

Utilization of Ict by Moral Education Teachers

Ilhavenil a/p Narinasamy[1], Wan Hasmah Wan Mamat[2]

[1] venil69@yahoo.com Foundational Education and Humanities Department Faculty of Education, University of Malaya

[2] wanhasmah@um.edu.my Foundational Education and Humanities Department Faculty of Education, University of Malaya

ABSTRACT

Studies show that information and communications technology (ICT) integration in many classrooms today enhances students' learning and skills acquisition. Thus, it is necessary for teachers to integrate ICT in their classrooms. This paper discusses the need to incorporate ICT in Moral Education. This study adopts the qualitative approach design using non-participant observation, semi-structured interviews and teachers' journals to gain insights into the teachers' employment of ICT in their teaching. Data were analyzed based on codes, then were later arranged into categories and themes. The results highlight the lack of utilization of ICT by the teachers in teaching Moral Education. This revelation indicates that the training of teachers is deemed vital to make teachers and school authorities aware that ICT is a pertinent pedagogical tool to provide a positive learning environment.

Keywords: Moral Education, teachers, information technology, computer technology integration

INTRODUCTION

It is a well-known fact that ICT functions as a powerful tool to support students' collaboration and knowledge building (Kubiatco, Usak, Yilmaz, & Tasor, 2010). In many developing countries, ICT has been increasingly accepted in the education system as many have perceived that ICT can enhance their opportunities and skills to succeed in multidisciplinary fields (Ottesen, 2006; Tambulasi, 2009). Education plays a fundamental role in determining the level of ICT usage in developing countries (Tambulasi, 2009). In Malaysia, incorporating ICT in schools is not new as the government has plans to make the country an ICT hub in line with the national objective of Vision 2020 (Ross & Ali, 2011). As such, expectations on ICT use in all schools are high, based on the policies of the Ministry of Education, the syllabuses of various subjects, and the authorities involved, directly and indirectly to educate a highly competent, skillful and knowledgeable workforce in the country. Rohani (2002) affirms that ICT must be used as a teaching and learning tool in the classrooms in order to make Malaysia a fully developed nation by 2020.

In a particular subject such as Moral Education, it is noted that there has been a dearth of literature pertaining to incorporation of ICT in teaching this subject in classrooms. Cooper (2011) asserts that multimedia interactive learning can complement human interaction in the teaching and learning process in school classrooms, especially in Moral Education or the teaching of values as computers offer 'sole attention, responsiveness, and non-verbal and multisensory communication' (p. 206). Leong and Tan (2008) argued that ICT such as audio-visual media could generate student interest hence fostering successful learning. Classroom use of can enhance students' understanding of subject matter, promote collaborative and lifelong learning, increase team building and support students to think deeply and creatively (Jimoyiannis & Komis, 2007). In order to enhance student learning, teachers' role in the classroom is important in realizing these goals. Although studies have shown that teachers support ICT use in the classrooms, the technology is underutilized and poorly integrated in classroom teachings (Cuban, 2001; Keengwe, Onchwari & Wachira, 2008). However, ICT has been increasingly important in education and it is seen necessary for teachers to equip themselves with technological skills to support students' learning. Therefore, in order to accomplish this task, teachers need to incorporate ICT as an integral part of their teaching strategies in the classrooms (Lang, 2000; Hennessy, Ruthven & Brindley, 2005). The purpose of this paper is to explore how teachers can incorporate ICT in the teaching of Moral Education in their classrooms. Thus, the research question is: How do the teachers incorporate ICT in the teaching of



Moral Education?

Teachers and ICT in Classrooms

In this era, the extension of a teacher's duty not only focuses on acquisition of knowledge and content specific subjects but on developing students' character (Lickona, 1993). These days, the teacher is not only knowledgeable in the subject matter but should also possess ICT skills as part of her pedagogy (Krish, 2008; Webb & Cox, 2004). Teachers can facilitate students' learning in a number of ways where ICT-related pedagogies have become an important element of practice in classroom teachings (Webb, 2002; Webb & Cox, 2004).

Literature has shown that most ICT-related subjects focus more on Science, Mathematics and English in primary and secondary education but very little on humanities especially in secondary schools (Webb & Cox, 2004). In Malaysian schools, many researches on ICT are directed towards Mathematics, Science and English subjects (Gopala et al., 2012; Omidinia, Masrom, & Selamat, 2012; Osman & Bakar, 2012). To- date, only a few studies or research have been carried out on ICT in Moral Education, either in primary or secondary education. Only researches on moral and ethical issues in information technology have been found in the literature (Harris, Lang, Yates, & Kruck, 2011; Stahl, 2011)

A few studies have shown that ICT is beneficial when combined with good and proper teaching (Cox & Abbot, 2004). McBer (2000) found that teachers who display highly professional characteristics combined with good teaching, including proper utilization of ICT, result in students progressing well in their studies. However, reports have shown difficulty in describing effective teachers using ICT (Brown et al., 2001; Moseley et al., 1999).

Studies revealed aspects of teachers' beliefs and pedagogical reasoning in primary subjects such as Science, Mathematics and English. Yang (2012) and Clements (2000) displayed teachers' knowledge and understanding of ICT coupled with effective teaching that enhance students' learning. However, Ottesen (2006) argued that knowledge of ICT acquired by preservice teachers at the universities was not put in practice when they taught in schools. In fact, in most schools, many teachers did not integrate ICT in their planning and practice as part of their pedagogical concerns in their classrooms (John & Sutherland, 2005, Keengwe et al., 2008). Their reasons for not incorporating ICT into their teachings were: students lacked mathematical skills and process; students lacked skills to reflect as technologies would hasten the subject and practical laboratory-based activities would not materialize as simulations have taken over.

Moreover, Kennewell, Tanner, Jones, and Beauchamp (2008) found that ICT did not really facilitate students' learning and teachers' practice was the same all the while. Ineffective teachings remained although the teacher's role was seen as helping students grasp subject matter, and stimulate cognitive engagements of students where their mental tasks were being challenged with ICT use. One main reason for resisting ICT usage is it required extensive investments of time; the teachers could not live up to the demand (Loeding & Wynn, 1999).

Although studies have reported that teachers have positive regard for integrating ICT in their classrooms, their inexperience of ICT skills and naivety on pedagogical methods, coupled with lack of support and training, hinder ICT application in their classroom teachings (Hu & McGrath, 2011). Therefore, continuous effort in providing ICT-related training to teachers has been taking place although Hargreaves and Fullan (1998) asserted that teachers' attitude that make up quality teachers is the salient point for successful ICT implementation in the classroom.

Knowing that ICT integration in the classrooms brings desired results in students' leaning with the teachers' right attitude, this study looks at how Moral Education teachers integrate ICT in their teachings.



METHODOLOGY

Setting

This multiple-case study involved four secondary school teachers in a span of six months. Observations and interviews were done on those four teachers who taught in four different schools in a state in Malaysia. Besides, the teachers were also told to reflect upon their teachings in their journals. Permission was sought earlier from the principals of various schools to get the consent from the teacher participants. Two approval letters were obtained from the Educational Planning and Research Development (EPRD) division and the State Education Department to gain entry into the schools with the principals' green light.

Participants

Four experienced teachers namely two Excellent Teachers and two non-Excellent teachers participated in this study. All of them had at least five years' teaching experience. Two different categories of teachers were selected to determine whether differences in the teaching approaches of those teachers could provide rich and interesting information (Suseela, 2006). A multiple case study was chosen as we could gain authentic, holistic and meaningful understanding of the actual events in the classrooms (Creswell, 2008; Yin, 2003).

Bing is a female teacher who has been teaching Moral Education for the past twenty years. She has shown genuine interest in her students' welfare, even after school hours. Her dealings with other teachers and students demonstrated that she is positive-minded, open to ideas, and a believer in many approaches to teach Moral Education in interesting ways such as board games, drawing, role-plays, sketches, watching YouTube videos and group discussions. Bing believes in incorporating ICT in her lessons. She has also obtained a Master's degree in Instructional Technology in 2009 which explained her expertise in using technology devices in the classroom.

Agnes has been teaching Moral Education for the past thirteen years although she is a Geography graduate. She enjoyed teaching this subject as she found it was interesting to relate a lot of issues to the students. Agnes has a strict personality but is soft-spoken. She believes in molding students through this subject, however, she also felt that she did not have enough time for instilling values in the students. She maintained that she could not do much as passing the exam was always their priority. She firmly stated, '…really that one you cannot do much because most of the time we teach them how to pass the exam. We instill inside them the moral values we thought that they learn but towards the end we also want them to pass the exam.'

Rita, an Excellent Teacher for Moral Education has taught for twenty-five years and is the most senior in this field. She was awarded the Innovative Teacher in Moral Education at National Level (second place) in 2005, besides winning the same award twice at the district level in 2005 and 2006. She has also won the Innovation Award at the school level for the past three consecutive years. A teacher with a sense of humor, Rita believes in being proactive to devise various methods for her students to love the subject such as showing commercials on YouTube as a set induction in her lessons. In fact, she has encouraged her upper form students to take part in an ICT competition where they have to produce a 15-PowerPoint slide presentation on moral issues. Besides being caring and motherly, she opined that Moral Education should be project-based or hands-on activities where students should be tested cognitively and affectively.

Sammy, the youngest teacher participant, who is also a female, has been teaching Moral Education for the past nine years. She was the only teacher participant who has taken Moral Education as a second method in obtaining her university degree. Sammy was awarded the *Excellent Teacher* in Moral Education in 2009. She was also awarded Excellent Teacher at the school level in 2005. Like Rita, Sammy loves teaching Moral Education because she could see the changes in her students. Agreeing with Agnes, Sammy felt that the subject is too exam based as she has to finish up the syllabus for exam purposes. Therefore, it impedes her desire to do more group work as she said, 'I want the students to do lots of activities'.

Data sources and analysis

Nine to ten non-participant observations were done on each teacher, approximately with the duration of 1 hour ten minutes per lesson within a period of six months. All lessons could not be video-taped as the teachers, except for Rita, did not give their consent. Five to seven semi structured interviews (approximately 544 minutes) were carried out on each teacher to gain insights and uncover their beliefs on integrating ICT in their teachings. Interviews were conducted in a quiet classroom or in the staff room. All teachers' personal journals were reviewed at intervals to gain understanding of their thoughts and feelings.

After each classroom observation, fieldnotes were expanded and later uploaded in NVivo 8 software. The same goes for the interview transcripts and journal entries. At the end of data collection, similar patterns of how the teachers displayed caring towards their students were able to be detected from the various sources of data. However, for the



use of ICT in the classrooms, limited codes were found and only one sub theme emerged as it was directly linked to ICT in the classroom. It was then decided that 'Acquiring Knowledge Through ICT' be labelled under the major theme of 'Pedagogical Caring'.

FINDINGS

Acquiring Knowledge Through ICT (Information and Communications Technology)

Based on the observations and interviews conducted, it was found that the teachers have limited use of ICT in the classrooms, except for Bing. Despite not being an *Excellent Teacher*, Bing displayed her fondness in using ICT in the classroom compared to other teacher participants. Bing strongly believed that her lessons would be meaningful if delivered using ICT instead of just utilizing the text books. This was also reflected in her journal.

I felt the lesson could be improved if students have multimedia reference rather that printed material on revision books.

(B-J-090810)

Bing was of the opinion that her students would concentrate more on her lesson if she were to show interesting activities on the LCD projector. In one of her lessons on 'Patriotism', Bing showed a video clip on Lieutenant Adnan, a legendary warrior who fought for independence for the country. When the video was on, the students clapped their hands. After explaining to the students, she showed a list of questions on the LCD. The questions were taken from the text book but Bing improvised the questions according to the students' level (B-OB1-230810).

Bing has also created a website that students could access at anytime. Once, she introduced the unit 'Love for Family' to the students on the LCD through her website. Bing was also keen to add information on her facebook.

Bing: Have you read this story? Or this e-mail. I'll put in my facebook. Then

you can read it.

Student: What's your ID, teacher?

Bing: ID? Type Mrs. B, then you get to find me.

Student: Mrs. B.

Bing: ah.. Ok, I've put Lesson 1 that is Unit 1- Notes in Facebook. Go and

read.

Student: Teacher, your e-mail.

(B-OB6-240111)

Bing's expertise in using ICT was also noticed. She believes in using ICT to gauge the students' attention and engage the students' learning.

...I believe in using ICT, actually I can use charts, I can use revision books in the class, I can also use games, but then as I said the same method is the worst method so I try to vary....but most of the time I try to use ICT because it caters to the needs of the students. In ICT, we have sound effects, we have visuals...if I have more time I will put in animation to make it lively to help them to be more focus to make learning more fun.. I believe in interacting way of learning so I am asking them to join the website to learn.



(B-INT1-60910-61-67)

In fact, she believed that her students would learn better if the teaching and learning process are provided through information technology. Furthermore, Bing wanted her students to be exposed to the multimedia world so that they would not be left behind. This also concurred with a participant's view in Levin and Wadmany's (2006) study where she perceived information technology as a tool to enlarge students' conceptual world. Bing also viewed that each student has different learning ability and should access different methods to optimize learning. She clarified:

...because you see I'm experimenting. I don't want my students to be left behind because we know that in America, in New Zealand, in Australia, the students are going to school with a lap top or what you call that.. an iPad. They no longer take text books to school, they are using e-books. In Malaysia, there are schools who make it compulsory for the students to bring iPads to school, we have *Sekolah Bestari*, but here we are just a normal school but then it is not fair that the students are not exposed. We know that the computer is available, we also cannot deny the theory by Howard Gardner, who says that all of us are born with multiple intelligences, which means that we learn in different ways, some prone to listening, some prone to seeing and some learn better with the music on. So I tried to cater to the needs of the students and I'm also preparing them for the future because computer is necessary in their lives.

(B-INT2-290910-124-136)

Bing's reflection on this matter was written in her journal. She sensed that her students would be more focused and interested in learning through ICT.

I am happy with my lesson.

I have included elements of fun in learning through games using power point games templates as evaluation. Students were interested and participated actively in giving the answers.

(B-J-160810)

The above evidence showed that Bing cared that her students learn in a delightful way through ICT as students need excitement and support in their learning. As Cooper (2011) affirms, "...technology works more effectively in education as part of warm and caring human environments." (p. 206).

However, in Agnes's case, her approach on using ICT in the classroom was different. In all her lessons, Agnes did not utilize multimedia software as she felt time did not permit her to do so. As the classroom was not equipped with computer facilities, she opined that it would take too much time to set up the system as she needed to complete the syllabus before the end-year examinations. She would only consider using ICT when she has completed the syllabus with the students or after the examinations. This concurs with Cuban, Kirkpatrick, and Peck (2001) who argued that teachers who are teacher-centered in their teaching will not really accept technology into their work unless it is absolutely necessary.

There were only two observations where Agnes told her students to find information from the Internet. In one lesson where she talked to her students about the effects of war and radiation, she told them to look up in the internet for the effects of radiation on humans, especially from National Geographic (A-OB2-220211). In another lesson on 'Patriotism', she told them to find information about Lieutenant Adnan, a legendary war hero from the internet (A-OB5-260411).

As for Rita, she presumed that the use of information technology such as the internet or Power Point presentation would enhance teaching and learning. Nonetheless, she felt that it would only be applicable if it was useful



for that particular lesson. In the first observation, she wanted to show a video clip animation on 'Patriotism' as a set induction of her lesson. Earlier she had informed the students to go to the media room as the classroom was not equipped with computer facilities. After several attempts, the image was finally displayed on the screen but the audio was not functioning (R-OB1-140211). Therefore, the students could not listen to what was being said. Rita did not show her disappointment; however, she modified her lesson instantly and told the students to predict what was being said by the characters in the video clip. Rita maintained her opinion that if she knew the system was down, she could have done her lesson without it and not wasted so much time. She explained:

Ok, IT is necessary if it is helping you. You noticed the first day I was very, very upset because I could have done the teaching without the IT itself. So that's why like the previous lesson it did really help because the whole theme was about consumerism, they talk about reading labels, they talk about expiry date, you know, so the set induction was helpful for the lesson. But if the IT is not helping, might as well you don't impose just because you want to show you're using IT. Be practical, if you need to use it, you use.

(R-INT1-070311-817-823)

Here, Rita viewed that IT would only benefit students if the technology enhanced the teaching and learning process in the classroom and not just as a showcase for the viewing of others. She advocated that employing IT would be meaningless if lessons could be carried out significantly using other, more practical, teaching aids.

Throughout all observations, Rita only showed a video clip on 'Love Towards Family' to the students. This was done in the classroom where she successfully installed the system with the help of her students. However, she indicated that the classroom was not conducive enough as too much noise came in from the outside and the lesson was disrupted by the late comers. Rita had to show the video clip twice (K-OB4-110411). Despite that, she regarded IT as having a big role to play in Moral Education as students could get a lot of information through the internet. In fact, her upcoming activities would involve using IT as it would assist students in their projects. She said:

For Moral Education, you can get a lot of issues from the internet because the issues are various, like the environment and all that. That's why I use Power Point presentation for my students. The competition that they are taking part will start in April, so they will be doing the presentation in July. So each of them will pair up, they have to go to the internet to find all the relevant information. Let's say they want to talk about open burning, they have to present in 15 Power Point slide presentation. So this will really help them because when they do research on the topic, they will be able to answer in the exams if such topic comes out.

(R-INT1-070311-823-832)

Her viewpoints indicated that students benefit a lot in using ICT. However, teachers should use their discretion in utilizing ICT if it is supported by good technological software in the classrooms.

Unlike Bing and Kavita, Sammy did not use information technology (IT) in the classroom. However, she encouraged her students to look for information from the internet as she found that the text book could only give limited information. In one of her lessons, she told her students, "There's little in the text book. If you want more information, check the internet" (S-OB1-250211). In another lesson, she told the respective groups in her class to look up the acronyms given from the internet as the text book did not give such information. Sammy wanted her students to acquire as much knowledge as they could not only for exam purposes but also for their future benefit. She explained:

...what they learn in class it's only the gist of bigger things. For example, if it is just about an organization, they only give you a bit of information such as the purpose, the goals but to get more they have to find out. They need to have the learning desire to know what they really want. They have to care if they want to find out more. I mean it's not something that will come out in the exam but if they want knowledge, if they want more, if they care, then they have to look for it because I'm just giving the gist of what it is because I'm tied to



the syllabus, I've to finish up the syllabus.

(S-INT1-030311-279-286)

It showed that Sammy cared for the students to gain as much knowledge as they could as she knew that she could not give everything to her students as she was restricted to the syllabus needs, hence no utilization or integration of ICT in the classroom as time was the main factor here. She also wanted the students to care for themselves in the sense that they should obtain as much information and not just to study for exam purposes only.

Therefore, among the four teachers presented above, it could be said that Bing, a *non-Excellent* teacher has integrated ICT more in her classroom teachings compared to other teachers whether they are *Excellent Teachers* or *non-Excellent Teachers*.

DISCUSSION AND IMPLICATIONS

The findings revealed that teachers who do not have sound knowledge in ICT may perceive it as unnecessary, whereas Bing, who has background expertise in ICT and natural enthusiasm regarded ICT as a prominent tool to enhance the students' world in terms of social, economics and politics. This revelation indicated that training of teachers in deemed vital to convince them that ICT is a worthy tool to be integrated in classroom pedagogical practice. This can be directed to Bing who believed in using ICT to equip her students with limitless knowledge that could advance them in life. Her competence in using ICT concurs with Songo, Verčkovnik and Kocijončič's (2010) study that highlighted students' successful learning highly depended on the teachers' attained accomplishments and confidence level in using ICT.

Showing of a video has garnered students' attention and focus. If Bing had taught in a conventional way, where it was just 'chalk and talk', the students may not consider showing their attentiveness toward her instructions. As in Leong and Tan's (2008) study, where they proposed displaying movies to students in order for them to identify with the characters and situations, it definitely generated students' interest and motivation in wanting to pay attention and later lead to learning.

For Agnes and Sammy, their lack of ICT integration in their classroom teachings, has exposed the lack of ICT pedagogical training at teacher training institutions and universities (Kubiatko et al., 2010). Agnes's statement indicating the deficiency of time that she faced in completing the syllabus which resulted in her decision to discard ICT in her classroom teachings, proved that time factor plays a significant role in teachers' choice of instructional methods. These findings support Loeding and Wynn's (1999) findings that teachers are abandoning ICT in classrooms because it required so much of their time.

Rita, although excellent in the subject matter, has reservations about using ICT in the classroom. Her opinion that ICT should only be utilized when necessary, should be taken in a positive note as we have seen how disappointed she was when technical breakdown of ICT in the classroom hindered her from using ICT. As an alternative, she had to use a different approach in delivering her subject matter. Her experiences in relation to ICT is what Hu and McGrath (2011) have asserted that although teachers have considerable respect for ICT, the lack of proper ICT equipment in the classroom may frustrate their fervent devotion toward ICT.

The above reasons imply that the training of ICT in teachers' training institutions and universities especially in Moral Education should be considered as an important method as the evolution of ICT occurs immensely. **Kember (2008)** asserts that digital pedagogies have become a moral imperative to engage students' learning and achieve high outcome learning. In this case, how ICT is used in the classroom will make the difference. The rapid transformation of ICT should gear teachers toward ICT as ICT which is part of meaningful pedagogy enables one to acquire high quality learning outcomes (**Kember, 2008**).

Besides, school authorities such as the administrative staff should support teachers to equip themselves with ICT knowledge as multimedia technology usage would definitely improve students' motivation in learning; as it stimulates their cognitive abilities, and, as well as affective and behavioral aspects in the learning process. Omidinia, Masrom, and Selamat (2012) have proven in their study that the schools are paying less attention on teachers' training development on ICT. Therefore, school administrators should organize and implement such training that would enrich teachers' knowledge on ICT and enhance their expertise in utilizing this tool.

In addition, the school authorities, as well as the Ministry of Education should ensure that schools be updated with the latest software, multimedia systems and courseware as well as sufficient computer laboratories as this could promote teachers' and students' awareness in multimedia technologies. With proper ICT equipment in classrooms, the percentage of teachers utilizing the technology would definitely be higher as the excuses such as 'lack of time' or 'not exposed to ICT' would slowly disappear from the teachers' vocabulary.



CONCLUSION

In the world of globalization, it is important for all authorities such as school administrators and related organizations including technical support, to support teachers in adopting ICT in their teaching. If ICT is not integrated effectively as happens in many schools today (Keengwe et al., 2008), then the effort in making ICT an important pedagogy tool would fail. Since the barriers to IT integration in classrooms exist, schools may need strong professional development opportunities and positive models for teachers to make ICT part of their instruction in today's classrooms as the nation progresses toward creation of an ICT hub to produce a highly competent, skillful and knowledgeable workforce.

REFERENCES

Brown, M., Askew, M., Rhodes, V., Denvir, H., Ranson, E. & Wiliam, D. (2001). Magic Bullets or Chimeras? Searching for Factors Characterising Effective Teachers and Effective Teaching in Numeracy, British Educational Research Association Annual Conference Symposium on Pedagogy and Educational Policy: modernising teaching or narrowing the agenda? University of Leeds

Clements, D. H. (2000). From exercises and tasks to problems and projects: Unique contributions of computers to innovative mathematics education, *Journal of Mathematical Behavior*, 19, 9-47.

Cooper, B. (2011). Empathy in education: Engagement, values and achievement. New

York, NY: Continuum.

Cox, M. J., & Abbott, C. (2004). *ICT and Attainment: a review of the research literature*. London: Department for Education and Skills.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). NJ: Pearson.

Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.

Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technology in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38(4), 813-834.

Gopala et al. (2012). ICT and teachers' attitude in English Language teaching. Asian Social Science, 8(11), 8-13.

Hargreaves, A., & Fullan, M. (1998). What's worth fighting for out there. New York, NY: Teachers College Press.

Harris, A. L., Lang, M., Yates, D., & Kruck, S. E. (2011). Incorporating ethics and social responsibility in IS education. *Journal of Information Systems Education*, *22*(3), 183-189.

Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: commitment, constraints, caution, and change. *Journal of Curriculum Studies*, *37*(2), 155-192.

Hu, Z., & McGrath, I. (2011). Innovation in higher education in China: Are teachers ready to integrate ICT in English language teaching? *Technology, Pedagogy and Education, 20*(1), 41-59.

Jimoyiannis, A., & Komis, V. (2007). Examining teachers' beliefs about ICT in education. Implications of a teacher preparation programme. *Teacher Development*, 11(2), 149-173.



- John, P. & Sutherland, R. (2005). Affordance, opportunity and pedagogical implications of ICT. *Educational Review*, *57*(4), 405-413.
- Keengwe, J., Onchwari, G., & Wachira, P. (2008). Computer technology integration and student learning: Barriers and promise. *Journal of Science Educational and Technology*, *17*(6), 560-565.
- Kember, D. (2008). Transitions into teaching for career-change professionals. *International Journal of Pedagogies and Learning*, 4(5), 48-57.
- Kennewell, S., Tanner, H., Jones, S., Beauchamp, G. (2008). Analysing the use of interactive technology to implement interactive teaching. *Journal of Computer Assisted Learning*, 24, 61-73.
- Krish, P. (2008). Language learning in the virtual world: Instructors' voices. *International Journal of Pedagogies and Learning*, *4*(4), 113-129.
 - Kubiatko, M., Usak, M., Yilmaz, K., & Tasar, M. F. (2010). A cross national study of
- Czech and Turkish university students' attitude towards ICT used in science subjects. *Journal of Baltic Science Education*, *9*(2), 119-134.
- Lang, M. (2000). Teacher development of computer use in education in Germany. *Education and Information Technology*, 5(1), 39-48.
- Leong, W. Y., & Tan, C. (2008). The use of audio-visual media in the teaching of philosophy in secondary schools. *International Journal of Pedagogies and Learning*, 4(5), 36-47.
- Levin, T., & Wadmany, R. (2006). Teachers' beliefs and practices in technology-based classrooms: A developmental view. *Journal of Research on Technology in Education*, 39(2), 157-181.
 - Lickona, T. (1993). The return of character education. Educational Leadership, 51(3). 6-11.
- Loeding, B. L., & Wynn, M. (1999). Distant learning, planning, preparation, and presentation: Instructor's perspectives. *International Journal of Instructional Media*, *26*(2), 181-193.
- McBer, H. (2000). Research into teacher effectiveness: A model of teacher effectiveness. Report by Hay McBer to the Department for Education and Employment. London: Department for Education and Employment.
- Omidinia, S., Masrom, M., & Selamat, H. (2012). Adopting ICT for interactive learning: smart school case in Malaysia. *International Journal of Academic Research*, 4(4), 107-115.
- Osman, K., & Bakar, N. A. (2012). Educational Computer Games for Malaysian Classrooms: Issues and Challenges. *Asian Social Science*, 8(11), 75-85.
- Ottesen, E. (2006). Learning to teach with technology: Authoring practised identities. *Technology, Pedagogy and Education, 15*(3), 275-290.
- Rohani Abdul Hamid. (2002). Education reform to meet the challenges of a k-economy: The Malaysian perspective. Paper presented at the International Conference on the Challenge of Learning & Teaching in a Brave New World: Issues & Opportunities in Borderless Education at The JB Hotel, Hatyai, Thailand on 14-16 October 2002.

- Ross, P., & Ali, Y. (2011). Antecedents of employee loyalty in an emerging economy: The Malaysian multimedia super corridor. *Labour and Industry*, *22*(1/2), 25-51.
- Songo, A., Verčkovnik, T., & Kocijončič, S. (2010). Information and communication technologies (ICT) in biology teaching in Slōvenian secondary schools. *Eurasia Journal of Mathematics, Science and Technology Education*, 6, 37-46.
- Stahl, B. C. (2011). Teaching ethical reflexivity in information systems: How to equip students to deal with moral and ethical issues of emerging information and communication technologies. *Journal of Information Systems Education*, 22(3), 253-260.
- Suseela Malakolunthu. (2006). *Teacher learning in Malaysia: Problems and possibilities of reform.* Kuala Lumpur: University of Malaya Press.
- Tambulasi, R. I. C. (2009). Pushed to the abyss of exclusion: ICT and social exclusion in developing countries. *Journal of Information, Communication and Ethics in Society, 7*(2/3), 119-127.
- Webb, M. E. (2002). Pedagogical reasoning: Issues and solutions for the teaching and learning of ICT in secondary schools. *Education and Information Technologies*, 7, 237-255.
- Webb, C., & Cox, M. (2004). A review of pedagogy related to information and communication technology. *Technology, Pedagogy and Education, 13*(1), 235-286.
- Yang, H. (2012). ICT in English schools: Transforming education? *Technology, Pedagogy and Education, 21*(1), 101-118.
 - Yin, R. K. (2003). Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.