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Barriers to Technology Integration in Islamic Education: An Insight of Excellent teachers

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Abstract

This paper addresses the insight of excellent teachers of Ministry of Education, Malaysia towards barriers in integration of technology in Islamic Education in school. More specifically, this paper focused on how excellent teachers think about the barriers in technology integration and how teachers initiate's and utilize a technology framework for effectiveness. It is an excerpt from a big research of technology integration in Malaysia. The research design employed qualitative methods to examine the phenomena and identify issues and solutions from the empirical investigations. The case study concludes factors of integration and practical solutions by the practitioners. Furthermore, the article also delves into a framework of learning point for teachers to adopt and provides some helpful tips for technology use in the classroom and daily routines.

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Keywords: Technology Integration, Technology in Islamic Education, Atlas ti., Technological Pedagogical Content Knowledge (TPACK) Model, Educational Technology, Islamic Education, Teachers and Students

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NDMRP-15-262	Barriers To Technology Integration In Islamic Education: An Insight Of Excellent Teachers	Norhashimi Saad, Salina, Busrowi	Department Of Curriculum & Instructional Technology, Faculty Of Education, University Of Malaya, 50603 Kuala Lumpur MALAYSIA	Malaysia.
NDMRP-15-263		Mr Faizan Abdul Rahman	Valuation & Property Services Department Ministry Of Finance, Malaysia	Malaysia

03 April, 2015

ACCEPTANCE LETTER

Dear Norhashimi Saad

Submission ID No: NDMRP-15-262 (Please use this ID for future correspondence)

Manuscript Title: **BARRIERS TO TECHNOLOGY INTEGRATION IN ISLAMIC EDUCATION: AN INSIGHT OF EXCELLENT TEACHERS**

Co Author : Salina, Busrowi

We are thankful for your paper submission in our International Conference on “*New Directions in Multidisciplinary Research & Practice*” (NDMRP May 12-13, 2015), Istanbul Turkey.

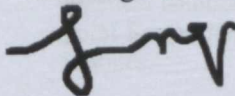
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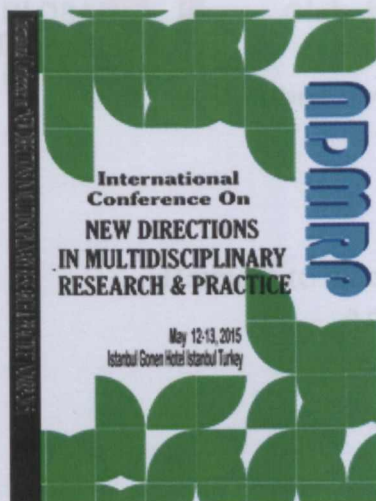
We look forward to seeing you at Istanbul in May 2015. Should you need any further assistance, please contact the conference secretariat at NDMRP2015@globalilluminators.org.

Kind regards



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Introduction

Technology is viewed as a catalyst and tool for reengaging teachers and students in the excitement of learning and for making that learning more relevant to the 21st century. Although the information, communication and technology (ICT) has become integrated into many areas of life today, it still not systematically penetrates the wall of our public classroom.

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This phenomenon has puzzled educational researchers for the past three decades as they've investigated the continued minimal levels of teacher technology use for instruction in spite of ever increasing professional development opportunities, resource allocation, computer access, and internet broadband connectivity (Gray, Thomas, & Lewis, 2010; Wartella, Schomburg, Lauricella, Robb, & Flynn, 2010)

Research on effective teaching of excellent teachers have been discussed extensively by many researchers (Kamarul Azmi, 2010; Mohd Kassim, 2010; Ahmad Yunus, 2011; Creasy et al., 2011; Van Driel & Berry, 2012; Caspersen, 2013). Research shows that the quality of teachers' instructional methodologies has a significant impact on students' academic success, higher education options, and meaningful future employment (Marzano, et al., 2005). As little research has been done in the context of Islamic Education (Tamuri, 2010, Abdullah, M., & AzmiJasmi, K., 2014); therefore, this study delve the existing integration technology in the context of Islamic Education Excellent Teachers' in Malaysia.

Teacher pedagogy and student learning have to change to fully integrate technology into the curriculum. Despite of its critical for teachers to integrate technology and maximize the use of technology in their teachings, research studies report the evident of substantial barriers. Literature reviews reveals barriers to the use of ICT in school include lack of motivation (Ertmer, 1999; Ilomäki, 2011); lack of confidence (Ertmer, 1999; Jones, 2004; Richardson, 2011); lack of funding (Ertmer, 1999; Lim, & Khine, 2006; Han, 2008; Neyland, 2011; Saheli, & Saheli, 2012; Nikolopoulou, & Gialamas, 2013); lack of skilled personnel (M. M. Yunus, M. Lubis, and C. Lin 2009; Ihmeideh, 2009; Ilomäki ,2011; Richardson, 2011; Saheli, & Saheli, 2012); poor ICT infrastructure (Pelgrum, 2001; Butler & Sellbom, 2002; Galanouli et al.,2004; Rodrigo, 2005; Ihmeideh, 2009; Richardson, 2011); low connectivity (Galanouli et al.,2004; Rodrigo, 2005; Richardson, 2011; Saheli, & Saheli, 2012); lack of ICT integration (Pelgrum ,2001; Rodrigo, 2005); lack of awareness (Jones, 2004; Richardson, 2011); inadequate maintenance of hardware and software (Bichelmeyer, & Molenda, 2006; Richardson, 2011; Nikolopoulou, & Gialamas, 2013) and power interruptions (Richardson, 2011). An issue arises when one examines the level to which educational technology has been actively integrated into standard classroom teaching practices. In many cases, it has been misused or marginalized to the point of effectively debilitating its effectiveness within schools (Lawless & Pellegrino, 2007; Kolderie & McDonald, 2009; Collins & Halverson, 2010). In examining the integration of technology, a grounded theory approach was used as this approach is suitable for this relatively little research has been done in the context of Islamic Education (Tamuri, 2010, Abdullah, M., & AzmiJasmi, K., 2014). Thus, this paper contribute to the body of knowledge of integration technology in education based on empirical findings as it is vital in finding out details from the teachers who feel most adept at technology integration on their most successful experiences in planning technology-based lessons for school students.

Objective of the Study

This study is an excerpt of a big study and this paper limit to discuss the findings on the two aims as follows; to examine the perception of Excellent Islamic Education teachers on the barriers in technology integration in the Islamic Education subjects and how excellent Islamic Education teachers initiate's and utilize a technology framework for effectiveness. The objectives is to: 1) How the excellent Islamic Education teachers perceive the technology barriers in their experiences; 2) How the teachers effectively integrate the technology by formulating tips to in school context based on their experience.

Methodology

Research design

The research design employed qualitative methods to examine the phenomena of technology integration and identify issues and solutions from the empirical investigations. Focus groups were used as a method for qualitative data gathering. Focus groups have the potential to gather large amounts of very rich and dynamic data (Barbour, 1999). The targeted participants for these focus groups were 7 Excellent Islamic Education Teachers from Ministry of Education Malaysia and the size of each group was 3-4 members who were relatively homogeneous in terms of their knowledge and experience. Focus group have been used extensively in the educational field (Barbour, 1999; Cohen, 2000; Litosseliti, 2003) and its offer the opportunity to "gain insight into participants' views, perceptions and attitudes on a given topic" (Litosseliti, 2003:8); the opportunity to analyse the interaction between participants within the groups (Oates, 2000; Litosseliti, 2003); generate research hypothesis (Litosseliti, 2003); and assess the needs of participants (Krueger, 1994). The focus group interview data are the main data while observation and document analysis are only the supportive data to confirm, strengthen the facts of interview data in analysis stage. A total of seven participants were chosen among Islamic education teachers throughout peninsular Malaysia were appointed and upgraded as excellent teachers of Islamic Education expertise by the Inspectorate and certified by the Division planning and Policy Research, Ministry of Education. It is a voluntarily participative of study. This study has selected excellent teachers who teach Islamic Education in National Secondary School (SMK), Secondary School with Class of Religious Streaming (KAA), secondary boarding school (SBP) and Special Model School as the researchers wanted to see diversity in the pedagogical content knowledge (PCK) of excellent teachers, different schools environmental, student groups and different facilities that might affect integration of technology in teaching.

Data Collection Procedure and Analysis

Qualitative research data was collected through in-depth interviews with teacher focus group interviews. Each session was audiotaped and lasted approximately one hour and half. The facilitator introduced the questions; soliciting comments from participants and probing for

clarification or further information when appropriate. An informal, conversational atmosphere was encouraged and maintained. Experiences shared by participants were similar in the two group sessions. The data were considered complete when saturation of the data and informational adequacy were achieved. Focus group were recorded as audible files, transcribed and uploaded into Atlas.ti. Version 7.5.6, a qualitative data analysis software program. Two independent researchers, working separately, reviewed the transcripts. Categories from the data and associated nodes or themes within the identified categories were identified and coded to saturation. The researchers collaborated to develop a list of common themes based on the frequency of comments across participants. Transcripts were recoded into the agreed-upon categories and themes, and then validated by two qualitative experts. Furthermore, data validity was carried out using triangulation of data from variety of sources, observations, document analysis.

Results and Discussion

The findings of the study were grouped into three main categories, as follows:

A. The barriers in technology integration as perceived by Excellent Islamic Education Teachers

This study found the dimension of barriers is fall under three orders of barriers that has been summed in prior studies: (1) first-order barriers - equipment, resources, and support; (2) second-order barriers - knowledge/skills and beliefs/attitudes; and, (3) third-order barriers - school structure/organization and culture/climate. (Ertmer, P. A., 1999).

More specifically the analysis of data revealed several significant barriers that deter excellent teachers from using technology for classroom instruction. Some barriers are totally out of a teacher's control, such as a lack of access to equipment, appropriate software, equipment malfunctions, lack of time to prepare technology integrated lessons. This is the case for National Secondary School (SMK) and Secondary School with Class of Religious Streaming (KAA); school types in this research context which differ to secondary boarding school (SBP) and Special Model School where facilities are been establish by special Ministerial fund. In the context of Normal Secondary School (SMK) and Secondary School with Class of Religious Streaming (KAA) school types, this research found three primary barriers: unavailability of properly functioning equipment, training needs to take place during regular staff hours, and teachers need sufficient time to collaborate with other teachers on technology integration. Another barrier facing the teachers is technology integration was not shown as a way to increase test scores on the school achievement tests and, therefore, become low priority.

Besides the aforementioned equipment malfunctions and appropriate software, the respondents relate additional barriers in their experience of technology integration specific to project-learning using technology integration such as lack of specific objectives, lack of teacher input, lack of school support and lack of experience on the part of the students. Whittier (2007) stated that in order to have proper technology integration within a lesson, teachers need time without students present to thoroughly review technology applications and decide how best to used them

to address the particular needs of their students and curriculum.

As reported in previous research, that barriers to integrating technology are not only the cost and distribution of hardware and software, but also the increased demand on teachers' time for course preparation (Snyder, 2001). What can schools do to help with the technology implementation process? The focus groups tend to emphasize on school leader and environmental support to be initiated and to be monitored.

There is a compelling evidence despite of all barriers been identified in preceding research, this study found a unique barriers faced by Islamic education Teachers. They are the shortage of time with high pressure on syllabus and examination-centered learning, limited availability of resources in the context of Islamic Education subject and lack of training in the use of technology. This lend weight to Whittier (2007) statement that besides the inability of schools to be able to provide the needed planning time, there were additional barriers such as lack of technology support and in-service training that focused more on the use than the proper integration of a particular technology application.

B. Ways of Excellent Islamic Education Teachers initiate's and utilize a technology framework for effectiveness.

Hew, K. F., & Brush, T. (2007) classified various strategies to overcome barriers into five main categories: (a) having a shared vision and technology integration plan, (b) overcoming the scarcity of resources, (c) changing attitudes and beliefs, (d) conducting professional development, and (e) reconsidering assessments.

This study in parallel contributes a few strategies along the way. The integration of technology within the classroom setting require time, training, and teacher willingness. The experts have long called for teachers to create more learner-centered rather than teacher-centered classrooms. "Research shows that effectively integrating technology can impact students' motivation, interest, and engagement, at all grade levels, even in higher education settings" (Peterson, Bury, & Middlestead, 2007, p. 9). One has to question whether educational technology training for teachers has included the pedagogical information needed to apply technology to the particular needs of all age group.

Group focus interviews offer a framework of learning point for teachers to adopt, and thus provides some helpful tips for technology use in the classroom and daily routines:

1. Successful integration of technology may be dependent on teachers' attitudes and beliefs (Vannatta and Fordham, 2004). Hence appropriate on paradigm-shift program should be carried out
2. Good teaching requires review and progress monitoring. Professional development for teachers in the use of technology is no different
3. Teachers need extensive, ongoing professional development in order to build teacher confidence and competency in integrating technology into teaching and learning, and teachers need to see the results of their efforts in improved performance from their students (Lambert & Lamb, 2004)

4. Professional development program should focusing on to help teachers fit a tool of technology both to the task and to address the needs of today's school student when they plan lessons
5. The program emphasizes on how to plan technology-based lessons, lesson plan templates, and sharing examples of model lesson plans from the excellent teachers and supplemented by lesson plans from the various 21st-Century skills website, as well as others that respond to the needs of today's school student.

The focus group suggest for proper training on technology integration, opportunities to collaborate on how to best integrate technology, and examples of how to properly plan for the technology integrated in lesson context. Thus professional development is the impetus for the technology integration.

“If teachers were to be properly trained on how to integrate the technology, rather than only shown how to use it and were provided with sufficient planning time to collaborate with other teachers and work on planning appropriate lessons for technology integration that meet the many needs of the school learner, then it is assumed that those students would be more engaged, as well as better learning outcomes”.

Detailed examination of focus group interview findings reveals technology-based lesson should include the following:

1. They provide appropriate levels of challenge. Students quickly become bored if the task is too easy and frustrated if it is too difficult.
2. They incorporate meaningful learning objectives. Activities should teach something students consider worth knowing, either in its own right, or as a step toward a higher objective.
3. They are adapted to student interests. Whenever possible, students should be involved in the design and selection of learning tasks.
4. They contain an element of choice. Again, where possible, students should be offered a choice of assignments, or alternate ways of meeting the requirements of the activity.
5. They offer an appropriate level of social interaction. Activities should be designed with ample opportunity for students to share knowledge, clarify meaning, and communicate their learning with others.
6. They allow for active participation rather than passive response.
7. They include novelty, fantasy-like elements, simulation, or game-like elements.
8. They allow for the creation of finished products.
9. They rely more on formative than summative assessment.

C. Study Impact and implications

P. Rogers (2000) suggested that all barriers to technology integration in classrooms are either internally motivated (e.g., teachers' attitudes or perceptions regarding the use of technology, their competence with using and integrating technology) or externally motivated (e.g.,

technological resource availability, presence of support staff to assist with technology use, relevant professional development). Additionally, she noted that some barriers are both internal and external, such as a “lack of time and funding and the unique culture of the institution” (p. 459).

Individual beliefs and skills

It is undoubtedly the case that the areas involved are individual beliefs and skills. Many older teachers were not only inexperienced with using the new technologies, but failed to see how to best incorporate them into their curriculum and could even be resistant to professional development in this area. Wu et al. (2008) found a connection between self-efficacy and how well teachers were able to see how and where to integrate technology into a lesson. With so many new technology tools becoming available, some have difficulty keeping up with learning how to use them. Some teachers lack the self-efficacy to use technology.

Four of the respondents highlighted; “My colleagues need hands-on learning, in-service learning experience rather than just instructional order from the school authorities and ministry. Thereby they will positively embark on the challenges of technology integration in their teachings”.

This is often connected to a lack of ongoing professional development that not only shows how to use the technology, but when or why to use it for a particular lesson.

On-going Professional development

Several studies provided insight into the needs for professional development when teachers were learning new technologies and how to implement them successfully. Several researchers (Ertmer & Ottenbreit-Leftwich, 2010; Guzman & Nussbaum, 2009; Martin et al., 2010; Mason, 2007; Teo, 2009; Trautmann & MaKinster, 2010; Zhao, 2007) emphasized the need to provide professional development opportunities for teachers, which involves opportunities to not just learn the new technology and how it works, but the chance to practice and see how the technology can enhance their curriculum. These same researchers, along with Hardre' and Sullivan (2009), found that positive support structures that allowed teachers to experiment with the technology within their classrooms were vital to the success of the integration. Min-Hsien and Chin- Chung (2010) found a lack of pedagogical knowledge on technology integration in teacher training programs. While most professional development within the school is very good at introducing new technologies and how they function, it is through the sharing with peers that the rest falls into place. Allsopp, McHatton, and Cranston-Gingras (2009) found that collaboration with peers during technology training positively affected teacher self-efficacy. Peers need a way to share examples of how they used technology within those lessons that have been shown to be most engaging with school students, and to do so in an on-going basis.

The findings indicate that despite barriers such as not having enough time planning would seem unrelated to the technology-focused professional development, it can be addressed, along with all the other concerns, with a planned, comprehensive training in technology in which teachers

share their best practices.

Problem based learning approach

Problem-based learning is on the rise in content classes, like Islamic Education across the science curriculum, because it combines many 21st Century Skills along with students being able to synthesize information and communicate it, however, many students have difficulty with the rigor involved if they have had rote learning in the majority of their prior classroom experiences. This study interestingly is consistent with the previous study. The respondent point out the value of problem based learning to attractively stimulate students learning especially with the technology integration.

“I hope the approach helps teachers see new ways to use technology that work better to engage as well as teach, school students who have changed so much in the last decade or so. My educational technology knowledge has grown tremendously and through this problem based learning; this information can be shared with my colleagues so that they can better integrate technology into their curriculum”

Belland, Glazewski, and Richardson (2008) described how teachers can use technology to scaffold problem-based learning (PBL): ...in which students in small groups engage in an authentic, ill-structured problem, and must a) define, generate and pursue learning issues to understand the problem, b) develop a possible solution, c) provide evidence to support their solution, and d) present their solution and the evidence that supports it. (p. 401).

Furthermore, the focus group suggested that the way most teachers approach technology integration in their lessons is constructivist in nature, from learning how to use a new application to experimenting with the incorporation of the technology within their curriculum (Urhahne et al., 2010). According to Urhahne et al. (2010), the socio-constructivist theory comes into play when teachers share their experiences with their peers and learn how to deal with any barriers as well as learn how to scaffold the experience for the students. Wu, Chang, and Guo (2008) described a theory called task-technology-fit (TTF) in which teachers must not just use a technology in their classes, but must make sure the technology is a good fit with the activity that it supports. This is the idea of the majority of Excellent Islamic education Teachers in ways to creatively maximized technology integration.

Implications

Theoretical Implication

In the grounded theory method, the theory is created during the data analysis, and the validity of that theory is “grounded” as the data supporting it increases (Campbell, 2011). Within the corpus of data of this study, it is revealed among theories associate are Rogers’ diffusion of innovations theory (Rogers, 2003), in investigating the adoption of technology for Excellent Islamic Education teachers context, Technological Pedagogical Content Knowledge (TPACK) theory as a framework in understanding the kinds of knowledge needed by a teacher for effective pedagogical practice in a technology enhanced learning (Koehler & Mishra, 2008, 2009; Mishra & Koehler, 2006, Niess, 2011; Niess et al., 2009) and Socio-constructivist

theories of the idea of working together to construct better technology integration as proposed by the focus group of the excellent teachers. Therefore, it is suggested that these theories should be taken into consideration in examining strategies to enhance technology integration or even proposing a practical development model to encounter barriers of technology adoption.

Future Study

The future holds endless possibilities for future research when it comes to technology in education. The purpose of this qualitative research study was to gain an in-depth understanding of the perspectives of the ministry of education excellent teachers regarding the effective integration of technology into the instructional practice of teachers with the overarching goal of enabling student achievement.

Crucially there is a need for action research where the research have to take place within a school setting (context) will surely provide the impetus for further deep understanding of barriers and challenges faced by the teachers and ways to support them effectively in technology integration.

Theoretically and practically future research on empirical study is required. While open-ended questions may reveal, for example, how some previously reported barriers have changed and may help in understanding the importance of barriers while integrating ICT in learning and teaching. Further research is suggested to investigate (i) how secondary school teachers' perceptions of technology barriers transform over time, (ii) the link between teachers' perceptions and their teaching and learning practices, and (iii) how to apply the framework of good teaching tips within the school context. Hence a model development is needed to probe and establish in assisting teachers to integrate ICT efficiently and effectively.

Conclusion

This study found that many barriers and obstacles confronting the Islamic Education teachers and students. The most crucial barriers identified are the shortage of time with high pressure on syllabus and examination-centered learning, limited availability of resources in the context of Islamic Education subject and lack of training. Despites of the barricades, this study also disclose that the excellent teachers improvised their teaching and formulate tipful ways integrating technology in teaching.

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