Effectiveness of ICT Integration and Management

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Abstract: The integration of information, communication and technology (ICT) will help teachers meet the global demand to replace traditional teaching methods with teaching and learning tools and facilities based on technology. ICT is regarded as one of the key elements for the transformation of the future developing country. The Ministry of Education emphasizes the importance of technology-enhanced teaching and learning in the national school curriculum through the latest Education Master Plan (2013-2025). This study aims to analyze teachers' perceptions of the effectiveness of ICT integration in supporting the teaching and learning process in the classroom. A questionnaire was randomly distributed to a total of 101 teachers from 10 public schools and colleges. Data from this quantitative research were analyzed using SPSS software (version 21) for both descriptive and inferential statistics. The results show that the integration of ICT is very effective for both teachers and students. The results show that a well-equipped teacher preparation with ICT tools and facilities is one of the most important success factors for technology-enhanced teaching and learning. . It has also been found that teacher professional development programs play a key role in improving the quality of student learning. For future studies it is necessary to examine other aspects of ICT integration, especially from a managerial perspective in relation to strategic planning and policy development.

Key words: ICT integration; Teaching and learning; Technology effectiveness; Education

1 Introduction

In fact, technology has become the highway of knowledge transfer in most countries. Today's technological integration has innovated and transformed our societies, completely transforming the way people think, work and live (Grabe, 2007). Within this framework, schools and other educational institutions aiming to prepare students for life in a 'knowledge society' should consider integrating ICT into their curriculum (Ghavifekr, Afshari and Amla Salleh, 2012). The integration of information, communication and technology (ICT) in education refers to the use of computer-based communication that integrates into the daily teaching process in the classroom. Besides preparing students for today's digital age, teachers are seen as key players in using ICT in their daily teaching. This is due to ICT's ability to provide a dynamic and proactive teaching-learning environment). While the goal of ICT integration is to improve and increase the quality,

accessibility and cost-effectiveness of delivering education to students, it also relates to the benefits of connecting learning communities to meet the challenges of today's globalization. The process of adopting ICT is not a single step, it is continuous and continuous steps that fully support teaching and learning and information resources. The integration of ICT in education generally means a technology-based teaching and learning process that is closely linked to the use of learning technologies in schools. Since students are familiar with technology and learn best in a technology-based environment, the issue of integrating ICT in schools, especially in the classroom, is crucial. This is due to the fact; The use of technology in education contributes a lot to the pedagogical aspects in which the application of ICT leads to effective learning with the help and support of ICT elements and components. It is fair to say that almost all subjects, starting with math, science, languages, arts and humanism and other important fields, can be learned more effectively with technology-based tools and gadgets.

ICT can be used in various ways where it helps both teachers and students to learn about their respective subject areas. A technology- based teaching and learning offers various interesting ways which includes educational videos, stimulation, storage of data, the usage of databases, mind-mapping, guided discovery, brainstorming, music, World Wide Web (www) that will make the learning process more fulfilling and meaningful. On the other hand, students will benefit from ICT integration where they are not bounded to the limited curriculum and resources, instead hands-on activities in a technology-based course is designed to help them to stimulate their understanding about the subject. It also helps teachers to design their lesson plans in an effective, creative and interesting approach that would result in students' active learning. Previous researches proved that use of ICT in teaching will enhance the learning process and maximizes the students' abilities in active learning. Integration approach is about implementing right use of ICT in particular subject area that involved complex concepts and skills to improve student's achievement and attainment. Besides, the review of curriculum is also needed so that only related ICT resources and appropriate software will be installed for the main aims and objectives of curriculum to be achieved. Enhancement approach is about using ICT to give great emphasis on the topic introduced. For instance, Microsoft PowerPoint can be used to present the topic in a very innovative and creative way that will lead into discussion and exchanging ideas and thoughts. Finally, complementary approach is when the ICT is used to aid and support the student's learning. This approach allow students to be more organized and efficient in which they can take obtain the notes from computer,

submit their works by email from home as long as they meet the deadline and looking for information from various sources provided online to fulfill the task given to them . Technology-based teaching and learning can make many changes in school that requires for proper planning and policy making. Researchers and policymakers must both have the same insight about the future plan. They provide a rationale, a set of goals, and a vision of how education systems run if ICT is integrated into teaching and learning process, and they are beneficial to students, teachers, parents and the general population of a given country. Ministry of Education Malaysia has formulated three main policies for ICT in education. The first policy insists on all students are given opportunity to use ICT. This is aimed to reduce the digital gap amongst the schools. The second policy focuses on the role and function played by ICT in education. Besides that, another policy stressed on the use of ICT for accessing information, communication and as productivity tool . However, infrastructure and facility of ICT is then needed to supply to the schools throughout the nation. A key factor in use of ICT is sufficient computer labs and ICT equipment.

2 Teachers' Belief on Technology-based Teaching and Learning

With the development of learning technologies at the end of the 20th century, the education system changed rapidly. This is due to the technology's ability to provide a proactive, accessible, and inclusive teaching and learning environment. Today, ministries of education around the world have provided many facilities and training to improve the use of advanced technologies in countries' teaching and learning processes. A significant budget has been allocated to provide the necessary equipment for teachers to improve the education system. Despite best efforts, most countries face a similar problem where teachers do not make the best use of the technology provided. This has become a serious issue as much previous research has shown that the use of ICT in teaching and learning can improve student performance. Furthermore, previous research shows that the correlation between teachers' belief and ICT use is high. The role of teachers is becoming increasingly important, especially in the use of ICT in pedagogy, which could increase student achievement, creativity and thinking skills. The younger the students are, the higher their expectations for the integration of ICT in the classroom. He also demonstrated that the integration of ICT mainly depends on personal factors that define self-image. This research also shows that the acceptance of ICT by teachers and students, both in and out of the classroom, means that the technologies are more likely to be used outside of the classroom. They found that barriers to ICT

integration in the classroom are teachers' confidence, competence and attitudes, which decrease the percentage of ICT integration.

3 Effectiveness of Technology-based Teaching and Learning for Students

The results, which examine the effectiveness of integrating ICT for students in learning, show that the use of ICT promotes active and engaging teaching to achieve the best learning experience for students with average scores. the lowest. In the previous section, most teachers agreed that the use of ICT allows students to be more active and engaged in class. This shows that teachers and students agree that the use of ICT provides opportunities for students to be active and take on more roles or roles for their best learning experience. The use of ICT also helps to broaden the knowledge paradigm of students with such an average score, where students can integrate their prior knowledge into current learning systems and share and exchange their views with teachers and fellow students. of class. ICT helps to provide the latest and up-to-date editions where students can very easily obtain them and incorporate them into their learning process.

4 Recommendations

It might be too common for issues and challenges of ICT integration to be discussed but in-depth study of ICT integration in core subjects in schools is least discussed. It is good if further studies can be made based on what barriers teachers are facing in using ICT in their daily classrooms in schools. Besides, rather than just focusing in public schools, it is best if this study can be conducted in 3 major schools we have in Malaysia that includes public schools, Chinese school as well as Indian school. This is because some schools might have more funding that makes ICT implementation much faster and easier. It is good if comparison can be made between different schools in which it can take the good side as examples and make improvements needed from the flaws identified.

5 References

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