School Improvement Efforts and Challenges: A Case Study of A Principal Utilizing Information Communication Technology

Nur Ain Wong Abdullah\textsuperscript{a}, Dorothy DeWitt\textsuperscript{b}, Norlidah Alias\textsuperscript{b}\textsuperscript{*}

\textsuperscript{a}Ministry of Education, Kuala Lumpur, 50604 Malaysia
\textsuperscript{b}Faculty of Education, University of Malaya, Kuala Lumpur, 50603 Malaysia

Abstract

There is a shift in school improvement paradigm over the years due to the advancement of technology. School improvement efforts are more focused on capacity building, improved teaching and learning processes, high level student learning outcomes, and creating a community of learning amidst a digitized learning environment. This has transformed the roles and responsibilities of principals to make ICT as an enabler for effective teaching and learning. In this context, this case study is attempted to explore the best practices employed by a principal in an urban secondary in Kuala Lumpur. The findings indicated the importance of principal’s leadership qualities, attributes and his belief in the use of information communications technology to guide ICT utilization in school.

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\textsuperscript{*} Corresponding author. Tel.:+603 7967 5077; fax: +603 7967 5139.
E-mail address: dorothy@um.edu.my
1. Introduction

Current school improvement efforts are influenced by technology advancement. Information and communication technology (ICT) has compelled teachers to use innovative pedagogies to improve learning. Aligning to changing pedagogies and learning with ICT, reforms in curriculum, assessment, governance and financing (Levin, 1998 in Hopkins, 2001) were evident in education systems in countries like Australia (Schiller, 2003), Hong Kong (Yuen, Law & Wong, 2003), Britain, Canada, Ireland, Japan, New Zealand, Singapore (Ministry of Education, 2003) and Malaysia (Ministry of Education Malaysia, 1996).

For school improvement, principals are expected to improve student achievement (Hopkins, 2001; Leithwood, Day, Sammons, Hopkins & Harris, 2006; Crum & Sherman, 2008). However, due to centralized policies (Hopkins, 2001), efforts to enhance teacher’s capabilities may be hindered. Meanwhile, concrete links between school leadership and school improvement ICT could yet be established in educational and leadership studies in Canada, United States of America, United Kingdom, and Australia (Barth, 1990; Gray, Hopkins, Reynolds, Wilcox, Farrel & Jesson, 1999; Harris, Day, Hopkins, Hargreaves, Hadfield & Chapman, 2003; Leithwood, Day, Sammons, Hopkins & Harris, 2006; Ross & Gray, 2006; Crum & Sherman, 2008).

The Ministry of Education, Malaysia upholds ICT as an enabler to propel education to greater heights (Ministry of Education, Malaysia, 2006). However, the challenge lies in the principal’s autonomy to implement change due to the hierarchical organisational structures and centralised school management. Moreover, research on ICT utilization and leadership in the local context is scarce. Most studies on school leadership focus on effective schools and developmental models (Rahimah Ahmad, Zulkifli Abdul Manaf & Shahril Marzuki, 1999; Shahril Marzuki & Mohd Faisal A. Ghani, 2007). A recent study on factors affecting leadership and ICT utilization in Malaysia indicated there is no significant relationship between ICT competence and transformational leadership in implementing ICT (Mojgan Afshari, Kamariah Abu Bakar, Wong & Saedah Siraj, 2012). Hence, case study to explore the best practices employed by principal to guide ICT utilization in school is required.
2. School Improvement, Leadership and ICT Implementation

Technology has transformed how pupils learn, how teachers teach and influences how school principals envision opportunities for ICT utilization for teaching and learning (Ministry of Education Malaysia, 2010). To facilitate effective ICT adoption, school processes need to be redesigned (Law, Wong and Yuen, 2003). Learning is curriculum-driven and technology supports learning (Ministry of Education Malaysia, 1997). Hence, teachers should innovate their teaching practices and adopt constructivist and learner centred approaches to make learning fun and engaging (DeWitt, 2010).

ICT in education programmes were more focused when it was established that ICT enhances the quality of education (Tong & Trinidad, 2005 in Mojgan Afshari, Kamariah Abu Bakar, Wong & Saedah Siraj, 2012). ICT-competent principals were found to be more successful in implementing ICT programs (Hughes & Zachariah in Ho, 2006). To facilitate creation of digital citizens, school administrators are needed to be visionary leaders, competent instructional designers and excellent professional practitioners, as highlighted in the National Education Technology Standards (International Society for Technology in Education ISTE, 2009). Therefore, it is essential for school principals to be knowledgable and to develop relationships to sustain the culture of ICT utilization (Fullan, 2001; Mojgan Afshari, Kamariah Abu Bakar, Wong & Saedah Siraj, 2012).

Leadership is a social process involving complex relationship-webs with multiple and evolving influences, with the intent to influence followers to move in a desired direction (Ho, 2006). School principals were recommended to regenerate school systems by resetting directions, redeveloping its people, redesigning their organizations, and managing their instructional programmes for organizational transformation (Leithwood, Day, Sammons, Hopkins & Harris, 2006). Building teachers’ capacity, encouraging innovative pedagogies and creating communities of learning are focus areas to consider (Barth, 1990; Gray, Hopkins, Reynolds, Wilcox, Farrel & Jesson, 1999; Hopkins, 2001). The transformational entities should include facilitating instruction, developing personnel, facilitating leadership, delegating and empowering teams, recognizing the ultimate accountability, establishing communication and rapport, and managing change (Crum & Sherman, 2008), as well as developing staff competencies and providing accessibility to the teaching and learning content (Glickman, Gordon & Ross-Gordon, 2010). Teachers, senior management, governors and parents contributing as the ‘community of learners’ is of importance because these groups energize their learning as well as of others. In advocating the importance of school capacity in school transformation, a new dimension of technical resources refers to the quality of the curriculum, instructional material, assessment instruments, effective use of technology for the work place was identified (Newman, King & Young, 2000).

School principals are instructional leaders in leading curricular instruction in school (Leithwood, Louis & Anderson, 2004). However, school principals as change facilitators were found to be successful in initiating and implementing school change with ICT (Schiller, 2003). A recent research has indicated transformational leadership as the significant leadership type to influence and promote ICT utilization in schools (Yee, 2000 in Mojgan Afshari, Kamariah Abu Bakar, Wong & Saedah Siraj, 2012). Transformational leadership explained as idealized influence, inspirational motivation, intellectual stimulation and individualized consideration occurs when one or more persons engage with others in manners that leaders and followers raise one another to higher levels of motivation and morality (Geijsel, et al. 2003). Creating collegial norms is the principle behind this principal-teacher collaboration (Davies, 2005; West-Burnham in Bush, 2005). The key to building these interpersonal relationships depends on how effective school principals encourage and empower teachers to share the role of ‘change agentry’ in the change process (Senge, 2005). These initiatives could result in raised confidence levels and renewed expectations among the education community. However, successes of such initiatives are highly dependent on the school culture and the quality of interpersonal relationships (Barth, 1990).
Meanwhile, a research in 800 schools in USA indicated that technology leadership is necessary for effective ICT utilization in schools (Anderson & Dexter, 2005). In technology leadership, pupil engagement in authentic learning experiences, supported by the use of appropriate technology; sharing a vision of defined technology’s place in education; effective professional development; equity of access by providing ICT access to pupils regardless of the skill or interest of their teacher; and ubiquitous network where digital technologies are available whenever and wherever needed were areas which need to be addressed (Flanagan & Jacobsen, 2003). Similar entities of vision, access and support were reflected in Riedl’s technology leadership model (Ho, 2006). Ultimately, school principals take on different leadership roles to ensure ICT is utilized for teaching and learning. They are the instructional leaders, transformational leaders and technology leaders.

3. The Study

In this exploratory case study, an inductive approach is used to investigate leadership practices and ICT utilization by a school principal of an urban secondary in Kuala Lumpur. The best practices employed for school improvement amidst a budding and developing digital school environment in Malaysia was observed. This study attempts to explain the connection between ICT utilization from the following perspective.

a. What is the belief of the school principal regarding ICT in education?

b. What are the leadership practices adopted by the school principal?

c. What are the attributes shown by the school principal?

4. Methodology

4.1. Research Design

This case study explores the emergent leadership themes in relation to ICT utilization. Relationships between people, and findings based on views and actual accounts of how the school principal influences the use of ICT by stakeholders especially teachers, student, parents and the community are determined by the grounded theory approach. This systematic analytical procedure was selected because it could explain phenomenon and context which are not clearly evident where multiple sources of evidences are used (Yin, 1994) besides facilitating meaningful analysis of data by linking particular facts and areas without biasness (Lincoln & Guba, 1995).

4.2. Sampling

A school was selected based on its impressive track record on successful ICT utilization and its establishment as the centre of academic excellence. The school principal was awarded the ICT Excellent Leadership Award in 2008 due to his accomplishments in leading ICT for teaching and learning. The school found to excel in co-curricular activities, English language and ICT niche areas was also conferred the cluster school of excellence in 2008 by the Ministry of Education, Malaysia.
4.3. Data Collection

Open-ended interviews were conducted to determine leadership practices and ICT utilization in the school. Probing questions were used to explore emerging themes in depth by permitting free and unlimited responses (Lincoln & Guba, 1985). Consent for participation and the use of research data was obtained prior to research. The interview was audio-recorded and transcribed. Subsequent interviews were conducted until sufficient data was found for corroboration. Information was also collated from reviews of the school mission and vision statements, the school’s charter, event logs, the school annual magazines et cetera and school’s websites.

4.4. Data Analysis

In analysis, the transcript was categorized according to leadership themes and mapped to establish emerging links between school leadership practices and ICT utilization. In data presentation and analysis, these findings were supported with literature and quotes from the sample.

5. Findings & Discussion

The emerging themes in relation to transformational leadership, instructional leadership and technology leadership were found to contribute to successful ICT utilization in school. Four improvement initiatives linking leadership practices and ICT utilization identified were realigning school practices, building teacher capacity, building community support, and building a culture of technology utilization.

Findings are explained in two segments: (1) the school principal’s beliefs in ICT utilization and (2) how the school principal’s leadership practices and leadership attributes influences the initiatives attempted for ICT utilization in school. The leadership attributes are used to explain the leadership practices

5.1. School Principal’s Belief and ICT Utilization

Successful school improvement initiatives are highly dependent on the beliefs of the school principals due to factors of passion, ownership, skills and knowledge (Fullan, 2000). In context of this case study, the school principal’s firm beliefs on the importance of ICT for school transformation were indicated below.

“...As I have pointed out earlier, the school has long since established in academic excellence but to maintain and further improve teachers and students in this aspect, I choose to use ICT to areas of learning, teaching and administration....”

“IT is not for show. No doubt people will be impressed with the technology infrastructure but that’s not how it is supposed to be. Technology is to be translated into efficiency and productivity... it is about teachers being able to access resources for teaching and learning and others for administrative purposes...”

The following teachers’ responses were elicited to support the school principal’s belief in ICT.

“...the principal is IT-savvy and he sees opportunities in using IT in school... He practices IT and as you can see we have a technology rich environment...That’s why the school is moving towards IT...” ...He is different... still insist on teaching a few IT classes which is very rare these days...”
5.2. Leadership Practices, Leadership Attributes and ICT Utilization

The school principal demonstrated the transformational, instructional and technology leadership attributes as well as a strategic leader in resetting priorities, organizational goals and planning for developing school capacity.

5.2.1. Realigning School Practice

The respondent was found to be an interventionist, a strategist (Hopkins, 2001) and change facilitator (Barth, 1990; Caldwell in Bush, 2005; Yukl, 2002). The purposeful school leader in the sample who viewed changes with urgency and energy expedited the change (Harris, 2000). His initiatives included resetting goals, environmental scanning, needs analysis, priority setting, planning, budgeting and motivating stakeholders.

“...I set targets and make sure the vision of the school to achieve world class education by 2010 is achieved....I have to scrutinise the school vision and mission and to redefine what is world class education in a very tangible way before setting certain targets for the school...I did an environmental scan to look into gaps and areas for improvement...I get the teachers to do a SWOT analysis of strengths, weaknesses, opportunities and threats other than my own personal scanning... is about turning weaknesses into strengths...”

The school principal empowered teachers to direct management and exercise control over curricular related tasks. The importance of teamwork and ownership, an attribute of transformational leadership (Leithwood, Jantzi & Steinbach, 1999; Bush, 2005) were noted.

“...Teachers are appointed to different committees and they came up with strategic plans, lesson plans and teaching and learning resources... This strategic plan is a point of reference when we finally get down to getting things done...This plan is dynamic and expandable from time to time as we encounter different situations...”

“I have compiled the school strategic plans and uploaded to the school website the school’s Drupple, a Content Management System (CMS) application which I have set up last year so my teachers can access all sorts of materials and resources for instance the strategic plan online via intranet to see what other teachers are doing

“...Ownership among teachers is very important, so what best to do is get them involved in planning and setting targets. I make sure my teachers have ownership of their plans and I practices both top-down and down-up managing... in achieving targets....”

5.2.2. Building Teacher Capacity

Building teacher capacity by developing competencies and establishing professional learning communities (Newman et. al., 2000; Harris, 2000) was identified. Engaging teachers in continuous professional development is very important as it allows teachers to self-sustain and to experiment and construct new knowledge. As an instructional leader, the school leader provided opportunities for teachers to enhance their teaching and learning skills, resulting in more learning possibilities to support student’s learning (Mortimore, 1998; Fullan, 2000).

“...I piloted an internationally acclaimed ICT Certification for my teachers... they went for the ICT courses and were certified... teachers gain knowledge and hands-on skills in using applications... and this is a way to encourage teachers to continuously learn...My teachers are all ICT literate...
they have to proof that they are using higher level applications like Flash and Professional Adobe Illustrator to develop teaching and learning resources and lesson plans.”

“...we are going to set up an LCD projector at main school office to salute long serving and excellent teachers. It is a way for the school to recognise and give appreciation for their hard work...this is the least the school can do to show that we care and appreciate their services and to celebrate their achievements...it is to be unveiled as a surprise for the teachers and a gift during the upcoming Teacher Day in May...”

5.2.3. Building Community Support

Creating and facilitating networks that leverage on good practices were found to enhance relationships between the school and the community (Day, 2005). The school principal has succeeded in negotiating and forming networks and strategic alliances with the community for instance with the State Education Department, the school alumni, parents, agencies and private sectors to support the ICT initiatives. Contribution of expertise for professional development, monetary resources, school infrastructure and ICT equipment were recorded.

“...I usually have coffee ...with the old boys to get them to “buy in” to new ideas...don’t have much problem garnering support in fact I have more demand to supply. They are very supportive in developing the school... the new building adjoining the old wing is fully sponsored by the Old Boys Alumni...The computers in the two (2) computer laboratories are funded by the alumni...”

“...company X tested and piloted an internationally acclaimed ICT Certification...after the one year tenure Company X awarded the school with the set of online software and since then teachers have continuously learn ...”

5.2.4. Building A Culture of Technology Utilization

The continuous efforts to build a culture of technology utilization is influenced by the school principal’s beliefs on ICT as an effective tool and how it can be used to further enhance learning and teaching. In this aspect, the school principal portrayed the attributes of a technology leader who constantly builds student’s and teacher’s capacity in using ICT, and the leader of resource management by providing equal access to ICT (Flanagan & Jacobsen, 2003) and leading technical resources (Newman et. al, 2000; Fullan, 2000).

“...One of the standards of cluster school is single schooling session...this year we implemented the one schooling session...With this new time, we can slot IT classes into the actual schooling timetable which is once a week for all classes...

“... we are provided with projectors and screens to facilitate teaching in the classroom... we also set up a central repository centre where all courseware are loaded up on to the CMS server where students use the content online for self-pace, self-directed and self-access learning..”

The school principal’s efforts to provide equal access to equipment and resources were reflected below.

“...Content Management System (CMS) application which I have set up last year...so my teachers can access all sorts of materials and resources for instance the strategic plan online via intranet...”
“...computer club generates about RM80,000.00 per year...funds are used to pay for utilities and facilitate other IT based activities in school...two (2) IT coordinators come in twice a week to assist in managing ICT... their salary is paid by using the computer club funds...”

“...We were funded RM500,000.00 by the government ...By using this fund, we bought PCs and laptops. At this moment, the teacher computer ratio is 1:1, either PCs or laptops...for existing ICT infrastructure, what I did was to upgrade their equipment with more random accessed memory (RAM)... All classrooms are equipped with mounted Liquid Crystal Display (LCD) Projectors and screens...I’m looking into setting a panel whereby teachers can easily link up their equipment to the projectors ...The whole school is wired and linked up with the Schoolnet, we used the streamyx line where we pay the service providers by using funds from the Computer Club...”

A summary of the improvement initiatives, leadership styles and attributes in ICT utilization in school is tabulated in Table 1.

Table 1: Summary of Leadership Styles and Attributes in ICT Utilization in School

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<th>ICT Utilization in School: Leadership Styles and Attributes</th>
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<td>Instructional leadership</td>
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<td>Instructional leadership</td>
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<td>Motivator</td>
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<td></td>
<td></td>
<td>Involving teachers as managers and leaders in different committee</td>
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<td>Whole school is wired and linked to the world wide web: streamyx and SchoolNet</td>
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<td>Employing IT Coordinators for maintaining equipment</td>
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6. Recommendations & Conclusions

In relation to leadership literature and research, this case study has consolidated the importance of the school leader, his leadership styles, attributes and beliefs as the key for successful ICT utilization in school. However, a clear distinction of a single leadership practice is not evident as the school principal was continuously adapting to instructional, transformational and technology leadership at different instances.

The school principal’s beliefs were also found to influence school initiatives. In implementation, the school principal has had a worldview of how ICT provide teachers opportunities for innovating pedagogies and developing new learning experiences. Secondly, the school leader strongly believed that ICT was the solution for improving students’ learning. Building strong community support is another salient point for success, and being effective negotiators with effective communication skills to bring ideas across is an advantage.

Therefore, the following recommendations are suggested for leadership practices and ICT utilization schools.

- Initiatives are school-based and teacher initiated
- Communicate goals and change efforts to the entire school community.
- Committed to teacher development and professional growth by providing professional learning opportunities
- Develop leadership and temporary systems where groups of teachers act as catalysts for change within the school
- Promote collaborative problem-solving and open communication
- Incorporate a collaborative and participative approach within the school
- Focuses on professional interchange, collaboration and networking where professional communities are established through their work in schools – establishing communities of learning
- Develop improvement and monitoring strategies

However, this case study is specific to one school only, and further research is required to determine if these principles could apply to other cases.

In conclusion, effective school improvement initiatives involve the whole school working in collaboration to motivate and inspire the community in lieu of changes in practices and belief systems. School principals are considered as change agents, ICT leaders and ICT champions to encourage and acculturate ICT utilization in school. Faced with this challenge, it is recommended that school principals explore the possibilities of being transformational leaders, as well as instructional and technology leaders.

REFERENCES


