Unit–9

INNOVATIONS IN HIGHER EDUCATION

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Introduction

In the present era of knowledge driven economy, role of higher education has become even more critical. In every society, higher education institutions are trying to improve their quality to perform their role in knowledge generation and knowledge dissemination. Over the period of time, higher education system across the globe embraced many innovations. Alternative models for example distance and non formal education became widely accepted and use of these models in higher education sector became very popular. Technological innovations played a significant role in reshaping higher education systems and strategies. Technology integration in development, design and delivery of higher education is at the heart of all higher education policies and plans. In order to improve quality of teaching at higher education level, it has been felt to align teaching strategies with the learning styles of students. Moreover to cope with the trends and issues of the recent time, lifelong learning has become a major area of concern and efforts are being made to provide opportunities for lifelong learning. This unit deals with all these innovations in the systems of higher education.

Objectives

After studying this unit, prospective teachers will be able to:

- critically discuss the role of distance and non formal education in expansion and development of higher education
- analyze the implications of Learning styles of students for effectiveness of higher education.
- explain the need and scope of technological innovations in the sector of higher education
- suggest ways to integrate and make best use of technology in teaching and learning at higher level
- discuss the nature, concept and ways of continuing education and lifelong learning

9.1 Distance and Non Formal Education

In literature, unconventional education systems are frequently mentioned as “open systems”, “non-formal education”, “distance learning”, “non-conventional education” etc. Mostly these terms are employed as synonyms making it confusing and impractical to reach to a certain consensus. A brief but comprehensive definition of each of these concepts is necessary. We will try to analyze the concept and nature of formal, informal and non-formal education systems in order to clarify their salient features, implications and limitations as well as interrelationship among these systems..

9.1.1 Formal Education

Formal education system refers to an organized and systematic system that is structured and administered in accordance with the pre-specified set of policies, rules and laws. The system is systemic and organized in terms of objectives, curriculum and instructional methods that essentially involve a teacher, students and the institution itself. Formal education systems are based upon group needs rather than individualized needs and the content.

9.1.2 Non-Formal Education

As the system of formal education has a specified set of norms and features. Whenever in any system one or more of those features are is absent, we can name that system of education being non- formal. As a result defining non formal education system is particularly difficult. There are numerous definitions of non-formal education, one of the most popular definitions is the one proposed by Coombs, Prosser and Ahmed in 1973. This definition consigns Non Formal Education a unique position in the educational world and is considered the classic definition.

“ ... formal education ... (is) the institutionalised, chronologically graded and hierarchically structured education system, running from lower primary school to the upper reaches of the university, generally full time and sanctioned by the state; non-formal education ... (comprises) all educational activities organised outside the formal system and designed to serve identifiable clientele and educational objectives ... with all remaining educational activities being categorised as informal education ... (is) the lifelong process by which every person acquires and accumulates knowledge, skills, attitudes and insights from daily experience and exposure to the environment...” Coombs, Prosser and Ahmed (1973)

For Further Reading:
Spronk. B (2010) ‘Non Formal Education At A Distance: A Framework For Discussion.’ Available at http://www.assonur.org/sito/files/non%20formal%20education%20at%20a%20distance.pdf

Non formal system of education basically dwells in the central position between the conventional or formal education and informal learning experiences, without exclusively

obvious boundaries. Non-formal education occurs when the educational strategy does not require students' attendance, lessening the contact between students and teacher and most of the learning activities take place outside the institution - as for example, home reading and assignments etc.

In view of its scope it can be said that non-formal education is comprised of many diverse educational scenarios, many of these scenarios played a significant role in reshaping and renewing educational systems. Three major educative processes under the umbrella of non-formal education are "**correspondence learning**", "**distance learning**" and "**open systems**.

9.1.3 Informal Education

Informal system of education is relatively different from formal education system and, predominantly, from non-formal system of education. This System of education is not regarded as a systematic and organized system and does not essentially consist of the educational objectives and subjects that are part of traditional curriculum. There is generally no control over the activities that provide learning experiences, as a result informal education is not meant to provide degrees or certificates.

Informal education includes numerous activities for example visiting some museums or exhibits (b) reading magazines, journals and newspapers (c) listening radio broadcasts or watching TV programs (d) attending seminars, lectures and conferences.

9.1.4 Distance Education

Distance education system is one of the core types of non-formal education. This system of education refers to an educational process characterized by distance between the teacher and the learners. In other words all or most of the teaching learning activities are happing with presence of distance between the teacher and the learner. Teaching is being conducted by a person separated in space and/or time from the learners. During this teaching learning process communication between learners and the teacher occurs through some artificial medium of communication that can be either electronic, print or the both.

Michael Moore has defined distance education system as "the family of instructional methods in which the teaching behaviours are executed apart from the learning behaviours including those that in a contiguous situation would be performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices".

'Providing education at a distance' is the simplest definition of this concept. It can vary in is forms. In late 1800s distance education was through correspondence courses. Today distance education is provided through technology- e-learning, virtual education or online education are basically the methods of teaching under distance education where the learners and teacher are separated by space, time or both.

Distance education as defined by The US Department of Education is "the delivery of instruction over a distance to individuals located in one or more venues." National Education Association (NEA) has defined distance education in these words "courses where more than half of the instruction taking place is when students and faculty are in different locations."

9.1.5 Advantages and Limitations of Distance Education?

Currently, an extensive literature is available to justify that formal and conventional systems of education have proved to be inadequate and ineffective to cater the needs of individuals as well as of societies. There is a increasing demand for more and better options of education at all levels. Educational needs of a large number of people, mainly in the developing countries calls for the expansion of distance and non formal education.

Like every educational system, distance education system has certain pros and cons. However many experts agreed upon and sufficient empirical evidences are there to prove that the advantages associated with distance education system are much greater as compared to the limitations of this system.

Followings are some of the advantages of this system of education:

Flexibility: The key advantage of distance education is its flexible nature. Distance education provides opportunities for people who may have difficulty in attending a formal institution like mothers, professionals, and individuals working full time as well as members of certain organizations. Most of the distance education programs allow studying people at their own place, at least for most of the time so they can easily fit their education into their schedule. Flexible nature of distance education programs give chance of continuing education without effecting or disturbing personal or professional life of a student.

Convenience: The most important benefit of distance education is that an individual can easily pursue his/her education during any time of life. There are no restrictions on the basis of age, locale etc. A person can study from anywhere he/she lives, if choosing for distance education programs. As a result options for education are greatly expanded.

Affordability: Distance education programs are economical both in terms of money and time. Not only the fee structures are not much high but it allows saving money by many other ways like no commuting etc. These programs do not necessitate for regular classes that saves time in commuting as well.

Self- Paced Learning: Distance education programs allow a student to study at his/her own choice and with his/her own pace. Students can complete their studies at their own time and pace. As there are no regular classes, students can complete the course at their own pace. Studying at their own pace and convenience reduces stress and enhances learning.

Learning while working: Distance education courses/ programs can easily be done on learners schedule, this gives learners the opportunity to continue education without sacrificing his/her job. Distance education programs can be much more easily completed while working as compared to formal or traditional educational programs. This is a great advantage from another angle as well continuing a job while completing education gives you more stability, financial assistance and experience and you do not need to worry about these things resulting in more efforts and focus towards studies.

Considering all the above mentioned and many more benefits of distance education programs, one may feel uncertain whether this system of education has some disadvantages as well. There are certainly some limitations of this system as well.

Less Interaction: Distance education system is usually characterized by less interaction between teacher and students and among students as well. In distance education system, there is little communication with the classmates and as a result working in groups or group study becomes difficult, one student just has to do by himself/herself which sometime has adverse effects on learning. Fewer chances of interaction and oral communication with teacher lead towards misconceptions and confusions creating hurdles for effective learning. Although now with the help of information and communication technology more chances for communication and interaction are there like use of emails, discussion boards, online chat and conferencing etc. Role of communication and interaction is inevitable for effective learning and considering the significance of interactions for developing collaborative skills and critical thinking, most of the distance education programs now offer e communication opportunities like online forums, chat rooms and discussion boards etc. Though, as a matter of fact it is only a partial substitute for real classroom interactions.

Challenges of Technology and accessibility. Although distance education programs provide good opportunities to learn and use latest technologies but use of technologies have its own challenges. It becomes a real challenge for people not good users of technology. An electronic gadget like personal computer with good Internet facility will be required for establishing and maintaining interactions in distance education programs. Moreover it requires careful planning and involves huge costs to set up for tools and facilities like live video communications particularly for high tech distance education programs.

Cost Effectiveness: Distance education programs may be more cost effective for students but not on the part of institutions. Institutions offering distance education programs can save money on physical infrastructure. But, to start up a high-tech distance education program would be expensive as well and technological infrastructure can cost even more as compared to physical infrastructure. Moreover the cost for continuous updating, development of new materials and providing latest technology would involve a lot of cost.

No Immediate Feedback: Distance education programs do not involve regular classroom interaction as a result a student cannot get the feedback immediately. Distance learners have to wait for their teacher's feedback after they have done with reviewing the task. This format of delayed feedback is not suitable to for all learners.

Need for adaptability to new technologies. Individuals who are not technology friendly may find it difficult and challenging to adapt to new technologies. Communication without latest technologies in distance education is not possible so the system suits to those who like to use and be up dated in technology.

Despite many challenges and issues distance education particularly in the context of higher education has an indispensable role to play and without distance education programs expansion of higher education is out of question. Moreover the inflexible structure of formal schools, mainly based on strict laws and regulations rather than the needs of learners; obeying a rigid set of clerical-administrative procedures, has proved to be insufficient to meet individual as well as social needs. Non-formal and distance education provides a best alternative to those who for some or the other reason do not adopt formal education system and thus it plays a unique role in promotion and expansion of higher education in a society.

Activity:

Conduct interview of 3-5 students enrolled in some distance education program and explore their perceptions about these programs and the challanges they are facing.

For Further Reading

Shlomo Romi (2010) Distance Learning and Non-formal Education: Existing Trends and New Possibilities of Distance Learning Experiences, Educational Media International, 37:1, 39-44, DOI: 10.1080/095239800361509

9.2 Learning Styles at Higher Education

Learning is a complex phenomenon and for centuries researches, educationists and psychologists are attempting to explore different dimensions and perspectives of this phenomenon. In this context, emergence of the construct of learning styles proved to be a major hallmark as people accepted the idea that learning style is one of the major determinants of the way one learns so the idea gained a lot of attention by researchers, educationists and the general public.

9.2.1 Concept and Nature of Learning Styles

The term 'learning styles' has been used extensively in education, pedagogy and psychology since 1930. But interestingly defining learning style is not as simple as it seems and many theorists defined the concept in different ways. Generally the term learning style refers to the specific way in which an individual learns. However as

researchers and theorists have focused on diverse aspects of learning styles, a wide variety of interpretations and definitions has been proposed. For example Della-Dora and Blanchard viewed learning styles as (1979, p22) "a personally preferred way of dealing with information and experiences for learning that crosses content areas", they emphasized on the aspect of information processing. In contrast to this definition, Claxton and Rolston (1978) defined learning styles as "the students' consistent way of responding and using stimuli in the context of learning" (p1) here the major focus is on sensory perception aspect of learning. One comprehensive definition given by David Kolb is 'Learning Style' as: "a result of hereditary equipment, past experience, and the demands of the present environment combining to produce individual orientations that give differential emphasis to the four basic learning modes postulated in experiential learning theory" (Kolb, 1984). Rita and Kenneth Dunn (1993, p2) define learning styles as "the way in which each learner begins to concentrate, process and retain new and difficult information.

Based upon these definitions is clear that learning styles are individualized and every individual approaches learning in a different way.

Activity:

Activity: Critically analyze different definitions of Learning Styles and find out different aspects of learning styles as emphasized in various definitions

For Further Reading

Boneva D. (2014) ' Learning Styles and Learning Preferences: Research Discovery available at http://dyscovery.research.southwales.ac.uk/media/files/documents/2014-01-16/Module_8.pdf

9.2.2 Significance of Learning Styles

Identification of learning styles and research on the area of learning styles are considered important milestone in education. Learning styles have become a concept having valuable contribution in provision of effective learning experiences and leading towards better learning. Many educationists and researchers viewed learning styles as a significant field of consideration and investigation, especially when learning-style theory advocates that instructional process needs to be congruent with students' learning styles in order to make them learn effectively.

Oxford and Crookall (1990) as cited in Boneva (2014) also emphasized upon the importance of taking learning style into account. In this regard they suggested that as visual learners would prefer to learn using visual imagery. They should be provided with pictorial-verbal combination instead of giving vocabulary in isolation.

Sufficient literature is available to support that learning styles are the major determinant of effectiveness of learning. If learning styles are ignored during teaching learning process, this will have adverse effects upon learning.

9.2.3 Learning Style Models

There are a vast variety of Learning Style Models on the basis of personal characteristics and factors which may control an individual's way to learn.

One of the most popular and commonly used models of learning styles is ***Fleming's VARK model.*** VAK is an acronym for Visual (V), Auditory (A), and the Kinaesthetic (K) sensory modalities. This model provides learner with a profile of his/her learning style on the basis of sensory modalities involved in receiving information.

This model is based upon the theory of Neuro-linguistic programming (NLP). In NLP theory senses are divided into three main groups namely visual, auditory and kinaesthetic. These groups are referred to as Representational Systems (rep systems). This term denotes the fact that human brain utilizes the senses to construct internal representation, or model of the world around us. Individuals have a preferred learning style which sometime may be even blend of all three senses.

Some learners may have a strong preference for only one modality or style while others have may have a blend of two or three styles. It is very important to know one's preferred learning style as when an individual is aware of his or her preferred learning style(s), he/ she would be able to know the learning that suits his/her learning style. In fact some people better learn by seeing (Visual); while some others learn by hearing (Auditory); there are the persons who learn by doing (Tactile/Kinesthetic). It is interesting to note here that each individual advances through different stages of each style. Children are always inesthetic learners. Visual learning style and auditory learning style emerge later. Every individual is born with natural tendencies towards one dominant style. However, the dominant style may not always be the same in every sort of setting. It may be combined or even may vary according to the situation or the nature of the activity.

For Further Reading

Styles of Learning VAK. Available from:
https://www.researchgate.net/publication/317305325_Styles_of_Learning_VAK

Another popular model of learning styles is ***Kolb Experiential style Model***. Kolb's Experiential learning style model was proposed by David Kolb (1994). According to Kolb learning is a cyclic process and it involves four major stages namely 'concrete experience stage (CE), reflective observation stage (RO), abstract conceptualisation stage (AC) and active experimentation stage (AE).' Ideally but not always during a learning process a learner "completes all the stages". First stage that is immediate or concrete experiences stage refers when a learner goes through certain concrete experience. This experience leads him to observations and then reflections on the experience. These reflections are assimilated into abstract concepts with implications for action, which the

person can actively test and experiment with, in turn enabling the creation of new experiences.

On the basis of learning cycle according to Kolb learners can have four different learning styles. ***Diverging*** (feeling and watching - CE/RO) people with this learning style are able to look at things from different perspectives. Their preferred learning way is through watching rather than doing, they tend to assemble information and use imagination to solve problems. Kolb called this style 'diverging' because these people perform better in situations that require ideas-generation, for example, brainstorming. ***Assimilating*** (watching and thinking - AC/RO) The Assimilating learning style is concise and logical in nature. People with this style give much importance to ideas and abstract concepts. They are good at analyzing information and logically organizing it. ***Converging*** (doing and thinking - AC/AE) individuals with a converging learning style are good at finding solutions to problems. They mostly prefer technical tasks, and are less interested in people. A learner with a converging style would like more to do experiments with new ideas and to try practical applications rather. Than being involved in details and discussions. ***Accommodating*** (doing and feeling - CE/AE) This learning style is basically 'hands-on', and person with this learning style relies on intuition rather than logic. Accommodating learner uses other individuals' analysis, and would prefer to practically apply that information. He/She would commonly act on 'gut' instinct rather than on logical analysis. People with this learning style mostly rely on others for information and this learning style is prevalent within general population.

9.2.4 Learning Style and Teaching Approach

Teacher's awareness of students learning styles is very important. The effectiveness of teaching learning process depends on closely matching instructional techniques and teaching learning resources with the learner's learning style and preferences. By using variety of methods and resources such as auditory/visual as well as tactile/kinaesthetic, students will learn much better as compared to if one technique or resource is being used. 'Students retain 10% of what they read 20% of what they hear 30% of what they see 50% of what they see and hear 70% of what they say 90% of what they say and do' (Rief 1993, p.53). There might be different reasons of ineffective learning and some individuals struggling hard to learn. One potential reason may be that learning style is not aligned to the instructional method. Many students may remain disadvantaged by traditional instructional methods that do not correspond their learning styles. Therefore, it is crucial that teachers adopt teaching methods that cater to diverse learning styles making their teaching accessible to all. One way to achieve this goal is by using Multisensory Approach in teaching. Multisensory approach is an instructional activity where teacher offers simultaneous input or accepts output though two or more sensory channels. Through this approach learning styles of almost all learners can be accommodated and learners who gain learning experience via two or more senses are more likely to retain it.

If a teacher has insight into learning styles of students, he/she will be able to understand each learner's individual needs in a better way and would work specifically on the areas

in which that learner require additional support. Knowledge of learning styles will help the teacher to ensure effective learning through aligning his/her way of teaching to the styles and preferences of learners.

Activity:

Activity: Explore your learning style by some standardized inventory based upon Kolb model and analyze to what extent your characteristics are the same as described in the model.

9.3 Technology in Higher Education

Technology is having impact on internationalisation of higher education by exploring the new way to embed it in the teaching learning process. Reports and findings of the research focused upon the future of technology in higher education argues that technology has become an inevitable element of effective teaching and learning process in present era. Therefore, teacher educators and educational technologists are more inclined towards the planning for the integration of technology. Following are the major trends in Integration of Technology in Higher education.

Mid-Term Trends

1. Major mid terms trends are related to redesigning of learning space: in order to maximize active learning technology has remodelled learning space to 'smart rooms'. Smart classrooms are accommodative for deeper learning approaches.
2. Measuring learning: another important mid-term trend is continuous and error free assessment and evaluation of learning. In this regard some technology tools alike Learning analytics and visualization software are used to facilitate accurate measurements.

Short-Term Trends

1. Blending learning designs: Innovative online learning approaches and strategies for example flipped classroom can be used to align instructions with diverse needs of learners.
2. Collaborative learning approaches: Technology helps in using collaborative learning approaches through online communication. These approaches encourage both learners and teachers to use an interactive environment for working together on real-world challenges.

In strategic planning of short term and long term strategies for integration of technology there are many challenges affecting the adoption of technology in higher education. We start here with the challenges such as improving digital literacy and the integration of formal and informal learning. The challenges like achievement gap and the advancement of digital equity are to be addressed by enhancing competence of the teachers/instructors. There might be unforeseen challenges, that may be addressed as per situation arises.

These may include managing knowledge and rethinking the roles of educators. Working through these challenges will open up current barriers to advancing educational technologies in the future.

The researchers have also highlighted the technologies we are already beginning to explore and employ. Some of the mainstream technologies used by the educations and maybe seen in educational setup in future as reported by Weimer (2017) are:

1. Adaptive learning technologies: software and online platforms that adjust to an individual learner's needs and progress.
2. Mobile learning: smart devices that make learning portable, such as educational apps.
3. Internet of things: the physical world we live in, including classrooms, can be connected to the internet through technological gadgets.
4. Next-generation learning management systems (LMS): software and web applications that create a flexible and personalised online community for course materials, faculty engagement and student participation.
5. Artificial intelligence (AI): it has the potential to further personalise the student learning experience by enhancing online learning and adaptive learning technologies.
6. Natural user interfaces: allow users to interact with technology by using natural physical gestures such as taps, swipes, body movements, facial expressions, *etc*.

While technology continues to shape international higher education, it's important for practitioners to keep on top of future advancements. Therefore it is imperative for the learners and the teacher educators to keep them updated about the recent advancement and discuss them for integration in teaching learning process for enhancement of the learners' engagement.

Activity:

Students should be asked to write a note on the ways technology aid the international education experience, from recruitment and admissions in any of the educational institution of their choice.

9.3.1 Engaging and Empowering Learning through Technology

By the use of we have an opportunity to make learning more directly relevant by aligning both content and learning approaches with the immediate and long-term needs and interests of learners, and the situations in which they will need to use what they have learned. For example, technology allows learners and instructors to identify and utilise resources and expertise anywhere in the world. This ability can be particularly helpful inexpanding opportunities for historically disadvantaged students by providing equity of access to high-quality learning materials, expertise, personalized learning experiences, and tools for planning future education or career pathways. The flexibility of the time and space in learning leads towards the empowerment and enhanced engagement of the learners with the content and concepts.

9.3.2 Technology-Enabled Learning in Action

Technology has potential to improve and enhance learning in the following ways.

1. Technology enables students to access learning opportunities apart from the traditional barriers of time and place. This is especially important for adult learners and traditional students with conflicting priorities who need flexible learning opportunities. Instead of assuming all students will adjust priorities such as work and family obligations around course scheduling constraints, institutions can establish schedules that allow students to access courses in the evenings, provide flexible degree pathways so that students can complete a degree program outside the traditional semester-based framework, or work with alternative and online education providers to develop courses as series of shorter learning modules that can be engaged remotely or on mobile devices.
2. Technology allows learners access learning opportunities outside of formal higher education institutions, such as at their workplace or in community settings. Learners may employ technology to validate their experiences, demonstrate their learning, and get credit that helps them in promotion at workplace or getting opportunities for further education. Technology allows students to access high-quality learning resources, regardless oftheir institution's geographical location or funding.

Institutions with limited access to equipment, laboratory supplies, and other learning resources may be assisted to address these shortfalls by providing high-quality online resources that align with requisite learning outcomes. Some institutions also focus on development of materials that are openly licensed and/or free to use, thus significantly reducing the cost of access for learners. In these cases, institutions need to also prioritize providing their students equitable access to devices and the Internet. When they do, students can also participate in discovering and sharing relevant open resources.

9.3.3 Technology Enables Learning Experiences through Blended Learning

Technology can be used in number of ways to provide the learning experience both in distance and blended modes of education. Here are some of the ways the educations are using the technology to provide enabling learning environment.

- Technology helps in providing active learning environment and data based instant feedback on their progress can be coupled with high-quality, face to face interaction with teachers and peers to improve overall efficiency. It also provides opportunities for learners to embed digital and face to face learning, accessing resources via digital technologies and completing some activities at their convenience and participating later in group discussions or activities.
- Technology supports learners in their learning based on individual academic and non-academic needs through personalization.
- Technology may be useful for instructors to address learners needs such as advance them to mastery, accounting for their different strengths, levels of prior knowledge, and interests. It canalso give learners personalized feedback and prompt instructors to initiate interventions

- Such as additional lessons or suggestions to enable course and program success. Technology can also efficiently connect students to non-academic support to help them manage life challenges that might otherwise interfere with their learning.
- Technology can ensure that students with disabilities participate in and benefit from educational programs and activities.

Overall it may be noted that technology to reach its full potential to engage and empower learning, education stakeholders must focus on using it to improve learning outcomes, create new types of transformative learning experiences and delivery systems that better serve students of different circumstances, and collaborate across institutions, educational providers, and other key stakeholders to ensure that system- and ecosystem-wide goals are achieved. On the other hand technology can be used to complement the instructor interaction and the available academic and non-academic support. Educational technology developers should build tools and capabilities into educational technology solutions that can provide diagnostic insights into student learning and generate real-time, actionable data that can be used by students, instructors, and other stakeholders to improve learning outcomes. When developing software or digital content, developers will benefit by providing greater transparency about their software's accessibility features and alignment with standards. Future researchers should focus that how different types of students learn and the circumstances under which the application of technology is effective for different types of students.

9.3.4 Technology to Transform Learning

According to US Future Ready Learning Report (2016) instructors should use technology to transform courses into more personal and engaging learning experiences by using digital materials to increase access and create opportunities for collaborative and project-based learning. Education technology developers and other stakeholders should work to adopt standard of learning resource design to help educators select and evaluate learning resources for accessibility and equity of learning experience. This sets the expectation that materials that are born digital also can and should be accessible, and that producers and users of digital technology should adopt a standard framework and language for producing accessible educational materials.

It should also be realised that the goals, interests, and learning needs of students are diverse and maybe addressed by multiple entities. Policymakers should continue to provide the flexible ways to learning that may adjust the variety of learning styles.

9.3.5 Teaching with Technology

Excellent instructors inspire learners to fully engage and do their best work. Experts in use of technology focus upon learning science and deep discipline knowledge to create high-quality learning experiences. However, instructors in higher education face complex challenges that are unique to their environments. While instructors at all levels are charged with responsibility for the success of students from diverse educational and socioeconomic backgrounds and with a variety of academic and non-academic needs, higher education instructors often must balance teaching responsibilities with research

and service priorities. In addition, some may lack robust access to support resources. Higher education institutions should promote students access by supporting educators, including faculty, contingent faculty, and other instructors, indeveloping research-based, technology-enabled teaching practices, analyzing and interpreting formative learning data, and effectively using data-driven student support systems. With the purpose that it will allow the learner the conducive and flexible learning environment.

9.3.6 Role of Instructors in Technology-Supported Learning Environments

High-quality teaching results when instructors are intentional about pedagogy and integrating research on education and learning into their courses. In technology-supported learning environments, instructors can leverage learning systems assessment data to guide future practice by understanding how instruction and resources impact learning for students.

In addition, with technology, instructors can enhance their relationship with students and the relationship students have with their peers and their learning. Instructors can also empower students to become co-creators of their learning experience by using engaging digital resources that can be accessed within and outside the classroom. Classroom experience provides actionable, real-time data on student performance, suggest academic and non-academic interventions, and create avenues for personal connections between students and instructors. The implementation of technology can serve as a catalyst for intentional planning in the practice of teaching that leads to improved learning outcomes for students.

By integrating technology the instructors may engage the learners in number of ways. But ample amount of time and effort is required for the development of well sequenced and pedagogically sound learning environments. Following are some descriptions of promising practices that can help elevate teaching at higher education level.

1. Institutions can foster ongoing professional learning for instructors that supports them in developing their skills as users of technology for teaching in online and blended environments and enhances their knowledge of research-supported teaching practices. Professional development centres may provide ongoing support to faculty to enable a range of assistance, from the availability of instructional designers and technologists to advise for faculty on how to build their courses to providing production support for modules or full online courses.
2. Institutions may invest in research on their own instructional practices and apply promising practices to course design.
3. Institutions may create new career ladders for faculty and instructors who master technology in teaching.
4. Professional recognition programs for instructors leading in implementing and evaluating new technology for both quality and cost-effectiveness.

The availability of technology for teaching is one thing and the use of the technology at appropriate time is another, positive attitude for the use and integration of the technology

may be more helpful for instructors and consequently the learners at higher education level.

9.3.7 Technology-Enabled Assessments in Action

Integration of technology has opened new horizon for authentic assessments across a broad range of subject areas, applications, and students at scale. Followings are some of the opportunities the instructors may use to make the assessment more reliable and valid.

- Technology-enabled assessments can allow more precise measurement of student learning against clearly mapped competencies. In addition to providing students with transparent documentation of their learning progressand skills attainment, technology-enabled assessments can be documented, verified, andmade portable across the various stages of a student's education and career.
- Data-rich formative assessments can provide feedback on student progress to students, peers, and instructors. Data can provide students with feedback on how toproceed toward mastery, including through portfolio creation, participation in challenges, projects-based learning activities, games, simulations, and advanced analytics.

Technology-enabled, coherent assessment systems may help to eradicate malpractice in the higher education system. More open assessment systems allow monitors to review both the basis and implementation of the assessments activities. They may have access to results so that its alignment with the results of other disciplines and standards should be established. Therefore there is a need that institutions and instructors should collaborate to transform assessments by creating high quality, technology-enabled authentic assessment activities that allow learners to simulate real-world experiences. Researchers should develop collaborative networks that evaluate and improve the effectiveness of assessments by collaborating the other stakeholders to address their needs and to satisfy them with the transparency and the authentication of the system. This will consequently help to reframe the approach to assessment in education. Overall it has been seen that technology has crept in all the components of education, so it is compulsory that curriculum developers should make the curriculum flexible for integration, teachers/instructors should be competent enough to integrate it at appropriate time. On the other hand student support is mandatory for successful integration.

Activity:

Activity: Prospective teachers should be assigned to develop a plan student support system for integration of technology in any of education program.

Further Readings:

U.S. Department of Education, Office of Educational Technology, (2017). Reimagining the Role of Technology in Higher Education: A Supplement to the National Education Technology Plan, Washington, D.C.

9.4 Continuing Education / Life Long Education

The term lifelong learning stands for a consistency in learning over one's life in and beyond formal educational settings that means there are many common ways in which learning takes place. Such as there is a drive to credit the personal experience of individual towards certification. Children and adults have different kind of learning and developmental needs that demand different kind of strategies. In future if a person is not learning he/she may remain behind and could not cope the challenges of the life. This situation demands and highlight the importance of the continuing education. The individuals have to develop and improve the skills for adapting changing context of the world.

According to Collins (2009) that drive of lifelong learning started by Knowles, viewed education as life long process, has become the basic principal of adult learning. Duyff (1999) agreed that lifelong learning (LLL) is most common term in education and is stated as any kind of learning or teaching that extends or builds upon previous experiences in the same general realm of knowledge. It is also referred as all activities and efforts by learners to improve their skills and knowledge to meet the desired needs arose at work place or in their area of interest.

In literature the educationists have used the terms Continuing Education (CE), professional development and Lifelong learning with same meaning that focus on the development of the individuals/workers/professionals based on certain training or education for the success of the organisation or the individuals. In twentieth century the educationists and researchers have focused more towards continuing education because of drive of industrialisation. The demand for CE and achieving necessary skills has been aroused, challenging previous educational venues and creating opportunities for both professional and personal skill improvement. In current situation there are many reasons to justify the demand of continuing education such as quick changes in technology, enhancement of global competition, meeting the needs of the diverse community and demand for new skills.

According to Fleming (1997) developmental and learning needs are felt more important for adults as there are very few opportunities for the adults to learn at work place and if they have these are very informal. Which make the later life of the individual much harder and time consuming. In this fast world, time is considered as money, so a skilled person may save his/her time by using the appropriate time. Due to this reason industries and institutions are more inclined towards continuing and lifelong learning.

With the change rapid change in environment due to technological innovations, lifelong learning help individuals to enhance skills compulsory for survival. It means that people should learn to survive and how to live. Peoples continuously learn, gain knowledge and new skills in schools, at home, on the job or in the community. When members of the community are engaged in learning by all mean and all stages of life, it is referred as continuing education. In United States and Canada it is named as further education

where as in other countries it is considered as lifelong learning. But the basic concept behind is that learning takes place almost at all times in anywhere, according to Rojvithee (2005) different stages are:

- **Age 0-5 years:** At early ages of life, a lot of learning takes place that prepares a foundation for further learning in future. Learning in these ages is mainly informal, occurs in children by copying almost everything from their parents, peers and contexts.
- **Age 6-24 years:** At these ages learning takes place in educational institutions, from primary and secondary to tertiary levels. Individuals learn form family life, social organizations, religious institutions, and mass media.
- **Age 25-60 years:** Adults learn informally mainly via the use of instructional media: from their jobs, work environments, colleagues, touring, mass media, information technologies, and nature. They learn from their experiences and ways of problem-solving. So, they demand to continuous development of intellect and steady improvement of skill.
- **Age 60+ years**: People in elder ages learn a great deal from activities suitable to their age. They can learn from art, music, sports for the elderly, handicrafts and social work. They can also participate in voluntary works in community organizations, clubs and associations.

As we have gone through the stages, it is observed that learning has been taken different forms like formal, informal and non-formal learning. Tissot (2004) defined these stages in the following ways that may be helpful to understand its nature and utilisation in higher education as well.

1. **Formal learning:** It is learning taking place within the premises of the institution, and occurred in well organised and structured way. It lead to certification like diplomas and degrees.
2. **Non-formal learning:** It is executed in the form of planned activities, it is not explicitly designed and structured as that of formal learning is the learning. But mostly it is learning like vocational skills gained within the working environment. Distance learning and blended learning are the examples of non formal learning. More structured forms have been erupted due to enhanced use of educational technology.
3. **Informal learning:** Learning associated with the daily life activities and referred as experiential learning. Every individual learn from the family, peers and friends, even at work place and during leisure activities.

Activity:

Formulate a plan for the individuals who couldn't continue formal education after graduation due to early job. Select any profession of your choice and formulate comprehensive plan for professional development.

On the other hand it is necessary to understand that continuing education is beneficial for all persons and society and contribute towards national economy. The following are the ways to impact the individuals life, society and country.

1. It helps the persons in gaining knowledge, skill and develop attitude towards national development.
2. It also help people to be more productive and innovative for the society. A constant change and improvement in skills is the key feature of continuing education. Therefore those who want to cope better with the demands of workplace changes, are those who constantly learn new skills and train for new challenges.
3. It is helpful in development of the economy of the nation by providing opportunities to workers for acquiring more skills, knowledge and abilities that leads to a higher capacity in the economy.

As per requirement and benefits of the CE let's consider some important features. Researchers have highlighted that flexibility of duration, learner-centered, approach, need based education, multi-level and multi-subject learning, and open access are the key features. As the population is growing larger. So, they have additional obligations such as work and family, for the most part. Therefore, a flexible learning framework is needed to enable one to learn at all times and all places. The features listed above are aligned with the needs of the adults, because they can learn while working. Therefore there is a need that flexible plan should be prepared. Because of the difference between individuals, there is a need to an adjustable pace and wayof study suitable to the individuals' capabilities. The adult learning market is going to become more competitive as well as full of opportunities, for both the existing institutions and new entrants. Combination of increasing competition and the requirement to keep updated professionally with a rising standard of living and more leisure time have made studying an ongoing process.

Along with its benefits there are some limitations attached with CE, we as an educators have to address these limitations as well. Some of the limitations are listed as under.

1. Which content should be taught (Conduct of Need Analysis is required)
2. Identification and level of target groups (Different Professions have varied nature of needs for professionals)
3. Selection of Teaching and Learning Strategies (Help from the professionals Required)
4. Assessment and evaluation (Appropriate tools for assessment required)

Lifelong learning is closely linked to prognosis of the educational phenomenon as well as to the long-term innovations in education. Due to the continuous and accelerated changes taking place in the society, the human being is also a subject to this transformative process, which requires an active and pro-active attitude. The concept of "Lifelong learning" concept is related to the open educational systems and variety of techniques to ensure the support and continuous development of capacities and competencies to deal with the emerging issues and developing as an independent and creative person. In this recent era, work force market pressures, unemployment and social trends and issues, lifelong learning presents a solution to all these dilemmas. The traditional approach of studying for a finite period of time to complete education before moving to the labour market is increasingly replaced by the continuous learning throughout the entire lifecycle of the individual.

Activity:

Activity: Conduct an interview of manager of any large organisation to identify the needs of the employees for lifelong/continuing education.

Exercise

1. Write a note on development of distance education in Pakistan and its role in promotion of higher education in the country.
2. Describe the prominent learning styles that may be considered while planning instructions for the higher education.
3. Explain the need and significance of the technology integration for optimization of learning at higher education level.
4. Identify different technological innovations in teaching and learning process, also prioritise these innovations as per its features.
5. Explain the need and significance of continuing education for enhancing higher education in the country.
6. Compare the terms lifelong learning, continuing education, further education and professional development in terms of skills development.

Further Readings

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