RESEARCH ARTICLE

APPLICATION OF ICTs IN AN INDONESIAN ISLAMIC BOARDING SCHOOL

*Nuruddin

Universitas Islam Negeri Mataram, Indonesia

ARTICLE INFO

ABSTRACT

This research aimed to provide vivid descriptions of Information and Communication Technologies (ICTs) application in an Islamic boarding school (Pesantren) in Narmada, West Lombok, Indonesia. This descriptive qualitative research design employed participative observation, interview, and documentation as the data collection techniques, in which the data were subsequently analyzed through data display, reduction for categorization, synthesis, and hypothesis. The empirical findings showed that (1) the application of ICTs in the school was driven by the fact that living nowadays was inseparable from the use of technologies; (2) the process of planning, implementation, and evaluation went through the initial meeting in association with learning; (3) the process of ICTs integration with the learning activities was implemented through the teacher training program, in which the teachers learnt how to operate and design *PowerPoint,* and manage data using Microsoft Excel; (4) the use of ICTs could promote students' national and global knowledge, (5) ICTs were employed as learning media, administration and the medium of Islamic school advertisement; (6) the characteristic of ICTs in the Islamic school was optimizing the role of ICTs; (7) Around 50 % of electric power deficiency, which caused the *Bottleneck* when using the server, remained the primary contraint for the application of ICTs in the school. Drawing on the problem, this study suggests that the school immediately attempt to tackle the electric power deficiency and use new *Client Server* with a larger capacity.

INTRODUCTION

Islamic boarding schools (known as Pesantren in Indonesian language) are generally recognized as an educational institution privately administered and managed by the centralitic sort of religious figure, known as Kyai (Islamic cleric) with Islamic education background. Such religious identities become the impetus of public to send their offsprings to gain education in Pesantren. Generally, boarding system becomes the central characteristic of Pesantren, and in practice, there are some differences between Pesantren and general or ordinary schools, namely their characteristics, objectives and curriculum. Pesantren to date is often adhered to adopt the obsolete teaching system. However, Pesantren nowadays step forward more quickly regarding the notion of independence, in which they are offering students activities and skill training development (Madjid: 2010, xviii). Such an idea shows that Pesantren repond to the changes and transforms their institution from the old-fashioned to modern ones (Madjid: 2010, xviii). The transformation of Pesantren does not mean to abonden their distinctive characteristic as an Islamic education, instead corresponds to the needs of students and modernization. Nurul Haramain Islamic boarding school, where this research took place, in its early periods, used to implement learning activities comprising Islamic values and the study of classical Islamic books (known as Kitab Kuning in

Indonesian language). The students gain Islamic education through the learning system led by an Islamic cleric. In addition, the subjects in the school are integrated with the national subjects. The attempt to marry the Islamic values and general lessons remains the great challenge in the school. Recently, the educational paradigm has shifted from teacher centered to learner-centered learning. Such a shift requires the provision of learning facilities that afford students the opportunity to learn more independently. The development of Information and Information and Communication Technologies (ICTs henceforth) to date can be a vehicle for the successful implementation of such a notion of individual learning. Technologies are integral parts of every individual that needs information. Technologies can facilitate learner-centered activities leading to social life and quality. The ditigal world experiences rapid changes and the role of ICTs plays more important role within years and years to come. This accords with what Amin advocates that the use of ICTs in the teaching and learning process may enhance students' accessibility to resources and quality education and their motivation (Noor-Ul-Amin). The attempt to integrate Islamic values in Nurul Haramain Islamic boarding school is continuously made and initiated by *Mudabbir* (male teacher assistant*)* and M*udabbiroh* (female techer assistant), Islamic teachers, Islamic cleric and teachers in the Islamic school. To this end, the students are expected to be able to cope with the general subjects and moral traits. The modernization accelerates the dramatic transformation in Islamic boarding schools, including the making use of ICTs. ICTs play pivotal roles in the development of education system. The

Corresponding author: **Nuruddin,**
Universitas Islam Negeri Mataram, Indonesia.

employement of ICTs in schooling context escalates significantly (Nilgün: 2011, 223-231). This indicates that the application of ICTs in classrooms remains essential. The implementation of ICTs benefits not only the teachers but also every individual in the schools. The transformation into the use of ICTs in Pesantren significantly results in the increase number of students entering the schools. However, the inadequacy of ICTs facilities turns out the inffective use of ICTs by the teachers and students. As a remedy, the Islamic boarding school provides subsidies for the procurement of laptops for the teachers. Another problem regarding the application of ICTs is the incompetent human resources reliable for the operation of computers. Some teachers are able to operate *Microsoft office*, yet many are unable to use website design, *corel draw*, *photoshop* and etc. Such situation requires the teachers and staffs to develop their skills in using ICTs. The problems hamper teachers' creativity to achieve the learning objectives. Computers can be one of the learning resources. Learning resources change rapidly from time to time as a response to the modernization. Such rapid changes require the transformation in terms of instructional methods, media, strategies and techniques for learning as primary needs of education. The following picture illustrates the changes of learning resources from time to time.
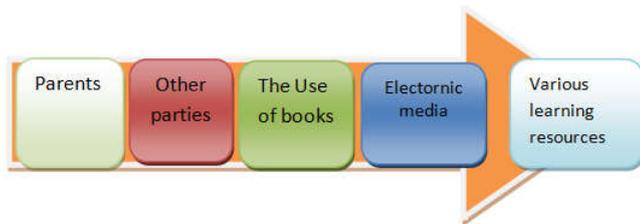
Picture: The shift of learning resources over periods of time

Information technologies involve anything pertinent to the process, props, manipulation, and information management. On the other hand, technology information is anything related to the use of props for the purpose of processing and transferring data from certain realm to another. ICTs are any electronic devices comprising of handware and software, and anything regarding the pcocess, manipulation, management and transfer of information across media (Rusman*, et al*: 2013, 87). In addition to that, Munir defines computers as an advancement of shopisticated multimedia technologies that are central to the today's lives and future (Munir: 2013, 162). The management and distributon of information from one communication networking provide a wider access to every angle of human life—computers allow students to study at their own pace and ability, support their understanding of materials (Rusman: 2013, 190). Computers allow the combination of collors, music, and graphic animation, including creating the animated simulation as one of the learning media. Along with the development is the thriving use of jargons starting with the letter *e*, such as *e-book, e-learning, e-laboratory, e-education,* and *e-library.*

Drawing on the above descriptions, it can be concluded that learning resources are anything, including things, tools, humans and other parties that may provide information for students, and which may better their attitude. The material development remains a central part of instructors' professionalism because every learning requires learning resources that may transform the instructional process. The principles of material development proposed by Sitepu include the foundation of development, its objectives, and its components (Sitepu: 2014, 179). In doing so, the teachers can adapt the learning materials in accordance with students' needs.

MATERIALS AND METHODS

This study is qualitative in nature, in which the data are garnered and categorized into two types: primary and secondary data. Primary data is the data collected, managed, presented by the researcher taken directly from the informants through observation, field notes, and interview. On the other hand, secondary data are the ones collected from relevant documents. The data analysis procedures include the data display, reduction, categorization, synthesis, and hypothesis construction.

DISCUSSION

The reasons for the use of ICTs in Nurul Haramain NW Islamic Boarding School Narmada

Pesantren as an education institution where students develop their morals should remain alive. The preservarence of the existence amid the modernization becomes challenging because Pesantren on one hand is home to religious and moral capacity building, on the other hand it should be able to adapt to and metamorphose into the development of moderned society (Jamaludin, 2012, 135). Pesantren should not continue the obsolete practice and values. Hence, the advancement of ICTs in terms of audio-visual media today has great impacts on the public's mindset, trait, and lifestyle (Jamaludin, 2012, 1).

In its initial uses, computers were regarded as luxurious things that remained challenging in the Islamic school. At the same time, the students were told that the computers were not more than learning media, yet the school used to introduce computers to their students. With this regard, Siregar opines that the central problem to the application of ICTs lies in the beliefs and traits towards their use. Such affirmative beliefs and behaviors are known as *technophobia* or *cyberphobia* (Siregar: 2007, 3). As a panacea for the aforementioned problems, the Pasantren needs to procure sets of computers. Students boarding in Nurul Haramain outnumbered existing number of computers, which hampered the application of computer based instruction at its best. As a response to the shortage, the Pesantren provided computers for mass use—sets of computers were placed in the public sphere in the school where they could be accessed by the students passing over. This was one of the progressive remedies applied by the school to address the issue. After having students recognized ways to operate computers, the Islamic school subsequently started to digitalize books, which aimed to ease the teachers to make use them. The digital file was exported into PDF format in the form of *ebook*. On the other hand, the administration system already implemented computer-based system.

The Process of Planning, Implmentation, and evaluation of ICTs use in Nurul Haramain NW Islamic Boarding School Narmada

The plan of learning supported by computers was initially preceded by the analysis of suitable materials. Subsequently, it was to integrate the learning materials with any existing technologies and to determine the time allotted. Among these, the teachers set well-established plans for the sake of learning, including making lesson plans. The framework for preparing

lesson plans was also inseparable from the teachers' capacity to describe the purpose of learning, organize the materials, media and methods. Drawing on the lesson planning documents gained from Nurul Haramain Islamic boarding school, it was found that the teachers integrated the use of digital media for learning. The computer based learning activities are dependent upon the policy of the Islamic boarding school stipulated by the school headmaster. The process of applying ICTs in the school initially went through teachers and school superintendents' conference or meeting, which involved NGOs in assessing the strengths and weaknesses of computers in learning. The next phase was that the teachers studied the content and teaching approach, both of which were subsequently compiled in a learning scenario, in which many learning activities were integrated into ICTs. The teachers also prepared the materials well in order to facilitate the implementation of learning. Some potential benefits of computers as learning resources (Sanjaya: 2012, 194-195) were (1) the use of computers allowed the students to indirectly interact with the learning materials, (2) it afforded individual learning to take place, (3) it allowed the presentation of the multimodal components, such as audio visual in the form graphics, animation, film, and so on, (4) it provided direct feedback, (5) and it afforded every individual to access various learning resources to seek for the truth of information and compare the existing theories through special pathway. In its application in the classroom, the learning should be communicative. The process of learning in the classrooms is often teacher centered. Therefore, the students should be encouraged to be more active to interact with the teachers and peers.

Interaction is also central to the teaching and learning activities because it benefits both the students and the teachers, in which the latter may gain feedback whether the materials could be presented to and well understood by the students. Effective learning is the one that promotes independent learning. In its implementation, teachers were also expected to pay attention to students with different needs and abilities, meaning that the pedagogical treatment should reflect the students' abilities and intellegence. Individual differences are caused by two factors, namely hereditary factors or birth cognition and environmental factors. Both of these factors affect the growth and development of learners (Hamalik: 2008, 92).

Forms of Implementation and Process of Integrating ICTs Pondok Pesantren Nurul Haramain NW Narmada

Broadly speaking, there were three forms of application of ICTs in Nurul Haramain NW Narmada, which include 1) the implementation of ICTs as a learning tool, 2) application of ICTs as a supporting medium of administration, and 3) application of ICTs as a promotional tool of the Islamic boarding school. As a learning tool, the contributions of learning media were as the followings: (a) the transfer of learning could be more standardized; (B) lessons could be more interesting; (C) learning was more interactive by applying learning theories; (D) the time allotment could be shortened; (E) the quality of learning could be improved; (F) the learning process could take place whenever and wherever necessary; (G) positive attitude of students to learning materials and learning process could be enhanced; (H) the teacher's role changed in a positive direction (Sihotang: 2015, 5) The aforementioned contributions of learning media above could actually promote the quality of teachers in delivering the

materials in the classroom. For the purposes of promotion for the Islamic school, the teachers also made use the social media on the Internet, such as Facebook, Whatsap, Instragram and etc. The promotion could be presented by means of advertisement and brochures, which had been proven to boost the enrollment of the Islamic school (Pratama: 2015, 56). As a result, to empower the student, teacher and staff relationship through computers, the learning should be driven by learning media.

The characteristics of ICTs in Nurul Haramain Islamic Boarding School in comparison to other schools

The characteristics of ICTs in Haramain Islamic Boarding School can be illuminated as the followings: 1) the characteristic of ICTs in the boarding school could be seen from the motto of the school which was "do not do things by halves, yet do things at your best, 2) Another distinctive feature especially for teachers was to allow and tolerate mistakes and damage committed by students when learning and using technological devices for the instructional purposes in the school, 3) the availability of a program termed "TUGU SASAK", which stands for Satu Guru Satu laptop Satu Anak Satu Komputer (one teacher one laptop, one student one computer), 4) one characteristic directly associated with the religious aspect was a motto "baik benar indah bermanfaat makmur dan memakmurkan" (good, true, beautiful, useful, prosperous and to propser). For the learning activities, the intergration of ICTs in Nurul Haramain was assumed to have positive effects. The integration ICTs took several forms, which include the use of computers as a medium of learning for students, the use of Internet as an open source for the students and teachers to promote learning, and the use of local networking systems (LAN, Local Area Networking) that can change the command line to be more centralistic. On the other side, Nurul Haramain Nurul Haramain NW Narmada was the only boarding school that integrated ICTs into learning activities. It is incumbent upon other Islamic boarding schools to immiate the effort of Nurul Haramain in integrating ICTs.

The benefits of ICTs for the school, teachers, students in Nurul Haramain Islamic Boarding School NW Narmada

The learning in Nurul Haramain Islamic boarding school is accessible by students every time, in which the students could learn more straightforwardly and flexibly as the materials had been available in their notebooks or Ipads in the form of ebook with PDF format. Hence, the students could learn based on their willingness to learn and level of abilitites without waiting for the teachers' instruction. Students were generally more motivated to study using laptops as they were encouraged to know the lesson earlier, more thoroughly, and more than their teachers did; e.g., using multimedia called "Genius Multimedia" with several pedagogical advantages, such as: (1) empowering learning, (2) making the teachers more effective and efficient in teaching, (3) helping the teachers to make the materials more understandable by students, (4) allowing some teachers the opportunity to be able to make learning apps, (5) affording the teachers to upload learning materials and relevant information for the students using the existing e-learning platform, in which it could be easily accessed by the students at any time and anywhere with their preference, (6) allowing the teachers to effectively manage and present the learning because presentation by means of multimedia could make the learning more meaningful and interesting. Technologies are the

best learning media for the students to learn in that they were more participative during the teaching and learning process. For parents being able to access information online, the Islamic boarding school provided an account by which they could access the lives of their offsprings in the Islamic school via the internet—the information regarding the students' progress of learning was given offline for visiting parents through special computers set in the school, in which they could access the information without quering the teachers or their children. There were some advantages of ICTs for the Islamic boarding school, which include firstly, the school could manage the administration more quickly and accurately. Secondly, ICTs could promote a wider participation in that the learning materials could be assessed by distant learning through the provision of e-learning platform or Learning Management Sistem (LMS). Thirdly, ICTs allow the development of easy lesson for students to learn. Several types of educational software were designed and developed to help children and adolescents learn certain subjects. For example, pre-school software, computer simulators, and graphics software. Fourth, the instruction was differentiated. ICTs facilitate active learning and different learning strategies. This promoted the development of individual learning and independent learning. The students were encouraged to employ multimedia components to integrate their schemata creatively. Fifth, the use of ICTs could accommodate students' learning styles. There were a myriad of students with different learning styles, and ICTs were an ideal means for facilitating the students' nature of learning to meet the learning outcomes. Sixth, ICTs allow the students with low learning achievement to take remedies. In addition, the use of ICTs provided the enrichment activities for learners who had successfully completed regular classes before they needed more time to learn.

The Challenges for the Application of ICTs in Nurul Haramain NW Islamic Boarding School Narmada

The challenges confronted by the teachers in implementing ICT-based learning was to design a learning method that corresponded to the media used. In the past, the teachers did not begin with the material analysis prior to determining the appropriate method of learning. Many of the teachers also applied instructional methods that did not accord with the use of ICTs which prevented the attainment of the expected learning goals. Another barrier found was the supporting facilities. Generally, the internet access in the Islamic boarding school was relatively good, but the internet facilities were not yet evenly distributed to the entire boarding school environment. Similarly, other supporting facilities, such as Diesel generator that can optimize the application of ICTs, could not be completely procured. The headmaster of the Islamic boarding school opined that one of the primary barriers of the ICTs use in the school was the dearth of electicity capacity in that it did not accord with the usage, which was projected to be at ratio 1: 2, which means that it was deficient to about 50% power. The other constraint of ICTs use in the school was the lack of teachers' confidence. Many teachers assumed that using computers did not help students undertand the materials; hence, they remained resistant to change. In addition, another problem was the unavailability of adequate computer modules. The teachers were letdowned by the students who may be more skillful in using computers, so the boarding school suggested that the teachers not to be clueless and be up to date.

The sideliness of traditional values and the conservatism should be minimized within the context of education and development. Such a condition is also caused by the lack of support of the national government that results in the changes belonging to indvidiual domain. Particularly, in Nurul Haramain Islamic boarding school, the transformation was initiated by the school leader because of the absence of the government's supporing resources. Khan, Hasan and Clement advocated that *",,,lack of resources within educational institutions are another major hindrance to the implementation of ICT in a developing country".* In fact, the dearth of resouces is the primary obstacle of the ICTs application in an education institution (Khan: 2012, 73). The students boarding in Nurul Haramain also faced some challenges. The use of ICTs made most of the students lazy to write, interpret and translate Kitab Kuning (Classical Islamic books). In addition, they were limited to access certain webs as a free access means they could be led to porn sites. For this reason, all teachers, school superintendents, and OSNH monitored the use of Internet in the Islamic boarding school. Such a monitoring is also done by their parents.

Conclusion

The application of ICTs in Nurul Haramain Islamic boarding school was driven by the fact that human lives are inseparable form the role of technologies and the fact that there was an intention to develop the computer program for the administrative purposes. The process of planning, implementation and evaluation of ICTs use in the school initially went through teacher conference or meeting, analysis of curriculum based ICTs and monitoring the content accessed by the students. The forms of ICTs intergration in the school included the creation of *Powerpoint,* the operation of *Microsoft Excel* and facilitating LCD as well as sound system in each room. The special feature of ICTS application in Nurul Haramain in comparison to other institutions could be seen from its mottos, including "mengerjakan sesuatu jangan setengah-setengah" (do not do things by halves) and "baik benar indah bermanfaat makmur dan memakmurkan" (good, beautiful, useful, prosperous, and to prosper). The advantages of ICTs for the school, teachers, and students included the expansion of national and global knowledge, and easy and flexible learning. For the teachers, ICTs helped the teachers to quickly and accurately manage learning; the learning resources of the students were wider than that of journalistic and literacy. The challenges of ICTs implementation in Nurul Haramain were (a) the electric power deficiency estimated around 50%;(b) *Bottleneck* when using the *Serrver/PC Client;* (c) costly price of Ipad programs; (d) lack of the national government support; (f) when using laptops or Ipads, students were unaware of the overuse of time.

Recommentation

Drawing on the empirical findings of this study, the researcher provides the following recommendations: (a) Nurul Haramain Islamic boarding school should immediately address the electiric power shortages to prevent further problems; (b) the Islamic boarding school should procure a *Server Client* with a greater capacity to avoid *Bottleneck; (c)* the regulations for the students to use computers/laptops/Ipads should be reexamined and tightened so that the students and the school superintendents were not undermined.

REFERENCES

Sitepu, B. P. 2014. *Pengembangan Sumber Belajar*, (Jakarta: PT RAJA GRAFINDO PERSADA, 2014).

https://id.wikipedia.org/wiki/Teknologi_Informasi_Komunikasi

Ijah Mulyani Sihotang, Media Pembelajaran Berbasis Komputer Dalam Menyusun Laporan Keuangan, Seminar Nasional Ekonomi Manajemen Dan Akuntansi (Snema) Fakultas Ekonomi Universitas Negeri Padang, ISBN: 978-602-17129-5-5

Agung Pratama, M. Strategi Bauran Promosi Pondok Pesantren Darul Muttaqien, *Skripsi*, UIN Syarif Hidayatullah Jakarta. Diterbitkan Online.

Md. Shahadat Hossain Khan , Mahbub Hasan & Che Kum Clement, Barriers To *The Introduction Of Ict Into Education In Developing Countries*: The Example Of Bangladesh, *International Journal of Instruction*, July 2012 .Vol.5, No.2, p-ISSN: 1694-609X, e-ISSN: 1308-1470. www.e-iji.net.

Muhammad Jamaluddin, *Metamorfosis Pesantren Di Era Globalisasi*, Karsa, Vol. 20 No. 1 Tahun 2012.

Munir, *Multimedia*: *Konsep & Aplikasi dalam Pendidikan*, (Bandung: ALFABETA, 2013).

Nurcholish Madjid, *Bilik-Bilik Pesantren,* (Jakarta: PT. DIAN RAKYAT, 2010).

Oemar Hamalik, *Kurikulum dan Pembelajaran*, (Jakarta: PT Bumi Aksara, 2008).

Ridwan Siregar, *Kompetensi Teknologi Informasi dan Komunikasi Guru Bahasa dan Sastra Indonesia, Disampaikan Pada Seminar Nasional Kompetensi dan Profesionalisme Guru Bahasa dan Sastra Indonesia Pada Tanggal* 24 November 2007.

Rusman, *Belajar dan Pembelajaran Berbasis Komputer,* (Bandung: Al-Fabeta, 2013).

Rusman, Kurniawan & Riyana, *Pembelajaran Berbasis Teknologi Informasi dan Komunikasi,* (Jakarta: PT Raja Grafindo Persada, 2013).

Syed Noor-Ul-Amin, *An Effective Use Of ICT For Education And Learning By Drawing On* Worldwide *Knowledge, Research, And Experience: ICT As A Change Agent For Education,* (A Literature Review), Department Of Education, University Of Kashmir

TOSUN Nilgün. Using Information and Communication Technologies in School Improvement. TOJET: The Turkish Online Journal of Educational Technology Volume 10 Issue *1* (2011).

Wina Sanjaya. *Media Komunikasi Pembelajaran*. Jakarta: Kencana. 2012).

****