2010). Model of partnerships in education: The case of National Institute of Open Schooling, India. *Indian Journal Open Learning*, 19(2), 87-96.
- Panda, S. (2011). Distance education in international contexts: Planning and management imperative. *Indian Journal of Open Learning*, 20(1), 3-14.
- Rao, S. R. (2008). Access, Awareness and use of media support services: Strategies to make them popular with the learners. *Indian Journal of Open Learning*, 17(2), 163-173.