Why Resist?
A Closer Look at Indonesian Teachers’ Resistance to ICT
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ABSTRACT

This paper offers a critical analysis of Indonesian teachers' resistance to ICT (Information and Communication Technology). Although the Indonesian Government has attempted to overcome the issues of access to ICT through the provision of both software and hardware at schools, the use of ICT in teaching and learning process remains low. In light of this, teachers' resistance to ICT is deemed responsible for causing the problem. Therefore, this paper attempts to examine Indonesian teachers’ resistance to ICT using a perspective which views teachers as a cultural member and considers teaching as a value-laden activity. This paper suggests that teachers may find mismatches between the policies regarding ICT use and their positions as digital immigrants. Furthermore, their beliefs may also come into play in their decisions whether to adopt or to resist ICT use.

Keywords: ICT Resistance, Teachers, Indonesia

INTRODUCTION

The development of Information and Communication Technology (ICT) has rapidly permeated a number of aspects of Indonesian contemporary society. One of the fields in which ICT has been used and integrated is education. Both access to ICT and the skills to be able to engage with it are two of the many essentials in this era of globalisation. Accordingly, it is deemed significant for Indonesian educators to embed ICT in classroom practices so students can contribute in knowledge societies. In light of this, the promises and expectations regarding the integration of ICT in education have underpinned policies in Indonesia requiring teachers to integrate ICT in classroom practices.

Although a number of studies have recorded how the use of ICT may foster teaching and learning, problems regarding ICT adoption persist. The Indonesian Government’s efforts to improve infrastructure as well as to provide schools with more access to ICT
does not seem to result in high use of ICT in education. In this case, teachers are often perceived negatively as being reluctant to integrate ICT in their teaching. However, those arguments often lack teachers’ voices and tend to see the issue from the perspectives of policy makers or administrators. Therefore, in order to come to a thorough understanding on the issue, the complexity of both teaching and teachers’ identities should also be taken into account in the discourse of ICT in education. Thus, this paper uses a perspective which views teachers as a cultural member and considers teaching as a value-laden activity in order to examine Indonesian teachers’ resistance to ICT. To limit the scope of discussion, this paper will focus on teachers of primary and secondary level of education.

In order to address the issue, three major sections are discussed in this paper. Firstly, the discussion on ICT in education covers the promises of ICT integration in education and Indonesian Government policies. Secondly, teachers’ resistance to technology will be scrutinised. Thirdly, some recommendations will be offered in order to better deal with the issue. Finally, there is a conclusion that will summarise major points of the discussion and also address some questions which may offer potential for further research.

**ICT IN EDUCATION**

**Reasons to include ICT in schools**

The term ICT, which is short for Information and Communication Technology, is widely recognised in the 21st century. According to Bell, Loader, Pleace, and Schuler (2004) “ICT encompasses all digital computing and communication equipment” (110). The definition denotes that ICT is related not only to computers but also to other digital devices such as mobile phones and digital televisions. Cuban (1986) and Wang & Reeves (2003) have documented how earlier types of ICT such as film, radio and television entered educational settings. Yet, the term ICT used in this article refers to computers and the Internet which are two of the recent, major developments in ICT which have been widely adopted in Indonesian schools.

There have been many factors influencing the inclusion of ICT in education. According to the OECD (2001), economic, social, and the pedagogical rationales become the
underlying principles of ICT integration in schools. The economic factor makes it essential for ICT skills to be acquired because having ICT skills is deemed central to employability in the changing market. In the same vein, Yelland (2001 in Clarke and Zagarell, 2012) argues that traditional approaches to learning are less likely to be suitable to prepare students to participate in contemporary workplaces. The social factor encompasses the need to adopt ICT in schools so the students can contribute to society. The last rationale, the pedagogical rationale, focuses on the pedagogical impact that ICT may have, such as developing higher-order thinking skills (OECD, 2001), increasing levels of participation and collaboration (Davies & Merchant, 2009; Reeves, Herrington & Oliver, 2002), and amplifying creative teaching strategies (Lih-Juan, Jon-Chao, Horng, Shih-Hui, & Chu, 2006). With all the promises that ICT has in education, many technology promoters claim it as being able to revolutionise education (Cuban, 1986; Bromley, 1998; Drenoyianni, 2006) and to “totally transform schools by making them more efficient and productive” (Cuban, 1995, 34). These views have then encouraged schools to adopt new technologies without realising some problematic issues behind the use of ICT.

Ideological issues of ICT Use

Wang and Reeves (2003) state that “especially in the last 25 years, emerging ‘new technologies’ such as computers and the Internet have attracted many people to research and practice focused on improving education with technology” (50). Despite the fact that new technologies usually trigger some enthusiasm in society, there is no guarantee if those technologies can be applicable to answer educational problems. In light of this, Ely and Plomp (1986) point out that “the mystique which surrounds the new technologies causes enthusiasts to try to apply them in almost any setting without, however, raising the ‘right’ questions” (237). The discussion of ‘right questions’ seems to be based on ideological issues that may be embedded in the policies on ICT in education. The ideology is rooted in the American ideas about the nature of technology as deterministic, beneficent, and apolitical (Leonard, 2003). Similarly, most writing on the use of computers in schools “implicitly assumes that technology is beneficent” (Bromley, 1998, 2).
There has been a belief enunciated through the notion of technology determinism stating that access to technology equals to improvement and better society. In the same vein, Bromley (1998) claims that “it is assumed that anything involving new technologies must be an improvement; that it can, and indeed will, make life much easier for educators who now suffer in undertechnologized situations” (2). When looking at computers as a symbol through the theory of representation (Hall, 1997), there has been an unseen circulation of meanings in the society towards the use of computers in education. What may be believed by our society is the equivalence of progressive education and ICT development, particularly computers and the Internet.

Leonard (2003) has also critically examined the perception viewing technology as equal to progress. She challenges the idea that progress can be marked out by the development of technology in society. Thus, progress is seen as a myth as it tends to simply focus on how technologies have been adopted in the contemporary society to mark some degrees of modernity spread through Western ideology. Progress, in her opinion, has not taken place providing that social equalities have not followed. Therefore, computers as a symbol of quality education (Bromley, 1998) and a representation of power (Eisentein, 1998) are articulated in many policies which see access as essential and simply place physical presence of computers as central to successful, progressive, and modern learning. The spread of the ideology then obscures the fact that “technology is where the money is in education” (Kenway, 1998, 76). As a matter of fact, education has been a targeted market by computer companies which may spread the idea that adding technology into the curriculum will automatically add value to students’ learning.

**Policies on ICT in education in Indonesia**

The promises that ICT has in education have made many countries stipulate policies on ICT in education. According to Yeung, Taylor, Hui, Chiang, and Low (2011), some of the policies are Singapore’s *Third Masterplan for ICT in Education*, New Zealand’s *ICT Strategic Framework for Education*, and *The National Education Technology Plan* in the USA. One of the aims of the policies is to integrate ICT in education to enhance student learning. Yeung et al. (2011) further state that the reasons underlying the requirements
to integrate digital technology (DT) in teaching are the pedagogical effects that DT can bring about, such as increasing students’ motivation and learning effectiveness.

Ham and Cha (2009) establish that “most national policy documents assume that a well-trained labor force equipped with ICT literacy is indispensable to national development and individual self-actualization in the ‘knowledge-based’ global economy of the new ‘information age’” (538). Similarly, the Indonesian Government realises how ICT in education is a necessity so that its society can participate in the global market in which information may be one of the prominent commodities. In this Information Age, Yuhetty (2002), states that the Indonesian Government is concerned about recovering the difficulties which its society finds in seeking for, receiving, processing and producing information. The concern that she raised seems to focus on the low percentage of internet users in the country. As reported by the International Telecommunication Union (2011), internet users in Indonesia only comprised 18% of the total population. Indonesia’s diverse socio-economic background along with factors associated with gender, ethnicity, and level of education have all served as issues which widen the gaps between the digital haves and the have nots.

Access is certainly a big concern in many developing countries including Indonesia. Quah (2007) points out that inadequate hardware and software in Indonesian schools becomes the cause why not all schools use ICT. Quah (2007) states further that “the Government of Indonesia is concerned about the low use of ICT in teaching and learning in schools” (25). As such, ICT skills and the provision of hardware and software serve as some major issues that are addressed through some of the programs concerning ICT development, particularly in education.

The (2011) points out the Indonesian Government should immediately solve the problem of access in coping with the demand for computer literate workers by the job market. Due to the close interconnectedness between the job market and education, the government thus attempts to address the problems by introducing ICT in education. The inclusion of ICT in Indonesian education was initiated through the addition of an ICT subject in the 2004 curriculum (Quah, 2007; The, 2011; UNESCO, 2004). Based on the 2004 curriculum, the ICT subject is learned by students at both primary and secondary levels. However, in addition to being offered as subject, ICT is also expected
to be used in teaching and learning activities. Moreover, the Indonesian Ministry of Education (MoE) is “determined to make use of ICT in resolving educational problems” (UNESCO, 2004, 25). As a result, this policy is stipulated in the Appendix of Presidential Instruction No. 6 year 2000.

According to the report by UNESCO (2004), one of the programs launched by the Indonesian Government to develop ICT infrastructure is One School One Laboratory (OSOL) program. The implementation of OSOL is regulated through the Ministry of Communication and Information under Ministerial Decree 17/KEP/M.KOMINFO/4/2003 which encourages the provision of low priced computers. In addition, the government has distributed computers to schools particularly those in remote areas to narrow the gap of access in schools across the country. For instance, recently the government distributed 150 computers and 40 laptops to primary and secondary schools in the Bintan Regency which can be considered as a rural area (Haluan Kepri, 2012). The grant was aimed to facilitate the teaching and learning process using ICT in the schools. UNESCO (2004) also points out that the government has allocated funds to a small number of schools to develop ICT infrastructure as well as to enhance the teachers’ ICT skills. Moreover, considering the limited budget in building ICT infrastructure, the Indonesian government has called on some private companies in ICT such as PT. Indosat, PT. Telkom Indonesia, and Microsoft Indonesia, to take part in the projects.

Although the government has attempted to provide schools with more access to ICT, a survey undertaken by the Ministry of Communication and Informatics in 2011, reports an indication of low use of ICT (Kominfo, 2011). The survey was conducted in 801 private and public schools, comprising primary to secondary levels, in 17 major cities in Indonesia. It is reported that 98% of the schools made use of computers in teaching and 80% of them had access to the Internet. Computers were used for approximately 6.5 hours per week and the Internet was used for 4.1 hours per week. As many as 79% of the schools gave students homework which required them to access the Internet. Yet, the most thought-provoking result is the ratio of teachers that use ICT during their teaching and learning process which was only 0.39%. Bearing in mind that the schools are those in major cities that are assumed to have more access to ICT, it seems
paradoxical that ICT use is very low. Teachers’ resistance to use ICT in classroom instruction is often considered as one of the causes why the use of ICT in schools is still far from satisfactory. Therefore, the following section will scrutinise some aspects that may result in teachers’ resistance to implementing ICT in their teaching practice in Indonesia.

**INDONESIAN TEACHERS’ RESISTANCE TO ICT**

As mentioned in the previous part of this paper, the integration of ICT in Indonesian education seems to offer many potential benefits so that the Indonesian Government stipulated policies on the use of ICT in teaching as well as provided more access to ICT to teachers and students in schools. However, providing that access is already available, there are still many factors contributing to teachers’ use of ICT in classroom practices. The situation in Indonesia is in line with what Cuban, Kirkpatrick & Peck (2001) argue that having access to hardware and software is not equal to extensive ICT use by both teachers and students. Similarly, “while there is more technology in classrooms, there is little evidence that these technologies are integrated into instruction” (Oncu, Delialioglu, & Brown, 2008, 20). In light of this, Cuban (1986) states that teachers have been “singled out as inflexibly resistant to ‘modern’ technology” (2). Therefore, although the issues of access are not overlooked, they are not elaborated in details throughout this paper as this paper focuses more on teachers’ resistance to technology providing that the access to it is actually available.

Although many studies have discussed teachers’ ICT resistance as well as adoption, they tend to view it from the perspective of technology promoters, policy makers, and administrators (Cuban, 1986; Cuban et al., 2001). In the same vein, Wang and Reeves (2003) make a strong claim that “failing to pay attention to teachers’ perspectives, administrators and technology experts assumed that the failure was caused by teachers’ resistance; they rarely tried to find why teachers didn’t want to use these technologies that seemed so powerful” (57). Considering that teaching is a complex activity, what contributes to their decisions in adopting or resisting ICT use should also be taken into account. In order to do so, different perspectives should be adopted in order to better articulate teachers’ voices.
Teachers as digital immigrants

Drawing on the notion of digital natives and digital immigrants, terms coined by Prensky (2001), teachers’ position in regard to ICT may be examined in a way that teachers’ voices can resonate more powerfully. Digital natives are the “‘native speakers of the digital language of computers, video games and the Internet” (Prensky, 2001,1). In the same vein, Brooks (2008) uses the term generation Y and Z referring to those who were born in the era where technology innovations have extensively and significantly affected social life thus enabling them to acquire the technological skills naturally. As opposed to digital natives, digital immigrants are people who were not born in the digital world but eventually adopted new technology. Most Indonesian teachers, therefore, ‘plunge’ into the digital immigrant category. In many ways, this dichotomy emphasises different cultural settings which makes it challenging for teachers to shift from their culture to the new emerging culture. The most salient thing is that teachers may lack skills required to ‘explore the digital world’ which results in their being unconfident in using ICT.

Despite being immigrants and the ‘other’ in terms of acquiring ICT skills, teachers may also be ‘a newcomer’ to the pedagogical consequences that ICT may have in classroom interaction. When being brought into classroom practices, ICT should not be simply seen as a tool. Rather, there are important consequences that may follow along with the integration of ICT in the classroom. Firstly, the presence of computers may shift the pedagogical focus from a teacher-centred to a student-centred approach. Accordingly, ICT also transforms the way in perceiving teachers as the centre of knowledge to viewing teachers as co-constructors of knowledge. Similarly, “the role of a teacher should be to lecture less and, instead, guide students in directions that will allow them to discover as they work (either independently or with other students) and to understand instructional content” (White, 2002, in Lih-Juan, et al. 2006, 58). In other words, integrating ICT in education calls for a paradigm shift (Clarke & Zagarell, 2012), which may be problematic as the shift also involves teachers’ identity. In light of this, appropriation, resistance, and negation are three processes that contribute most to identity formation (Ha, 2008).
The aforementioned consequences seem to cause some tensions if brought to the Indonesian educational culture. Although, lately, constructivism has been a notion that is being echoed along with the development of ICT in the Indonesian education system, it may not be widely practised in schools. For instance, Sutjiono (2005) points out the habit of giving lectures that Indonesian teachers have. This type of habit may be rooted in one of the Javanese philosophy of a teacher, or in Javanese language and Bahasa Indonesia (Indonesian language), a guru. Although the word may actually come from Sanskrit, many Javanese will say that the word ‘guru’ is made from two Javanese words. The syllable ‘gu’ in guru comes from digugu (the information from a guru is to be trusted) and ‘ru’ from ditiru (a guru is to be a model for students). The values implied from the word seem to bind what people think about a teacher and what a teacher is expected to do. In this digital age, information heavily flows through the Internet, which makes those values seem to be not applicable. Students can obtain information in a much faster way without having to rely on the teachers. Thus, the practice of giving many lectures and being the centre of knowledge can be seen as part of teachers’ identity which has been constructed for many years and now is seen as inappropriate in the information age. Taking up a new identity in many ways brings many challenges and may lead to either resistance or adjustment. This discussion of identity is therefore inextricable from the discussion of changing cultures as elaborated previously.

Another problem that Indonesian teachers encounter is the limited number of software written in Bahasa Indonesia (Indonesian language). 80 % of the language used in posting online content is English (Baughn & Buchanan, 2001). Therefore, this problem leads to another problem as pointed out by Lih-Juan et al. (2006) that access to technology means access to English. Considering that English is not the first language in Indonesia and learning English may only be affordable for those coming from a higher social class, not all teachers have English competence and therefore do not seem to feel engaged in ICT. In this sense, they are disadvantaged because of being short of both ICT and English skills.

RECOMMENDATIONS

The preceding parts of this paper have discussed how teachers’ resistance to ICT use in classrooms can be a channel to confront ideologies and pedagogical consequences
that are brought along with the integration of ICT in education. Therefore, after the problems on teachers’ resistance have been examined, there should be some recommendations in order to deal with the issues. There are three recommendations offered that may be beneficial in facing this issue.

First, there is an inevitable need to provide ICT training to teachers at the earliest stage possible. Some Indonesian higher education institutions have started this by offering ICT in education as part of the curriculum in their teacher training programs (UNESCO, 2004). However, besides introducing ICT integration in education, there is also a strong need to raise the awareness of the ideological issues as well as pedagogical considerations that should be taken into account when ICT is used in the classroom. Teachers should be aware that those policies are ideological and thus may carry some ‘hidden agendas’. By having the awareness as well as the skills to integrate ICT in education, teachers can be more judicious in assessing the necessity of using ICT based on their own teaching context. In the same vein, similar training should be continually offered to school teachers. Since influence from colleagues contributes to teachers’ decisions in using ICT (Onucu et al., 2008), peer mentoring programs can therefore be one type of training that may facilitate the teachers’ transition to digital culture. In peer mentoring, the schools can assign teachers who are more experienced users of ICT to train other teachers. This type of learning seems to be more powerful rather than inviting an expert outside the schools to give training to teachers. In addition, through peer mentoring, actual contexts that happen in the classrooms may be discussed and teachers can exchange their ideas on how certain types of technology may work best in those certain contexts.

Second, there should be a standpoint which sees teachers and teaching as complex and dynamic. Prensky (2001) highlights that adjusting to this new digital culture is a must for teachers as it may be impossible for students to reverse to teachers’ culture. However, it seems that he overlooks the dynamics of being a cultural member and particularly a teacher. Teachers entering this digital age and trying to acquire the skills should be seen as a ‘language’ learner. The term language here suggests a broader meaning as proposed by Hall (1997) who defines language as any symbolic system which carry meanings and work through the system of representation. In this discussion, ICT skills are also a form of language which may not be proficiently ‘spoken’ by many
Indonesian teachers. They are also ‘immigrants’ who can either quickly adjust to the new environment and culture or resist the changes in contemporary society. Thus, it may be applicable to see teachers’ efforts to learn the new language and transition to the new culture as a matter of investment (Peirce, 1995). In spite of the fact that teachers may be highly motivated to learn the target language “it is their investment in the target language that will lead them to speak” (Peirce, 1995, 26).

Investment should also be seen as related to teachers’ identities which are multiple, changing, and contradictory. A classroom is a site of struggle (Ha, 2012) where paradoxes coincide. Cuban (1986) mentions some paradoxes that teachers may undergo, such as the expectations to socialise students but also promote individual creativity, and the expectations to make students obedient to authority but at the same time foster each student to critically think and question. Those contradictions may place teachers in a difficult position. Demetriadis et al. (2003) contends that teachers’ resistance or adoption to ICT is ‘cultures in negotiation’ in which negotiation occurs not only between teachers and external supporters of ICT such as governmental services but also inside teachers themselves, “forcing them to decisions that accept/adapt/reject modes of ICT based teaching” (33). Although the use of ICT in schools is unavoidable so as to take part in the contemporary society, adopting or resisting the use of technology in classroom cannot be seen as either wrong or right decision but a complex situation in which many factors are intertwined. In addition, as postmodernism rejects the clear cut nature of binary opposition (Carlson & Apple, 1998), seeing teachers’ resistance or adoption cannot be seen as a dichotomy. Rather, a degree of transition in adopting ICT should also be taken into account.

Third, rather than imposing certain policies on the use of ICT in education, the government should be focusing more on how critical pedagogy can be fostered through the use of ICT. According to Tilaar (2005), a meta-narrative of progress and modernity is salient in Indonesian society through globalisation which seems to widen the gap between the poor and the rich as well as to erode local values. What generally happens in schools is that teachers use technology in the classroom without having an in-depth understanding on how the spread of ICT has carried a narrative of progress. In light of this, teachers should help students understand hegemonic practices, and respect all students’ voices as well as their identities as constructed by certain historical and
cultural context (Carlson & Apple, 1998, 25). As the purpose of education is to democratise students (Carlson & Apple, 1998) and “to equalize social and economic disparity within society” (Whybrow, 2008), education should aim to realise forms of oppression, and then empower students to do something about it. Therefore, technology use in classroom should be a tool that can lead to democracy and empowerment as what Auld and Darcy (2008) did when they designed talking books to teach literacy skills to indigenous Australians. Hence, the use of ICT will be beneficial providing that it is well-designed to meet students’ needs and to lead students to change.

Through critical pedagogy, teachers are expected to “be researchers (at least in informal ways) to learn from their students and constantly rethink their pedagogical practice” (Canagarajah, 1999, 194). In the same vein, Nakata (2003) claims that an effective teacher should not be confined to one particular method but should think, reflect, and review their experiences so s/he knows what works and what does not. Through the concept of visible learning, teachers can research what works in the classroom through the use of feedback and monitoring (Hattie, 2009). Thus, it is the pedagogy which should be the basis of teachers’ decision to adopt ICT. Osweld (2003) in Wang & Reeves (2003) states that “it is the pedagogical issues rather than the technological changes that are essential to technology integration in classrooms” (55). Similarly, as Oncu et al. (2008) argue, too much focus only on technology will not be able to completely portray the relation of technology and learning. Therefore, learning is central to the decisions on technology integration into classroom instruction and any use of ICT in classrooms should lead to a more effective learning process.

CONCLUSION

To sum up, this paper has elaborated the issues of teachers’ resistance to ICT by taking Indonesian schools as a context. From the elaboration, it can be seen that teachers’ decisions to resist the use of ICT may be rooted in many interlinked factors. Indonesian teachers are, to some extent, digital immigrants who face numerous challenges in this digital culture. In addition, the positive expectations around ICT in education may conflict with some pedagogical issues that teachers deal with in classroom interaction. Therefore, in order to solve the problems, peer mentoring should
be undertaken to help teachers in the cultural transition. Besides, teachers should be seen as having complex and dynamic identities, which make it difficult for them to position themselves in certain circumstances. Most importantly, pedagogical processes are what should be considered rather than focusing too much on technological processes. This paper also has attempted to shed light on teachers as moral agents whose decisions cannot be seen as either wrong or right but depend on their beliefs (Johnston, 2002). After examining this issue, there are some questions that may be useful for further research: (1) How do Indonesian teachers as digital immigrants negotiate their both professional and personal identities in regard to ICT adoption? (2) Has ICT use to some extent promoted democracy as the heart of education?, and (3) How do Indonesian teachers appropriate the use of ICT in teaching their subjects?. By examining those proposed topics, it is hoped that the complexity of the interlinked factors among Indonesian teachers, ICT, and pedagogy will be elaborated more thoroughly.

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