

TEACHERS AND THE NEW ICT CHALLENGES

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Abstract

Information Communication Technology (ICT) breakthroughs have brought new opportunities to restructure the learning and knowledge transfer environment. ICT technology has opened new avenues and brought new challenges to learners and teachers. The responsibility of learning has shifted to the learners and this allows the roles of teachers to change in tandem. However, we should not lose sight of the fact that teachers determine the quality of the learning that takes place, and not technology. This article discusses the changes that teachers would experience in this new learning environment and the implications on their pedagogic practice. It also shares what teachers say about using ICT in teaching.

Keywords : ICT, teachers' roles, pedagogic practices

Abstrak

Kemajuan dalam ICT membawa peluang baru untuk menstruktur semula pembelajaran dan alam pemindahan ilmu. Teknologi komputer telah membawa peluang dan cabaran baru kepada pelajar dan guru. Oleh itu, tanggungjawab pembelajaran telah berpindah kepada pelajar dan ini menyebabkan peranan guru berubah. Walau bagaimanapun, guru tidak boleh menafikan peranan mereka dalam menentukan kualiti pembelajaran dan bukan teknologi yang digunakan. Makalah ini membincangkan perubahan yang akan dialami oleh guru dalam alam pembelajaran baru dan implikasinya ke atas pedagogi. Makalah ini juga memberi pendapat beberapa orang guru mengenai penggunaan ICT dalam pengajaran mereka.

Kata kunci: ICT, peranan guru, pedagogi

INTRODUCTION

The 21st century poses more challenges to teachers all over the world as their skills have been extended to include being creative and innovative in using technology in the classroom. Information Communication Technology (ICT) breakthroughs have brought challenges and opportunities in the field of

education which enhances Malaysia's overall competitiveness in the global arena. Malaysia intends to transform her educational system in line with the country's drive to achieve a developed nation status by the year 2020. The government has assured all Malaysians that they would not be left out of ICT development, regardless whether they live in urban or rural areas.

ICT is not elitist – it's a programme for all. It's been introduced in the rural areas. It's been introduced in schools – whether the schools is in town or in village (Prime Minister Abdullah Ahmad Badawi, *New Straits Times*, January 31, 2005)

With this assurance by the Prime Minister, there is surely an urgent need for teachers nationwide to make necessary adjustments to their teaching. Towards this end, Malaysia has also made concerted efforts to develop a competent knowledge-based economy with ICT facilitating development.

ICT is transforming the teaching and learning environment in a dramatic way (Driscoll 1998; McCormack & Jones 1998; Brooks et al. 2001). It provides a revolutionary tool in education. ICT disseminates information in a swift and effective way. Over the years, teachers have used traditional approaches and teaching materials to deliver knowledge. As the world moves closer to cyber age, teachers need to keep abreast with the advances in technology and innovative pedagogical approaches. ICT with reference to the Internet has also impacted on learning, teaching and training (Muhammad Kamarul 2003). With these changes, new challenges in education need to be addressed (Maddux & Willis 1997; Dlodo & Sithhole 2001; Liaw 2004; Wong et al. 2005).

Teachers need to determine whether it is feasible to transfer traditional approaches, methods and materials to the electronic mode. The new approaches need to be implemented in a creative way. In other words, teaching and learning in the new environment require complex adjustments and substantial rethinking. This also means that the traditional methods need to be reassessed to achieve pedagogical goals.

The teacher can be left behind with the traditional methods of teaching and learning if they are to compete meaningfully in the international arena. It is

therefore necessary for them to be ready to accept the ICT which comes with many challenges. In general, ICT consists of the Internet/web, multimedia and computer. It comes in different forms such as direct instruction, self-instructional textbooks, instructional video, media-computer-based training, interactive multimedia, web-based learning and e-books. This list is by no means exhaustive as the forms keep changing.

The key focus and emphasis of this article is to discuss the changing requirements and new possibilities and challenges experienced by teachers in integrating ICT. In addition, the voices of several teachers on the use of ICT in teaching are shared in this paper.

THE CHANGING PEDAGOGY

With the old pedagogy, teachers normally teach facts from books. The teachers are seen as a fountain of knowledge that has to be passed down to the students. On the other hand, the new pedagogy stresses on the teaching of strategies of deciding what information is needed. The teachers' roles are as guides or facilitators to help learners to be skilled in selecting, accessing, evaluating, organising and storing information. These strategies are important to manage vast amounts of information. The teachers also need to manage the time and courses and to construct knowledge autonomously in virtual learning communities. Besides performing this new role, the teacher is also the motivator of the whole learning process, and can facilitate intellectual group discussion. The teacher must reflect critically on the context of learning (mediated by technology), the methods (different than those used in the classroom), the students, the teacher's own computer literacy (hardware, software and technical support needed), and other matters pertaining to digital literature.

Learning via technology has many advantages. The Internet provides current and up-to-date data. It stores vast amount of information that can be retrieved quickly and easily. For language learning purposes, it provides text in authentic language, unlike the contrived language usually found in books.

Technology enables the teacher to transmit more information to a larger number of students in a shorter time. One should also ask: are teachers well versed in applying the technology to fulfil the needs of education?

Effective use of ICT also means a change in the school culture. This technology has caused teachers to change their methods and strategies. This is because ICT and specifically the Web is not only an effective means for disseminating instructional material, but it can provide a context for effective collaborative material development which improves knowledge transfer.

THE CHANGING ROLES OF TEACHERS

Teachers have to play their part to facilitate a learning environment that will open learners' minds to new possibilities. As Zepp (2005) points out, teachers should relate the goals of education with effective use of ICT. In other words, teachers must be aware of the impact of technology on education and the required changes to enhance their teaching. They need to adjustment their teaching process to suit this new ICT environment.

The teacher's role in an ICT environment is that of a facilitator instead of being a purveyor of knowledge. This transformation from the old to the new method of delivering knowledge is a global phenomenon. The modern teacher in the ICT era is no longer described as 'a sage on the stage' but a 'guide by the side'. Teaching then can be a transforming experience as it opens new windows to the world and creates a lifetime of opportunities. With ICT it implies the changes in the teacher's role not just as a teacher but as a monitor of participation and a practitioner of research, all of which possibilities are accelerated by the technological resources.

Queiroz (2003) insists lecturers or teachers need to go through a continuous process of competency improvements to meet the demands of lifelong learning for their professional development. Without this, teachers may be complacent and merely duplicate their practices electronically. If this happens, learners would not benefit from the technological advancements

happening around them. Therefore, ICT training for teachers should not be merely to use technology per se.

Berge (1996) and Palloff & Pratt (1999) listed several recommendations for teachers: pedagogical (use of discursive resources as to facilitate learning), social (incentive of human relations among members of the group), managerial (establishment of general procedures for discussion and development of activities) and technical (transparency of technology for an adequate relation between the system, the software and the interface selected).

As for teachers' roles, Noriah Ishak et al. (2000) listed a few considerations that teachers and lecturers have to make to optimise the use of IT. Tools such as chat rooms, e-mail and web forums need to be designed to enhance interpersonal and social skills. As the teachers' roles change, they must ensure that a good learning environment exists at all times.

A good learning environment should not neglect human needs to socialise and interact with one another. A good learning environment needs to co-exist with a good teaching environment. This can be achieved if the teachers have a positive attitude towards ICT (Moon & Kim 2001). Instructors, teaching using the electronic mode must have a positive attitude to motivate, facilitate and guide learners (Pramela 2006).

Loveless & Ellis (2001) explains that the impact of technology on pedagogy has created major differences in terms of teacher roles, teaching activities, learning activities and learner roles. The changes have led to a redefinition of learning and the learning environment.

Naidoo (2003) suggests that ICT can also be used to support teachers who lack adequate skills and content knowledge, thus contributing to improving the quality of learning. Teachers who are hesitant to sit in classrooms or feel they are too old for the formal education system would find the interactive and asynchronous nature of ICT helpful for their professional development.

This article continues to discuss important issues concerning ICT and pedagogic implications. Lee (2000) lists some reasons why ICT is not used in classrooms. According to him, there are financial barriers, availability of

computer hardware and software, lack of technical and theoretical knowledge and reluctance to accept the technology.

ACCEPTANCE OF THE NEW LEARNING ENVIRONMENT

Significantly, in terms of impact, the emerging pedagogical paradigm represents an order of change never previously experienced. Very few of the current generation of teachers have themselves been students with an ICT learning environment using online learning or web-based programmes. Teachers and lecturers alike have progressed from the experience of learning in the classroom to teaching in the classroom accustomed to traditional methods of learning. A sudden change from what is familiar to something different and new may result in resentment or rejection. Building on this, Charatdao Intratat (2004) notes that popularity of IT, especially the use of computer and the Internet, is widely appreciated among university students but the popularity of computer-assisted language learning (CALL) among Thai teachers and students is still questionable. Very often we hear learners described as reluctant but teachers too can be reluctant in accepting something new. This is highly probable in the Malaysian context too. Perhaps this calls for more empirical studies in this area.

APPLYING THE SKILLS AND KNOWLEDGE

The emergence of pedagogy with emphasis on ICT raises a host of issues for teachers concerning the complex nature of computer-based learning. These teachers have richer experience in conventional classroom but may face difficulties to transfer current teaching practice to the ICT environment. How do they then establish a satisfactory relationship and interact effectively in this learning environment? These are just some of the initial concerns. Clearly, both the operational requirements of the new technology, as well as the pedagogical implications of using it have a great impact on the teacher. How does one acquire the functional skill, or even determine which skills are essential, to teach in this environment? How can ICT be used to enhance the student learning experience? Norizan Razak's (2001) survey suggests English language

educators in schools are still far from ready and are not competent in handling tasks related to facilitating students for network-based activities. She proposed that these skills should be addressed for professional development of language educators. Pramela (2006) explains that both learners and instructors need appropriate computer skills and knowledge to experience meaningful learning.

TRAINING AND MOTIVATION

Bialo & Solomon (1997) share their view that critics have cited less promising students as proof that ‘technology is not working’. However, those with open minds acknowledge the range of results and say that asking questions like ‘does technology work?’ is not a positive move to find out the impact of technology and learning but asking “under what conditions and how does it work?” is a more promising move.

A closer look at research shows that technology is most effective when teachers receive more training in its instructional applications. When used to supplement a carefully thought-out programme of classroom instruction, it should include appropriate amount of learner control, helpful feedback and sound pedagogical design. Pramela (2006) emphasises on the importance of feedback in teaching and learning in the electronic media because helpful feedback given to learners means creating social presence which is crucial in the virtual mode of learning.

Besides developing these skills, teachers must also be prepared to go through a continuous learning process to improve teaching efficiency. This is because ‘technology cannot replace good teaching but it can enhance it’.

In the online process, teaching concerns the relationship between the teacher-student and student-knowledge. The student is guided to learn to be more autonomous for his or her own learning. This mode of learning leads the teacher to find educational practices that stimulate this type of online learning.

Teacher trainees are the future generation of teachers in schools and universities need to be innovative in using ICT. Thus, it is important to find out their attitude towards ICT to pursue professional careers as teachers. Wong et

al. (2005) conducted a study of Malaysian pre-service teachers and emphasised that teachers must have a positive attitude towards ICT and use the technology effectively in their teaching. Trainees' perceptions on the use of Internet as a tool for teaching have also been encouraging. They have been positive on the use of computers as learning and teaching tools in Malaysian schools (Mohamed Amin Embi et al. 2000).

The availability of the web has prompted educators to utilise online facilities during material presentation in a big way. However, many of them do not have access to the tools or skills needed for further teaching development. A study on online learning found that there is a shortage of localised tools for English language Teaching (ELT) materials (Mohamed Amin Embi et al. 2001). There is a need for further work on this area to investigate whether other subject teachers also face similar situations.

INFRASTRUCTURE AND ON-GOING TECHNICAL SUPPORT

Having the right infrastructure and technical know-how are important factors in training teachers in this ICT era. Therefore the Ministry of Education must find effective ways to support teachers to become effective teachers in this new ICT environment. The use of ICT in the education system requires different levels of technical support. Perhaps the biggest challenges associated with the web are uncertainties that often accompany technological difficulties. In addition, lack of knowledge in relation to hardware and software causes frustrations that can also mount from an inability to connect to the network.

Policy on using ICT in education needs to identify the levels of technical support necessary and outline how to address them. For example, the first line of technical support is based within the school, requiring teachers with technical training. Further technical support in facilities and contracts with local technicians and companies must be considered for the policy.

OTHER CONCERNS

One major problem that needs attention is the lack of finance faced by schools. The high cost of hardware, software, maintenance and training for staff development need money. Traditional methods do not impose high purchase and maintenance costs of equipment.

Secondly, the most significant items of ICT are computer hardware and software. Only limited high quality software is available and this does not meet the demands for the new technologies in education. Underlying this problem is the lack of knowledge of right materials that can be used to promote different kinds of learning. Not many teachers are trained to design and develop software suitable for different level of students. Teachers who undergo such training at colleges and universities do not make it a point to use and impart their knowledge to fellow colleagues. Lack of time and administrative difficulties are often given as reasons for this.

There is also a lack of both technical and theoretical knowledge on the use of technology. Lecturers need to know how to integrate the technological tools with learning. They should also be knowledgeable on approaches and presentations that go hand in hand with ICT.

Schools need to accept changes which come in learning and teaching technology. Knowledge in technology has to be developed over time with commitment by teachers. The following section shares some of the responses of teachers on ICT.

RESPONSES OF TEACHERS ON ICT

It is interesting to hear what several in-service teachers say about ICT. A total of nine in-service teachers, from the Bachelor of Education TESL Programme, Universiti Kebangsaan Malaysia were interviewed to find out their views on ICT. These teachers who are currently in their final year were asked '*whether ICT helps in their teaching*'. Their views are reported as follows:

Teacher 1

ICT has a positive impact for me as a teacher. It helps me to teach better.

Teacher 2

We cannot use the Internet in the classroom but I download materials and use them in my class. Our classrooms are not wired.

Teacher 3

Students are more interested in what I have to present to them and they are not sleepy anymore. Multimedia is interesting.

Teacher 4

Using ICT is definitely a change. I even gave my students assignments and quizzes online.

Teacher 5

I still use the traditional classroom method because the computer labs are always booked by others.

Teacher 6

If we can use the computers fully then it is easier in the teaching process.

Teacher 7

The problem is not using ICT but using the teaching and learning time meaningfully and with minimum waste of time.

Teacher 8

We need to spend more time in front of the computers and that means a lot of sacrifice.

Teacher 9

ICT is useful but teachers need more time to search for the right material.

Generally these voices seemed very positive. The teachers viewed ICT to have a positive impact on teaching. However, we cannot take for granted that there are no setbacks with regard to facilities, acceptance and application when ICT is concern.

CONCLUSION

The impact of ICT on education has definitely posed challenges to teachers and lecturers to improve their teaching. As educators they must firstly, decide their goals and objectives based on educational approaches that integrate ICT. The goals must be in line with the changes in education and the learning environment of the students. In other words, teachers must look at the learners' real needs to achieve effective learning outcomes.

Secondly, decisions must be made on the approaches to teaching – how should teachers teach? What skills do learners need? How should students be taught in relation to ICT? Teaching should be in an ICT setting with up-to-date computers, multimedia, Internet access and computer labs. The materials and activities, related to ICT and the philosophy that underlie it, need to be developed.

Finally, preparedness for the impact of ICT on pedagogy requires sufficient knowledge and skills. It is vital for teachers to be aware of their new roles and their students' needs to meet the challenges of ICT. Our teachers must boldly move towards ICT in teaching and learning. To many teachers used to the traditional methods, using ICT is a giant step. For others it is a necessary beginning.

References

- Berge, Z.L. 1996. The role of the online instructor/facilitator. http://www.emoderators.com/moderators/teach_online.html. (3 October 2002).
- Bialo, E.R. & Solomon, G. 1997. Open your eyes: the evidence is there! *Technology and Learning* 18(2): 70- ?
- Brooks, D.W., Nolan, D.E., & Gallagher, S. 2001. *Web-teaching: A guide to designing interactive teaching for World Wide Web*. New York: Kluwer Academic.
- Charatdao Intratat. 2004. Investigation on IT autonomous learning: A case study from Thailand. Paper presented at UNTELE Conference Compiègne, France, 17-20 March 2004.

- Dlodlo, N. & Sithole, N. 2001. The Internet as a tool for revolution in education in Africa: A dream or reality. Paper presented at the World Conference of Educational Multimedia, Hypermedia and Telecommunications. <http://dlaace.org/8489>. (4 November 2004).
- Driscoll, M. 1998. *Web-based training: Using technology to design adult learning experiences*. San Francisco: Jossey-Bass.
- Lee, Kwang-wu. 2000. English Teachers' Barriers to the use of Computer-assisted Language Learning. *The Internet TESL Journal*. VI (12), December. <http://iteslj.org/Articles/Lee-CALLbarriers.html> (14 November 2005).
- Liaw, Shu-Sheng. 2004. Consideration for developing constructivist web-based learning. *International Journal of Instructional Media*, 31(3), 309-322.
- Loveless, A. & Ellis, V. 2001. ICT, pedagogy and the curriculum: Subject to change. London: Routledge.
- Maddux, C., Johnson, D. & Willis, J. 1997. *Educational Computing*. Boston: Allyn and Bacon.
- McCormack, C. & Jones, D. 1998. *Building a web-based education system*. New York: Wiley Computer.
- Mohammed Kamarul Kabilan. 2003. Online professional development of teachers: An examination of structure and trends. *International Journal of Instructional Media*. 30(4): 367- 383.
- Mohamed Amin Embi, Jamaluddin Badusah, & Mohd. Isa Hamzah. 2000. Trainees' perception on the use of Smart Net as an Internet tool for ELT. Proceedings of the Malaysian International Conference on English Language Teaching.
- Mohamed Amin Embi, Ramlee Mustapha & Sidek Abdul Aziz. 2001. Open VirTEC: a virtual instructional delivery system. *Malaysian Journal of Distance Education*. 3(2): 44-56.
- Moon, J.W. & Kim, Y.G. 2001. Extending the TAM for a World Wide Web context. *Information and Management*. 38: 217-230.
- Naidoo, V. 2003. ICTs in African Schools. Paper presented at A Pan-African workshop focussing on using ICT to support the education systems in Africa Gaborone, Botswana, 28 April 2003.
- Noriah Ishak, Siti Rahayah Ariffin, Rosseni Din & Aidah Abdul Karim. 2002. Expanding traditional classroom through technology: A collaborative learning process. *Journal of Teacher Education*. 12: 17-28.
- Norizan Razak. 2001. Online delivery system: Setting baseline for professional development of educators. *Malaysian Journal of Educational Technology* 1(2): 47-52.
- Pallof, R.M. & K. Pratt. 1999. Building learning communities in cyberspace: effective strategies for the on-line classroom. PLACE: Jossey-Bass Publishers.
- Pramela, K. 2006. Factors affecting the online delivery of English Language courses in a virtual learning environment. Unpublished PhD thesis, Universiti Putra Malaysia.

- Queiroz, V. 2003 Roles and competencies of online teachers. *The Internet TESL Journal*. IX(7), July. <http://iteslj.org/Articles/Queiroz-OnlineTeachers.html>. (14 November 2005).
- Rozana Sani. 2005. ICT facilities open to all. *NST Computimes*. 31 January 2005. Pp. 14.
- Wong S.L., Ng, S.F., Mokhtar Nawawi, & Tang, S.H. 2005. Experienced and inexperienced Internet users among pre-service teachers: Their attitudes toward the Internet. *Education Technology & Society*. 8(1): 90-103.
- Zepp, R.A. 2005. Teachers perceptions on the roles on educational technology. *Educational Technology & Society*. 8 (2): 102-106.