The Future of Teleteaching in Teacher Education

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ABSTRACT

In the last decades there has been a drastic increase in the-learning platforms. The innovations and technological advances in the field of Information and Communication Technology (ICT) broadly enhances our vision in various field of life whether commercial, economical, social, education, banking sectors, transportation at national or international level. This paper gives an overviews about various information communication technology in the field of teacher education specially teleteaching i.e. educational which is imparted to the students through the use of various technology carried out in a asynchronous mode. A teleteaching is an online instructional technology specially being used in massive open online courses (MOOCS) for providing services such as live, recorded lectures as video streams. It also included some intelligent integration methods for enhancing student learning outcomes and experiences. Thus this paper gives a platform for improving learning experiences by collaborative learning on teleteaching platforms.

Keywords: *Teleteaching, Information and Communication Technology (ICT), Distance Education (DE), Massive open online course (MOOCs)*

Technological advances and new training paradigms have a strong influence our society. Today technological tools, strategies and devices are being used to impart knowledge to the students. The role of computer and information communication technologies are playing significant role towards technology-based education. There are several means of communicating with the students that can be used in either ways formally, informally or non-formally. The students and teachers both use technology during classroom practices or outside the classroom activities for teaching-learning purposes. The concept of education through education technology practices is not limited just to classroom learning but one can be educated in all the respects mediated through distance education, distance working etc. Thus Teleteaching is one concept to highlight these educational changes in a wider form.

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TELETEACHING – A NEW MEDIUM OF INSTRUCTION

The teleteaching medium included various technology such as Computer-mediated communication technologies, interactive TV, telephone and telefax, T.V., software, radio, multimedia network, video and smart boards. The technology offered free access to e-content, e-books, e- images to the whole population scattered in remote geographically areas anywhere, anytime.

Earlier the education was limited to four-walls of a classroom. The teacher played important role in classroom teaching. The students were just the active listeners who completed the tasks assigned by the teacher well in time. The private organizations or schools had the authority for opening educational institution in early times. But today due to educational hub all around in terms of educational centres, coaching centres, DE program, correspondence education system, open learning, universities and schools have seen a new market in this area. Later on telecommunication services have been used in many educational projects such as distance education programs that are mentioned in this paper. The technologies such as data communication, satellite T.V., and interactive T.V are being used in this regard.

UNIDIRECTIONALISM TO MULTIDIRECTIONALISM

Teleteaching teaching is an instructional approach from unidirectionalism to multidirectionslism approach.

Unidirectionlism: In unidirectionalism there is only one transfer of component i.e. knowledge. The focus component is on knowledge itself. The process of imparting education as a piece of knowledge is distributed to arbitrary number of students. The knowledge transfer occurs between the teacher and the student via skill transformation followed by feedback. Thus, this type of method is based on the several decades experiences provided in schools, organizations, early group-community, church etc.
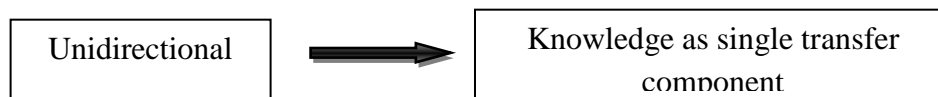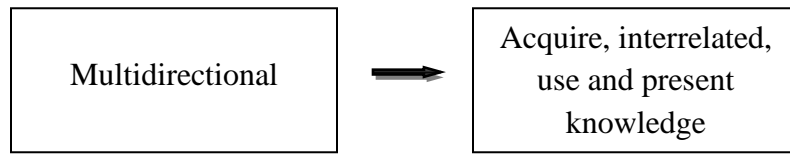

Fig: No.1:- Unidirectional model of teaching

Multidirectionalism: The transfer of knowledge skills is not among only teacher and student but amongst them also. Each and every student is being included in the classroom practices where every student engaged on a common problem through different aspects either communicating or by taking the help of teacher or other students. The teacher's role is as a guide, supervisor or knowledge imparter through various skills, strategies and methods. His/her role is just to highlight the path of success or to give directions to the students with sufficient previous knowledge, initial starting points, guidance, feedback and providing right path towards going in wrong way. Thus in this way large number of students learn together in a moderate way using
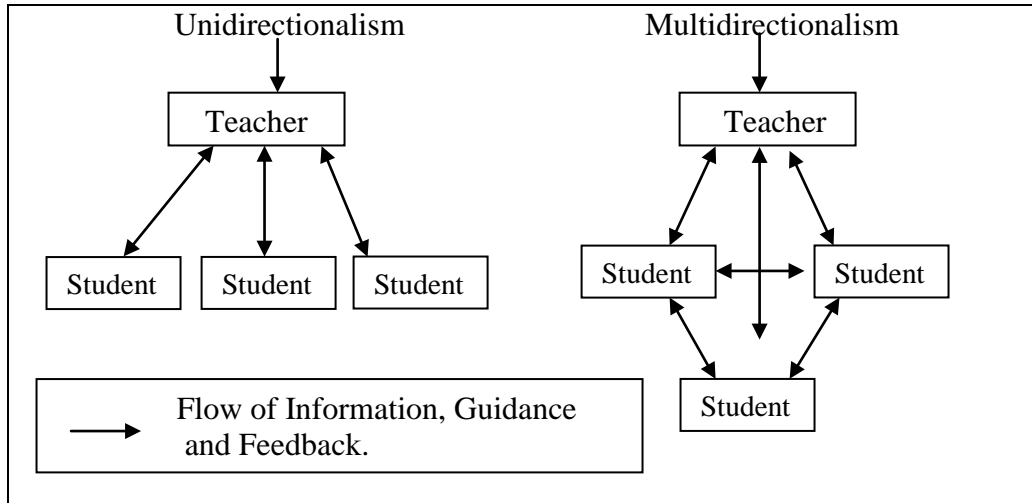
different strategies, methods and skills to achieve a common target point. Here, the focus is on the method of acquiring skills and presenting knowledge.

Fig: No.2:- Multidirectional model of teaching

The main difference between the unidirectional model of teleteaching and multidirectional model of teaching are shown in the fig. no.-3.

Fig. No.3:- Unidirectioanlism Vs Multidirectioanlism model of teleteaching

Source: - Teleteaching from unidirectioanlism to multidirectionalism, Institute for Information Processing and Microprocessor Technology (FIM), Johannes Kepler University, Altenbergerstr. 69, A-4040 Linz, Austria.

There is a quite a difference between the two terms teleteaching and group work or team teaching. The term 'Teleteaching' is closely related to the distance education while the 'Group work' or 'Team Teaching' is mutually related to the cooperative teaching followed by close cooperation through the use of wireless networks and computers to bridge the virtual proximity gap.

TELECOMMUNICATION SERVICES

The etymological meaning of word telecommunication is the science and technology of the communication of messages over a distance using electric, electronic or electromagnetic impulses. Teleteaching is basically unidirectionalism to multodirectionalism model. In teleteaching the user watches educational videos and have to pass the online tests which is necessary to issue to a certificate. In addition to it students learn better i.e. 70% in contrast to just listening with around 7%. The teleteaching services are efficient, flexible and all time available. Once teleteaching is being done, the recorded information would be available for years for a long time with no reluctant data. Thus, teleteaching is thus a bigger and longer-lasting source of

knowledge. It is more focused method of imparting knowledge to the students through students attending lecturers and exercises. Thus, in teleteaching students especially watch videos for about 90 mins and use online content as a referenced material to prepare assignments. The student's watch, take notes and deciding about the content present through online systems. In teleteaching, online platforms are needed. Thus, is an easier and cheapest way of providing education to the students. In tele-TASK one can use all written words on the video stream slides and the lecture taught by the teacher educators are also available as a text. Thus tele-TASK supports proper matching of keywords with similar content. In case learner done fail attempts in answering the questioning through a self-test or assignments, s/he can be advised to navigate back to the video lecture to see where the problem was actually.

Thus, it supports voluntarily deepen their knowledge in case of correct responses. There are some other technologies related to telecommunication services as discussed below:

CMC- Computer-Mediated Communication: Computer-mediated communication covers a wide area of services such as electronic emails, electronic conferences, BBBs (Bulletin Board Systems), and LAN (Local Area Networks). Zellermayer, salomon, Givon & Globerson, 1991, "Computer-based tools i.e. databases, semantic networks, expert systems and cognitive simulations for student modeling and multimedia/hypermedia) and learning environments that have been adapted or developed to function as intellectual partners with the learners in order to engage and facilitate critical thinking and higher order-learning".

SB- Semantic Blogging: "Semantic blogging offers the benefits such as rich semantic searches/queries, and retrievals, distributed conceptual blogging and opinion publishing, semantic navigation and annotation, automatic knowledge management and content management, intelligent harvesting, aggregation and syndication of data, enhanced data sharing and human machine synergy". (Cayzer, 2004, 2006; Wehlster & Dengel, 2006).

MI- Multimedia Instructions: According to jereb & Smitek, 2006), "Multimedia involves the integration of images, videos, sounds, animation, and simulations and can offer many potential benefits to instructors for delivering information and instruction".

MAE- Multiple assessment and evaluation: Buzzetto-More & Alade, 2006 , "The use of computer technologies and e-learning strategies can provide an effective and efficient means of assessing teaching and learning effectiveness by supporting traditional, authentic, and alternative assessment protocols".

VLE- Virtual Learning Environment: Jennings and Collins (2007) pointed that "Virtual worlds such as second life, active worlds …are are expected to become more widely used and more sophisticated within two or three years….as more education institution begin to participate,
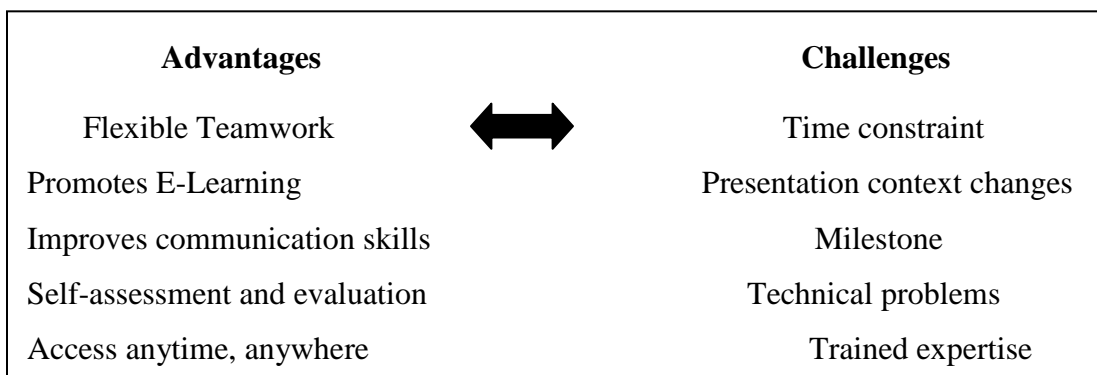
the complexity and abundance of virtual locations for these institutions will continue to grow", (p-180).

Wireless communication system: According to Dixit, "In the future, wireless traffic is expected to be a mix of real-time traffic such as voice, music, multimedia teleconferencing, online games, and data traffic such as web page browsing, instant messaging and file transfers. All of these applications will require widely varying and very diverse quality of services (QOS) guarantees for the different types of offered traffic".

Mind Tools: Jonasse (2000), developed the *mind tools* idea, "The expectations that the interaction with ICT in mindful ways will enable knowledge construction and reflection and will lead to cognitive change".

ADVANTAGES AND CHALLENGES

Teleteaching especially in teacher education is an instructional medium through which tele-lectures taught in the classroom has to be recorded or published online. Thus teleteaching can be used like a reference book anytime, anywhere. Fig. no. -4 shows the advantages and challenges of teleteaching.

Advantages		Challenges
Flexible Teamwork	⬌	Time constraint
Promotes E-Learning		Presentation context changes
Improves communication skills		Milestone
Self-assessment and evaluation		Technical problems
Access anytime, anywhere		Trained expertise

Source: - Teleteaching from unidirectioanlism to multidirectionalism, Institute for Information Processing and Microprocessor Technology (FIM), Johannes Kepler University, Altenbergerstr. 69, A-4040 Linz, Austria.

Advantages of Teleteaching

The multidirectional teleteaching introduced the cooperative and collaborative learning through team work. Thus the combination of team teaching with collaborative work gives following advantages

- **Flexible Teamwork:** It promotes team-work by working together in a collaborative manner. Thereby providing cooperation, constructive insight, deep knowledge, feedback and suitable examples for the group.
- **E-Learning:** The lectures delivered, recorded or published online supports students to promote e-learning. One can easily use information communication networks and techniques for accessing the content easily.

- **Improves communication skills:** The healthy interaction between the students and the teacher educators promotes them to expand their vision nationally or internationally. Thus, irrespective of the distance or geographical region, we can share different views, ideas and concepts among themselves.
- **Self-assessment and evaluation:** The students can watch educational videos, clips or lectures delivered by the teacher according to their own pace and individual differences. One can watch as many times according his/her capabilities and thus helps in self-assessment of one's academic achievements through feedback, assessment or comments.
- **Access anytime, anywhere:** The technology has widen its wings so long that it is possible to connect with anyone anywhere provided one must be on-line or using communication networks synchronously or asynchronously.

Problems hindering Teleteaching

Besides advantages teleteaching may have some drawbacks by incorporating teamteaching in it.

- **Time constraint:** The shared content sometimes allows multiple intersection or interlocking contents. The lecture, content, or images are to be discussed timely as sometimes there may be gap in the discussions. The delay in teacher's lecture contribution would not promote active individual feedback and assessment.
- **Presentation context changes:** Since the multiple access to content sometimes changes the theme, content, or idea of the concept by experts, educationists etc. Thus, it would not be able to judge or to find out the changes content, theme or idea. Or in some cases the same pages are uploaded to the web, or many new groups have submitted to the web or students might have added comments every time login to the portal. Thus, the content might have been changed to different links.
- **Technical problems:** The process of communication in teleteaching is all through networks and wireless techniques. Any small technical error may cause a huge loss to the content.
- **Milestone:** If the content in the present seminar may not be effectively produced there seems no comment, same like unidirectional method of teleteaching, where the teacher has to wait for the student's feedback to response to switch on to the next instruction. But by incorporating multidirectionalism to teleteaching includes proper planning starting from choosing the topic (s) to feedback process.
- **Trained expertise:** The lack of technical staff or trained teachers may not give fruitful results. As non-technical staff will not have supportive attitude towards using teleteaching.

There are various factors that might have restricted the proper use of teleteaching discussed as below:

*Factors related to geographical region***:** Many of the remote or geographical regions where population are scattered in remote areas, Teleteaching might be problem for them. Thus, in those regions the concept of DE, MOOCs really works and grows.

The role of Ministry of education and research: The ministry's role is a very important role in funding of the projects. But ministry will no longer be a supportive agency towards funding of

projects in schools. Instead most of their time has been devoted in taking care of the national infrastructure related to data communication. Thus, this new technology will be helpful to educational institutions to some extent.

The role of executive board for DE Distance Education in higher education: Many governing bodies have funded for the DE at university level education or at college level education. They have no role towards implementation of school education. Thus in this regard this light be a good idea of introducing teleteaching in all levels of educations at all stages.

Role of various Stakeholders: We should use various electronic and video conferencing systems not only for the higher education but for the school and graduate level also. But various factors are to be required including such as:

✓ Proper Infrastructure
✓ Co-operation from govt. and non-govt. organizations
✓ Supportive attitudes of all stakeholders
✓ Good technical assistance
✓ Teacher's expertise

RESULTS AND FUTURE WORK

As information communication technologies operates in two isochronous communications systems one is in real time interaction while other is asynchronous system that can be accessed anywhere anytime irrespective of time-constraints. But the teleteaching including video lessons or video communication is substitute for "isochronous" lectures but it does not support the "asynchronous system". In asynchronous communications such as e-mails, the electronic emails are the means for transferring the educational content, images and data that may be a substitute for video link. Thus, addition of more channels of communication increases the teleteaching quality. Thus teleteaching may effectively be used for groupware and electronic classrooms thereby increasing the chances of offering distance education through electronic resources. Thus integration of tele-teaching may effectively be used in the tele-TASK, and MOOCs platforms.

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