EMERGING TECHNOLOGY IN REDEFINING THE ROLE OF TEACHERS

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Abstract

The advent of Information and Communication Technology (ICT) has brought out many paradigm shifts in the Teaching-learning process. But the approach taken by many teachers in universities today is simply a result of the way they were taught. Typically university education has been a place to learn theoretical knowledge devoid of context. The roles which are expected to be played by teachers are The Process Facilitator, The Advisor-Counselor, The Assessor, The Researcher, The Manager-Administrator, The Designer, The Technologist And The Content Facilitator. Teachers should promote active learning thus Numerous instructional strategies may be considered when implementing the principles of active learning and these are Anchored Instruction, Collaborative learning, Problem-based learning, Cognitive apprenticeships and Case-based instruction. The university teacher can no longer confine his attention to his own private study and to the narrow world of his own student. With the new conception of the wider duties and responsibilities, the duties and responsibilities of university teacher have also expanded.

Introduction : The Era of Globalization has brought out changes at all levels viz primary, secondary and tertiary level of education. The reality in most of the universities is that one can find large lecture rooms, centre-staged with discipline experts, continue to transmit theoretical knowledge in big-sized chunks for passive learners to receive and consume. Collaboration is not encouraged or required. The approach taken by many teachers in universities today is simply a result of the way they were taught. Typically university education has been a place to learn theoretical knowledge devoid of context. The teachers transmit the facts and skills that they are required to absorb and regurgitate on exams. Text books and lecture notes are the main resources for study, with the practice of retention and transfer of knowledge was assumed but rarely

assessed. For many students a 'surface' approach of learning (Marton & Saljo, 1976) assured success. In this era of globalization the teachers have to change their roles to support the learning needs of students at higher level. The advent of Information and Communication Technology (ICT) has brought out many paradigm shifts in the Teaching-learning process. The use of the Internet has risen three times more quickly than any comparable development (Economist, 1999) such as radio, the personal computer and television. However, while those technologies have impact only minimally on education practice, the Internet is positioned to dramatically affect the way we teach and learn. The process has been predicted by Pittinsky (2002) to be "a fundamentally transformed way of delivering and supporting the instructional process in higher education". While the promise of the Internet is exciting to educators, as with any new innovation, it requires a substantial rethinking of traditional approaches and roles. The rapid uptake of the technology has meant that school and university administrators are no longer content to allow the early adopters set the pace of change within their institutions. The online delivery of units and courses has now become central to universities' strategic planning. Arguably, the momentum to use the Internet has become a top-down, policy-driven push, rather than a bottom-up diffusion of good educational innovation and practice. Research derived from new learning theory is clearly showing that online delivery is no more a threat to teachers than teaching machines were in 1968, exemplified by Keller in his ironically titled article, "Goodbye teacher" (Keller, 1968). Thirty years on, the role the teacher plays is still critically important to the success of student learning (Palloff & Pratt, 1999; Willis & Dickinson, 1997). However, if the traditional role of the university teacher is simply transferred to the online learning environment, an exciting opportunity will be missed. A crucial aspect of effective online learning may hold the key to the changing role of the university teacher. Wade (1994) pointed out that the promotion of learner autonomy means increased responsibility for the student which, if it is to succeed, requires "a strong framework of support and guidance for the student from the outset".

Redefining Role of University Teachers

The process of redefining and developing the crucial role of the teacher in student learning is one where the teacher provides coaching and scaffolding support as a central and important pedagogical element, and as an alternative to didactic forms of teaching. Some of the roles identified are:

• *The Process Facilitator:* Concerned with facilitating the range of online activities that are

supportive of student learning.

- *The Advisor-Counselor:* Works with learners on an individual or private basis, offering advice or counseling to help them get the most out of their engagement with the course.

- *The Assessor:* Concerned with providing grades, feedback, and validation of learners' work.

- *The Researcher:* Concerned with engagement in production of new knowledge of relevance to the content areas being taught.

- *The Content-Facilitator:* Concerned directly with facilitating the learner growing understanding of course content.

- *The Technologist:* Concerned with making, or helping to make technological choices that improve the environment available to learners.

- *The Designer:* Concerned with designing worthwhile online learning tasks.

- *The Manager-Administrator:* Concerned with issues of learner registration, security, record keeping and so on.

Competences Required for Teachers

Academic staff in their teaching role faces probably the biggest set of challenges to their working patterns. They bear the ultimate burden of having to "do more with less", as student numbers increase without matching funding. They are being asked to teach a wider range of students (mature, disadvantaged, part time etc) in different ways involving new methods and technologies. Their accountabilities are being sharpened and made explicit, as quality reviews and assessments examine what they do. In this harsh environment a model teaching staff member would have the following competencies.

- Awareness and understanding of the different ways in which students learn.

- Knowledge, skills and attitudes relating to assessment and evaluation of students, in order to help student learn.

- Commitment to scholarship in the discipline, maintaining professional standards and knowledge of current development.

- Awareness of IT applications to the discipline, both as regards access to materials and resources worldwide and as regards teaching technology

- Sensitivity to external "market" signals as regards the needs of those likely to employ graduates of the discipline

- Mastery of new developments in teaching and learning, including an awareness of the

requirement of "dual mode" tuition with face to face and distance learning using similar materials.

- Customer awareness, as regards the views and aspirations of stakeholders, including student; understanding of the impact that international and multi-cultural factors would have on the curricula;

- Ability to teach a diverse range of students, from different age groups, socio-economic backgrounds, races etc, throughout a longer day.

- Skills in handling larger numbers of student in formal lectures, seminars or workshops than hitherto, without the loss of quality;

- Development of personal and professional "coping strategies". (V.C. Pandey, 2005)

Instructional Strategies Associated with Active Learning

Numerous instructional strategies may be considered when implementing the principles of active learning. Some of which are,

- Anchored Instruction
- Collaborative learning
- Problem-based learning,
- Cognitive apprenticeships
- Case-based instruction.

Anchored instruction is grounded in a realistic event or problem that is meaningful and motivating to students, is complex, requires the consideration of multiple perspectives and solutions and the use of multiple processes, and facilitates collaboration, cooperation, and negotiation. Anchored instruction requires putting the students in the context of a problem-based story. The students "play" an authentic role while investigating the problem, identifying gaps to their knowledge, researching the information needed to solve the problem, and developing solutions. The teacher facilitates and coaches the students through the process.

Collaborative learning is built on the need for students to collaborate with each other to share perspectives, solutions, and plans related to a complex task or scenario. Collaborative learning requires individual accountability within a group situation and parallels expectations in the modern workforce. Collaborative learning is a situation in which two or more people learn or attempt to learn something together. More specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by

sharing experiences Often, collaborative learning is used as an umbrella term for a variety of approaches in education that involve joint intellectual effort by students or students and teachers. Thus, collaborative learning is commonly illustrated when groups of students work together to search for understanding, meaning, or solutions or to create an artifact or product of their learning. Collaborative learning activities can include collaborative writing, group projects, joint problem solving, debates, study teams, and other activities.

Problem-based learning is grounded in the process students go through to solve a realistic problem and requires self-directed learners and acquisition of content knowledge. **Problem-based learning** (PBL) is a student-centered pedagogy in which students learn about a subject in the context of complex, multifaceted, and realistic problems. Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor is that of facilitator of learning who provides appropriate scaffolding of that process by (for example), asking probing questions, providing appropriate resources, and leading class discussions, as well as designing student assessments.

Case-based instruction involves the use of stories or teaching "cases" to facilitate contextual knowledge and understanding. Cases are best used to teach people about realistic decision-making situations. For instance, cases help train pre-service teachers, instructional designers, doctors, lawyers, business people, and others, how to respond to actual problems they will encounter in their fields. Case-based learning is promoted in many universities because it teaches important concepts and facts within the context of authentic or real-world situations. Context is thought to be more motivational to learners and it provides a concrete framework from which complex concepts can be more easily understood. Further, case-based learning reduces the potential for "inert" knowledge. Inert knowledge is learned information that is difficult or impossible to apply to realistic situations, because it was learned in a "chunked" fashion, typically out of all context or relation to reality. The familiar context may help the student understand the relevance of that information. Isolated facts are more difficult to integrate within memories than facts taught in a realistic context.

Impact of Technology on the Role of Teachers

Educational technology provides an excellent medium for creating and implementing effective anchored instruction because: visual formats allow students to develop pattern recognition skills;

technology allows a more vertical representation of events than text; it is dynamic, visual, and spatial; students can more easily form rich mental models of the problem-solving situations and technology has random access capabilities. All this allows teachers to almost instantly access information for discussion.

Impact of the Internet

E-Life

Following closely on the heels of the digital revolution, the Internet is effecting a transformation in the way ordinary people go to school, do business, and talk to each other.

Web-delivered e-learning

The web is powerful information -delivery, mechanism. It has lots of information, which it can get to the learner fact the crucial issue is there must be real value to the information that is being posted on the web. The web is a kind of library, a storehouse of information to go to, in order to get something to read and something to do. The web is also about Instantaneous access.

Digital Libraries

A digital library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks. A digital library is a type of information retrieval system. The advantages of digital libraries as a means of easily and rapidly accessing books, archives and images of various types are now widely recognized by commercial interests and public bodies alike. Traditional libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library is much lower than that of a traditional library.

Intelligent Tutoring Systems (ITS)

Intelligent tutoring systems are computerized educational systems that incorporate artificial intelligence methods. The original motivation for the development of computerized tutors was the observation that one-to-one human tutoring is much more effective than classroom teaching. The major components of a typical ITS are therefore an expert (or domain) model, student model and tutoring model. The expert model should be able to solve the problems the tutoring module submits to the students. The tutor module controls the interaction with the student, based on its

teaching knowledge and comparisons between the student model and the domain knowledge. The student model reflects what the machine can infer about the student's cognitive state.

The learner - Centered Classroom

In the learner - centered classroom, teachers are required to teach in new ways. Their role is designer of experience and questioning, not deliverer of information. They must focus on helping students develop strategies to make sense of the world around them rather than providing student switch rule sand truths to apply in different situations. Teachers must promote connections of previous ideas and ensure accurate interpretations and interconnection among understandings rather than focusing on discrete packets of subject matter. They must learn to use questions, demonstrations, lectures, simulations and assessment as tools to support student learning, leaving behind more traditional notions of how teaching should look.

Telementoring

Telementoring is mentoring at a distance. More specifically, it is a type of long-term, online relationship between an older, experience person and one or younger, .less experienced people. In it most common usage, the term "Telementoring" refers to a practice in which teacher purposely orchestrate long-term, online relationships between their own students and a number of knowledgeable volunteers. Telemeters may be drawn form the community surrounding a school or form around the world; they can provide many different forms of assistance to students, form the provision of career advice to guidance on a specific school project or investigation. Online mentoring, also called "e-mentoring" and "telementoring," holds great potential for both learners and teachers.

The main functions of a university are the maintenance of high intellectual standards by means of teaching and examining; the encouragement of original research and investigation and addition to human knowledge; the formation of character so that all who come out of a university may bear the stamp of intellectual honesty and moral integrity; the training of youth for their work in life, whether definitely for a vocation or generally for any task that they may be called upon to undertake. The universities should undertake also Settlement Work, establish literacy centers, have a plan of adult education, and by means of social service associations and leagues get into closer touch with the villages, so that the rest of the community may feel bound and attached to universities.

The university teacher can no longer confine his attention to his own private study and to the narrow world of his own student. With the new conception of the wider duties and responsibilities which have fallen to the share of the Indian universities since independence, the duties and responsibilities of

university teacher have also expanded. He has to keep pace with the advance of knowledge in his own and allied fields of study and for this purpose he has to remain in constant touch with the work of teachers in other universities by meeting them in conferences and seminars and by travel. (Sharma.S.K. & Usha Sharma, 2005).

Thought of presenting the second vision for the nations with the focus that India has to be transformed into a developed nation in two decades i.e. by 2020. Education, particularly higher education, as the instrument of individuals, societal and economic transformation is well recognized now more than ever. Consequently, there has been a greater interest and investments in world opt for higher education. Present day seekers of higher education look for educational programmes with specific objectives that would add value to their services in the national and international work places. This demand for higher education with higher levels of aspirations poses new challenges to the universities that provide the educational leadership to the colleges and the research centers affiliated to them (Kalam Abdul,A.P.J 2005).

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