E – Learning: An Individual Learning Perspective: an Analysis

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Abstract — In this modern world the development of technology in teaching and learning has a great influence on the instructional methodologies that institutions adapting. The traditional instructor centered method has been modified and enhanced in many institutions. In contrast to the traditional methods, in the modern learning environments students will have an active role in their learning process and can understand how to reach their desired learning outcomes on their own. E - learning is a kind of education which incorporates technology, efficiency, self-motivation and communication which empowers students to build up their knowledge, enables them to think critically, work as a team and solve problems collectively. This paper is mainly is an analysis on the benefits of E - learning over traditional educational methods. It is found that learner centered education such as E-learning is more effective to students as it makes students to develop their problem solving skills, critical thinking, analytical skills and responsibility to learning.

Keywords — *E-Learning system; Constructivist Learning Model; Learner Centered Education*

I. INTRODUCTION

Instruction is a systematic process in which every component (i.e., teacher, learners, materials, and learning environment) is crucial to successful learning.
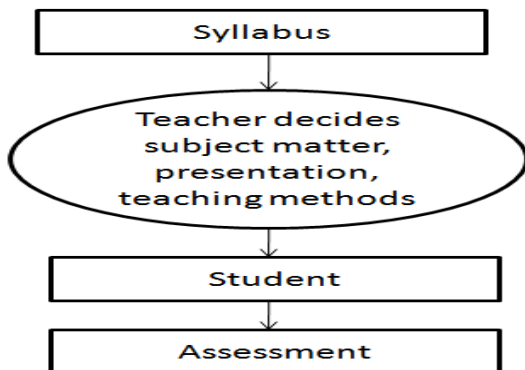
A. Instructor Centered Education

Figure 1: Teacher Centered Approach.

The figure 1 describes instructor centered education. Here as per syllabus the instructor decides teaching methods, prepares teaching documents, presentation materials and provides all these to students. The students are undergone final test or assessment.

Teachers are the main authority in this model. Students are considered as "empty pots" whose main role is to passively collect information from lectures and follow these instructions with an aim of testing and assessment. It is the main role of teachers to pass knowledge and information onto their students. In traditional teacher centered method of education students put all of their focus on the instructor. The teacher directs all classroom activities, so they don't have to worry that students will miss any important topic. Teacher centered instruction can sometimes get boring for students, their minds may wander here and there and they may miss important topics. It sometimes may encourage students to be passive learners who neither contribute to the class through discussion nor engage in critical thinking or problem solving [5].

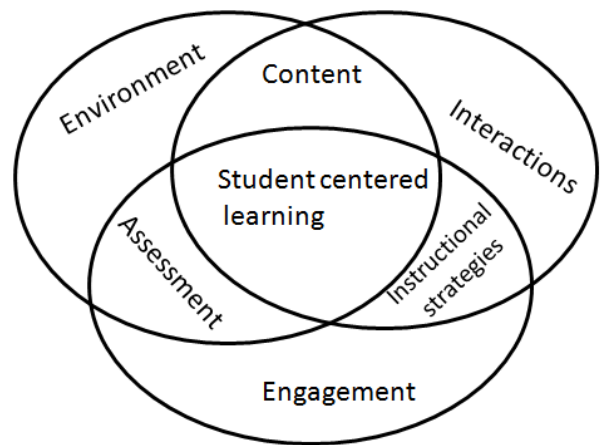### B. Learner Centered Education

Figure 2: Learner Centered Approach

Figure 2 illustrates Learner centered education methods. The entities and activities involved in this approach are shown in ellipses. There is an e-learning environment according to particular instructional strategies where learning contents are available. Interaction with the learner and the system, instructor and co learners are shown. Here also assessments on stages of learning as well as a final assessment is done.

Learner - centered education incorporated with methods of teaching that change the focus of instruction from the instructor to the learner [16]. Its main aim is to develop learner autonomy and independence by putting responsibility of learning in the hands of students [2]. Learner centered instruction focuses on skills and practices that enable lifelong

learning and independent problem - handling. Student - centered learning theory and practice are based on the constructivist learning theory that emphasizes the learner's crucial role in constructing meaning from new information and previous experience [6].

Constructivism is a theory of knowledge that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas [15]. In a learner centered training environment, learners are controlled by their own training experience. All of the online training activities and study materials are designed to meet the wide range of learning needs. Here each learner has the opportunity to take an active role in the learning process and the E - learning professionals will be merely there to offer assistance or guidance when needed. E - learning methodology is an example of this kind.

II. E - LEARNING CONCEPTS AND TECHNIQUES

E - learning is a method of education which incorporates self - motivation, efficiency, communication and technology. Because there is only less social interaction, students must keep themselves motivated. The isolation intrinsic to e - learning needs students to communicate with each other and the instructor frequently to accomplish their assigned tasks. The e - learning content is designed with media that can be accessed from computers and other means of Internet accessible technology. E - learning is a flexible term used to describe a means of teaching through technology. There are mainly two general approaches to e - learning: self-paced and facilitator / instructor - led. In self - paced method, learners are completely independent, while facilitated and instructor - led e - learning courses provide different levels of support and assistance from tutors and instructors and collaboration among learners. Often, e - learning courses combine both these approaches [3].

The different kinds of e - learning are based on: (i) means of communication, (ii) schedule, (iii) E - learning class structure and (iv) technologies used.

A. Means of Communication

There are several different means for learners to communicate with each other and with their instructor. E - learning can be conducted through online applications. In other cases, if distance is not a matter of consideration, some peer – to - peer communication can be included to create blended e - learning [14]. Blended e - learning includes web interaction and in - person interaction. Technology broadens the definition of peer – to - peer as there can be the use of two way video or two way audio. Introducing these elements will create a blended e - learning experience.

B. Schedule

E - learning can either be synchronous or asynchronous. Synchronous means that real - time communication is implemented, such as video conferencing, teleconferencing, and on-line chat programs. Asynchronous means other means of communication are utilized that do not require real time responses. Examples of asynchronous e - learning include e - mail, blogs, online forums etc.

C. E - Learning Class Structure

E - learning class structure defines how the instruction is administered. E - learning can be self - paced, instructor - led, or self - study with an expert. Self - paced instruction is administered by giving the learner the materials he / she requires to complete the training / instruction. Instructor - led training offers the learner a guide to implement the instruction. Self - study with an expert is a combination of both self - paced and instructor - led. In self - paced method, the learner is responsible for doing a task on schedule; however as in instructor - led, there is interaction with an authority that checks the learners' progress.

D. Technologies Used

Technology used to implement instruction is not limited to web - based study materials. E - learning can be achieved by utilizing any form of technology that sustains information yielding media. Video / audio is a viable means to implement instruction. More current technology enhances the learning experience because there are more means to convey the information. Technology is the most variable thing in e - learning. The more advanced the technology becomes, the more options there are to further e - learning. The evolution of the Internet subsequently created e - learning, as technology developed; correlatively the quality of online instruction improved because computers were able to support different kinds of media. As speed increases and devices become smaller and more mobile; training will become more flexible and further boost the growth and popularity of e - learning. Now a day, most of the people access internet from mobile phones and other portable devices, it became very convenient for them to participate in online classes no matter whether they are travelling, engaged in some work or staying at home. Most of the mobile devices of today are capable of handling all of the software that are using in e - learning.

III. ADVANTAGES OF MATERIAL CENETERD INSTRUCTION

Advantages of material centered education over traditional methods can be classified as the following
1. Creates reusable instruction
2. Replicates the designer's "work" and "knowledge"
3. Unlike teacher-centered, the instruction does not disappear when the teacher erases the board.

IV. ROLE OF TECHNOLOGY IN STUDENT CENTERED CLASS ROOM

A. Schedule Empower the Learner

Interactive online assignments will help students assess their learning by themselves, understand and improve their drawbacks, and be responsible for their own learning. Online assignments also give students opportunities to practice the study material at their own pace. Teachers may not be physically present while the students handling their assignments, but their help could be avail online or afterwards, whenever students feel they need it [8] [11] [17]. The technologies that support these kinds of activities may include online quizzes, online assignments, webinars, blogs and discussion forums.

B. Organize Activities

A structured, systematic and logical flow for the courses is always appreciated by learners as well as instructors. A good organization simplifies the workflow and approach towards learning; it eases out tasks in a systematic way. The technologies that support to organize and how to communicate course materials could include an online syllabus, the learning management system and email or mobile notifications of important due dates for assignments and all.

C. Adopt Technological Tools in the Classroom

When a teacher adopts technology in the classroom to aid him / her in teaching, he is able to create learning experiences that complement each other whether the students are learning online or are present in the classroom physically. This helps teachers to better utilize their efforts, time and resources and focus more on guiding students, rather than doing all the necessary preparations and arrangements for class room teaching [12] [13]. The technologies that support this goal include online homework, assignments surveys etc.

D. Making the Student Responsible for Learning

Teachers should create courses such that it will allow students to practice building connections with the course material and proceed at their own pace. Rather than trying to match up with the learning style of the other students of his/her class, now the student can comfortably practice and develop the skills in their own learning style, which is definitely more beneficial and effective for the student in the future.

E. Subjecting Students to Regular Evaluation

Evaluation certainly fosters learning and is a must in the process of learning. Teachers can use a variety of grading opportunities, such as online quizzes and tests games. The usage of motivator elements like online badges and medals keep the students encouraged to learn and succeed. There are a variety of technologies that can help students to keep track of their progress, which including online quiz banks and online platforms that enable collaboration and peer review.

V. E - LEARNING TECHNOLOGIES / TOOLS

E - learning courses utilize many types of tools and technologies [7] [10] such as (i) Email, (ii) blackboard (Learning Management System), (iii) Adobe Connect (Web Conferencing System), (iv) SafeAssign, (v) Podcast, (vi) Adobe captivate and (vii) Moodle.

A. Email

The role of the instructor is important in e - learning because he / she is the person who guides, inspires, encourages and tracks students throughout the learning process. So to always keep a contact with learners, most of the learning management systems have options like instant messaging between persons, email, chat etc that ensure learner and instructor are only a click away from each other.

B. Blackboard

Blackboard is a learning management system used to bring the classroom online. With tools to engage, grade, collaborate, track assignments and more, it is able to reach students effectively to ensure they are interacting with the course content and curriculum in the most effective way. It is a web - based server software which contains features for course management, customizable open architecture, and flexible design that allows integration with student information systems and authentication protocols. It may be installed on local servers. Its main purposes are to add online elements to courses developed and delivered traditionally and to develop completely online courses with less or no face – to - face meetings.

C. Adobe Connect

Adobe Connect is software used to create information and general presentations, online teaching materials, web conferencing, learning modules, and user PC sharing. It is a synchronous web - based technology, in which students will log into it at a specific time to listen the instructor's talk, give a lecture, text or voice chat with everyone in the class, or participate in video conferencing.

D. Safe Assign

SafeAssign is a plagiarism prevention tool, offered by Blackboard. This service helps educators to prevent plagiarism by detecting unoriginal / plagiarized content in student papers. In addition to acting as a plagiarism detection tool, it also has features designed to aid in educating students about plagiarism and the importance of proper attribution of any copied content. SafeAssign compares submitted assignments / papers against a set of sources to identify areas of overlap between the submitted assignment / papers and existing works.

E. Podcast

Many instructors record lectures for later viewing. The benefits of integrating podcasts into e - learning courses are worth the resources and time that invest. E - learning podcasts will give the opportunity for the learners to make learning fun, informative, and exciting.

F. Adobe Captivate

It is a rapid responsive authoring tool that is used for creating e - learning contents such as software simulations, software demonstrations, branched scenarios, and randomized quizzes in Small Web Formats (.swf) and HTML formats. Adobe Captivate generated files formats can be converted to digital MP4 formats which can be played with media players or uploaded to video hosting websites. For software simulations, Captivate can use right or left mouse clicks, key presses and rollover images. It can also be used to create snap shots, and to convert Microsoft PowerPoint presentations (.ppt) to .swf and HTML formats.

G. Moodle

Modular Object Oriented Dynamic Learning Environment (Moodle) is a free software package designed to help instructors and learners as a tool to provide in creation of quality teaching. It supports user name authentication. Each user is given a username and password to access the Moodle portal site. Once logged in, users have access to the courses in which they are registered. Instructors are registered as users with provisions to edit the course's site, including modifying the activities and marking students. The contents of course and activities are almost in the middle of the page.

The types of resources are html files, text files, links to web pages, multimedia files, images and links to uploaded files; while the activities commonly used are chat, quiz, forum, choice and assignment. Moodle has a feature to conduct survey on the users and it supports built - in template for the questionnaires. An online survey using different tools was built then uploaded the survey website on the course page in Moodle. Students can participate in the online survey in their free time.

VI. E - LEARNING: A SUBTITUTE

E - learning is a right choice in the following circumstances: (i) there is a huge amount of content to be delivered to a large number of learners, (ii) learners come from geographically dispersed areas, (iii) learners have only limited mobility, (iv) learners have limited daily time to participate in   learning, (v) learners do not have effective reading and listening skills, (vi) learners have basic computer and Internet knowledge, (vii) learners are required to develop homogeneous background knowledge on the topic, (viii) learners are highly motivated to learn and appreciate learning at their own pace, (ix) course content must be reused for different learners' groups in the future, (x) training focuses to build cognitive skills than psychomotor skill, (xi) the course addresses long-term rather than short-term training needs and (xii) there is a need to track and collect data.

VII. CONCLUSION

Conventional teaching methods and e - learning methods are studied. It is found e - learning technology has the following advantages and benefits over traditional methods due to facts such as (i) e- learning provides a student centered learning approach which is constructivist in nature, (ii) it makes students to visualize a problem with multiple perspectives and allows them to participate in their own learning process, and (iii) students are challenged to develop skills in problem solving and to develop critical, analytic and creative thinking in their task and are encouraged to learn more about their subjects.

Role of the instructor shifts to act as a   facilitator and a consultant to the learners, support them throughout their learning process, rather than just being a dictator in the entire teaching process.

Technology can help pave the way for both instructors and learners, but it definitely requires a teacher who is efficient at creating a course that raises the pedagogical benefits of that technology has towards helping students to meet their desired learning goals.

One main fact that should be taken into account is the level of security and flexibility of the current E-learning system. A further research and analysis will be done on security and flexibility on e-learning.

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