Veridian E-Journal, Silpakorn University
ISSN 1906 - 3431

The Needs of Information Communication and Technological Management in a Private School's Transformation into a Digital School*

ความต้องการจำเป็นในการบริหารเทคโนโลยีการสื่อสารและสารสนเทศในโรงเรียนประถมศึกษาเอกชนเพื่อการเปลี่ยนผ่านสู่โรงเรียนดิจิทัล

Received: *July 16, 2019*
Revised: *October 30, 2019*
Accepted: *November 6, 2019*

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Abstract

In this study proposed priority needs of school information communication and technological management in private primary schools to become a digital school. The data were collected from 123 private school principals (n=123) and 123 teachers (n=123) using questionnaires. The statistics; frequencies, percentage, mean and SD were used to analyze the data. The result showed that the needs for transforming to a digital school in which it were divided in 4 dimensions 1.) Student's dimension; the teacher uses technology to address the student's individual problems and to present additional information and resources for them to review the lesson. 2.) People's dimension; professional development is needed to improve

* Article from a dissertation entitled "Development of a Digital Transformation System for Private Primary Schools in Upper Northeastern, Thailand" of the Doctor of Philosophy Degree in Educational Technology and Communications Program, Chulalongkorn University in academic year 2018. This research was funded by the 90th Anniversary of the Chulalongkorn University Fund (Ratchadaphiseksomphot Endowment Fund)

บทความนี้เป็นส่วนหนึ่งของวิทยานิพนธ์ เรื่อง "การพัฒนาระบบการเปลี่ยนผ่านสู่โรงเรียนดิจิทัลสำหรับโรงเรียนประถมศึกษาเอกชน ในภาคตะวันออกเฉียงเหนือตอนบนของไทย" หลักสูตรปริญญาครุศาสตรดุษฎีบัณฑิต สาขาวิชาเทคโนโลยีและสื่อสารการศึกษา จุฬาลงกรณ์มหาวิทยาลัย ปีการศึกษา 2561 ได้รับการสนับสนุนจาก "ทุน 90 ปี จุฬาลงกรณ์มหาวิทยาลัย กองทุนรัชดาภิเษกสมโภช

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teacher's technological knowledges and skills in order to utilizing technology into his/her classroom regularly. 3.) Operational Process dimension; the teacher takes advantages of open-online resources to enhance their instruction. 4.) Educational Organization Model dimension; the teacher takes distance learning and utilize it into their classrooms. Based on the results of the study, that was presented to orient the Thai educational policy makers and school leaders to identify the transforming visions for their organization. And this also was presented to the other countries that have a similar context in order to be prepared schools especially in rural areas in transforming them into digital schools.

Keyword: Educational Technology, Information Commutations and Technology, School Management, Digital Transformation, Digital School

บทคัดย่อ

งานวิจัยนี้ มีวัตถุประสงค์ เพื่อศึกษาความต้องการจำเป็นในการบริหารโรงเรียนด้านเทคโนโลยีสารสนเทศและการสื่อสารเพื่อการเปลี่ยนผ่านสู่โรงเรียนดิจิทัล ตามมุมมองของผู้บริหารและครูในโรงเรียนประถมศึกษา สังกัดคณะกรรมการส่งเสริมการศึกษาเอกชน โดยศึกษาจากตัวอย่างเชิงปริมาณ ได้แก่ ผู้บริหาร จำนวน 123 คนและตัวแทนครู จำนวน 123 คน รวมจำนวน 246 คน โดยเครื่องมือคือ แบบสอบถามความต้องการจำเป็นในการบริหารโรงเรียนด้านเทคโนโลยีการสื่อสารและสารสนเทศ

วิเคราะห์โดยการใช้ ความถี่ ร้อยละ ค่าเฉลี่ย และค่าส่วนเบี่ยงเบนมาตรฐาน ผลการวิจัย ดังนี้ ความต้องการจำเป็น ด้านการบริหารงานด้านเทคโนโลยีสารสนเทศในเรียนประถมศึกษาเอกชนเพื่อการเปลี่ยนผ่านสู่โรงเรียนดิจิทัล แบ่งเป็น 4 ด้าน ได้แก่ 1) ด้านนักเรียน คือ ครูใช้เทคโนโลยีเพื่อแก้ไขปัญหารายบุคคลของนักเรียน และการนำเสนอข้อมูลเพิ่มเติมหรือใช้เป็นสื่อให้กับนักเรียนเพื่อศึกษาและทบทวนความรู้นอกเหนือจากที่เรียนในห้องเรียน 2) ด้านบุคลากร คือ การอบรมครูเพื่อพัฒนาความรู้ ทักษะและความเชี่ยวชาญด้านการใช้เทคโนโลยีในการจัดการเรียนการสอน 3) ด้านกระบวนการทำงาน คือ ครูใช้ประโยชน์จากแหล่งข้อมูลเปิด 4) ด้านรูปแบบองค์กร คือ ครูนำการเรียนแบบทางไกลผ่านดาวเทียมร่วมกับองค์กรหรือสถาบันอื่นๆ มาใช้ในการในการจัดการเรียนการสอน จากผลการวิจัยเพื่อเป็นการเสนอข้อมูลต่อผู้กำหนดนโยบายการศึกษาและผู้บริหารสถานศึกษาในการกำหนดนโยบายการศึกษาของประเทศไทยและประเทศต่างๆที่มีบริบทการจัดการศึกษาที่คล้ายคลึงกัน ในการเตรียมการเปลี่ยนผ่านโดยเฉพาะโรงเรียนที่ในเขตชนบทสู่โรงเรียนดิจิทัล

คำสำคัญ: เทคโนโลยีและสื่อสารการศึกษา เทคโนโลยีสารสนเทศและสื่อสารการศึกษา การบริหารโรงเรียน การเปลี่ยนผ่านดิจิทัล โรงเรียนดิจิทัล

Introduction

Digital technologies have been integrated in teaching and learning in recent years with various results. A significant increase of technological integration emerged in schools, however, the preparations of schools have not met with these educational modernism perpetuates (Gillett-Swan & Sargeant, 2018; Littlejohn & Hunter, 2016). Educational systems around the world focus on developing digital competency to promote students to have certain requirements of technological skills (Gil-Flores, Rodríguez-Santero & Torres-Gordillo, 2017). However, the integration of technologies relied on the priorities and resources of various schools. Focusing on Thai context where this study was conducted and one of the developing countries that endeavors to develop and implementation of ICT in education. From research study showed that students became familiar with using technology at home ever since they were in kindergarten (Wong & Li, 2011). However, schools focus on utilizing technology into their classroom mostly in the high school level. As the result, students already built up their personal attitude about technology which can be challenging to change their attitude about technology if technologies are misused. Accordingly, the way to live with this technological era, technology should be integrated into instruction in as early as the kindergarten and primary levels (Ribble, Bailey & Ross, 2004).

Thailand recognized the importance of digital technology as a crucial tool in driving development (Ministry of Digital Economy and Society, 2016). It is defined in the national policy about information and communication and technology in the Education Development Plan of 2017-2036. Government and private sectors attempt to provide and support technological infrastructures for schools, to integrate technology into instruction and to promote students' knowledge and technological skills. Despite, attempting to take technology into teaching and learning, many researches showed that utilizing technology into schools was not successful which also had similar results in many countries. Due to the policies which were not lead to practices, incomplete policy statement and policy that was unrelated to practices in the actual classroom setting as well as there was no sufficient theories to support it. (Hur, Shannon & Wolf, 2016; Inan & Lowther, 2010). Consequently; there is no connection between the policies and practices. However, even the school management strategies provided goals, purposes and values but the blueprints were ambiguous which did not lead to practices (Ward & Parr, 2011). In addition, the main factor of integrating technology within schools are the principals due to having school leaders play an important role to foster technology to be used by teachers in their instructions and staffs to take advantages of technology in their work.

Promotion and utilization of digital technology in schools are an important mechanism in driving educational reform policy and should be started at an early stage such as in the primary level. Considering the comprehensive potential of digital transformation in schools as a reference for school leaders to start taking actions, it is necessary to investigate requirements which are needed for information communication and technology management in schools for transforming them to digital schools.

The current article was based on literary reviews regarding digital transformation in academic journals, which aims to study the needs of information communication and technological management in the primary private school transformation into a digital school with 123 school principals and 123 teachers from private primary schools in Thailand who are responsible for digital transformation in their organizations.

The purpose of the study was to provide an overview concerning for school leaders to contribute to a better understanding of preparation for the digital transformation phenomenon as a starting point and a strategical form of educational organization development.

Research Framework

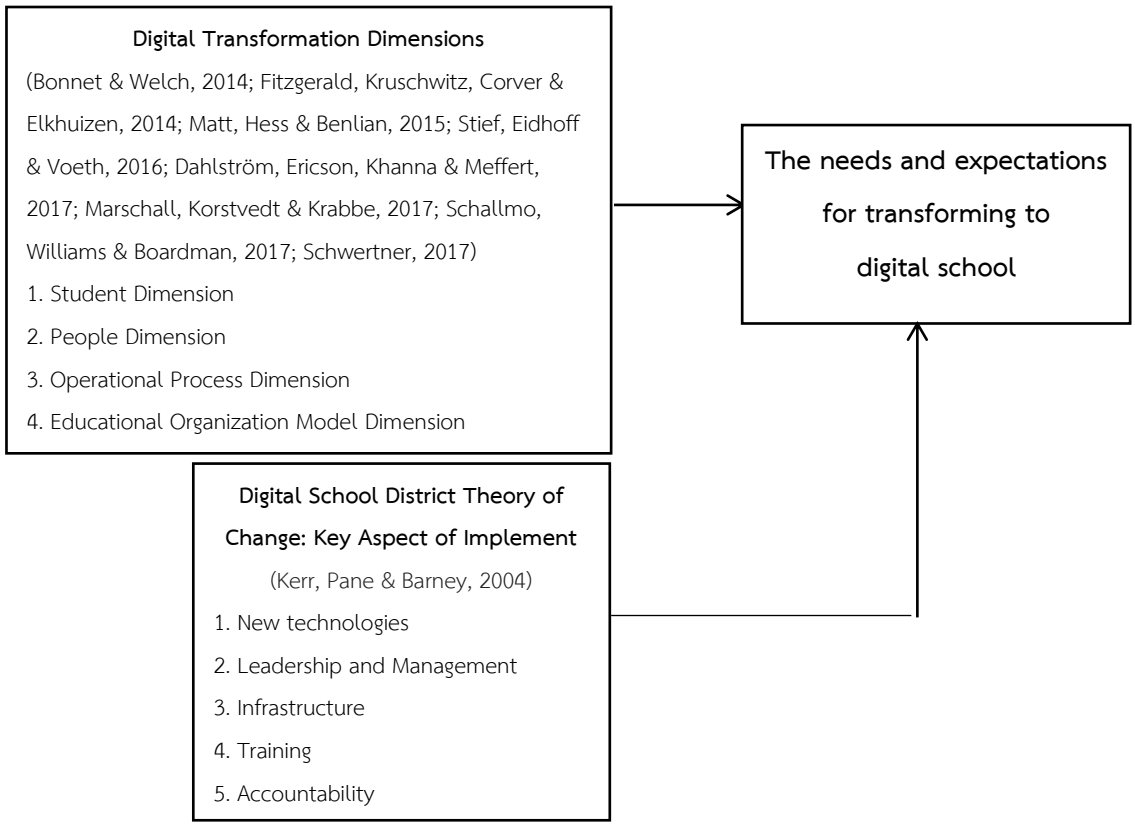


Figure 1 Research framework

Definition and Dimensions of the Digital Transformation in Schools

Definition of Digital Transformation in Schools

Digital transformation refers to the implementation and application of uses of information communication and technology into a school's existing activities. The transformation lead to altered or completed new processes, educational services and educational organization model in favor of capturing new opportunities and advance potential from technological development (Stief, Eidhoff & Voeth, 2016).

Dimensions of Digital Transformation in Schools

In schools, digital technologies can be utilized and enhancement of activities in various approaches. Regrading to the reviews and analysis of successful digital transformational organizations, the transformation in schools can be divided into 4 dimensions

1. Students Dimension: In education, even though the student cannot be compared directly as a customer on a business standpoint wherewith schools are unable to exploit its students. However, if considering between business companies and schools which aims to generate their products and services for people to come and receive them. Therefore, a person who receives the amenities that schools provide can be compared as students that come to get educational services from schools. Hence, the student is the main dimension of digital transformation in schools. When students come to receive educational services from schools, students will be able to gain knowledges and skills that are necessary to live in this digital world and to be ready for their future careers.

Digital transformation can be achieved by envisioning new ways of technology that can improve student's satisfactions by understanding their needs and provide educational services that meet their necessities. Digital technology can be used to understand the difference of each student and their specific needs by extending ways of communication and interaction such as using social media for rapid communication with their teachers when they need help.

Educational and instructional services in schools are various such as teaching, coaching, supervising, training and so on. Hence, schools can take advantages of technology to deliver interesting instructions to students by providing students with impressive learning experiences and various alternative resources to enhance ways of learning. Utilizing digital technology is not only for students' satisfaction of educational services from schools but also for students to have information communication and technological knowledges and necessary skills which can also be called "Digital Citizenship Characteristics". Therefore, schools need to

promote digital citizenship characteristics for students to live and prepare essential capabilities for their future careers.

2. People Dimension; People who are involved in educational organization are principals, teachers, instructors, technological coordinators and school staffs. They also are all involved with the transformation of organization. To transform people in the organization, this is related to professional development activities by providing sufficient technological knowledges and the necessary technological working skills.

Moreover, digital technology can be used to analyze teachers and staffs' capabilities and skills then provide suitable knowledges and promote necessary skills that are needed. Besides, digital technologies such as applications enable teachers to perform their work anytime, anywhere and on any devices. In addition, promoting teachers to take their personal devices to school and supporting teachers to use services that are available on the cloud and other mediums. These practices can help teachers and school staffs improve their instruction and work effectively.

3. Operational Process Dimension: In the education field, the operational process can be transformed by instigating technologies into working process structures. Changing structural offers an adequate basis for new operations. To transform the operational process that concerns variation in an organizational setup and digital activities within the organizational structure including knowledges, processes and skills. Starting with the identification and the contribution of internal process of what technology can improve in working performance and specify the relationship between new and the existing process.

4. Educational Organization Model Dimension: this dimension yields at transforming the entire educational organization model. An educational organization model represents the organizational characteristics of taking advantages in all the possibilities that digital technology can provide to restructure organization value creation. The feasible visions and strategies of integrated digital technology are needed to identify and lead to actual practices. Prevailing examples of processes and tools to enhance the role of technology in educational organization are: online learning, flip classroom, blend learning, learning analytics, attendance monitoring, digital assessment and so on. Moreover, it is also important to create digital organization culture and cultivate the positive attitude toward using digital technology for people who work in organizations.

Digital School

Digital school is a school that integrates digital technology in all areas of management including having digital technology and basic infrastructures are as follows (Kerr, Pane & Barney, 2004):

1. **Decent Technologies**: Allocating adequate technology infrastructures is the main dimension of success. It is important to provide hardware, software and blueprint of transformation process.

2. **Leadership and Management**: Not only feasible visions and effective management are needed to be specified but also potential leaders, teachers and staffs are crucial resources to take action in order to reach the goal of transforming an organization.

3. **Technological Infrastructures**: Providing sufficient technological infrastructures and technical supports.

4. **Training**: Advocating professional development regularly including technological knowledges and skills and also the integration of technology into curriculums, lesson plans and instructions.

5. **Accountability**; The school leader has strategies to encourage teachers and staffs to take actions and delegate responsibilities in utilizing technology into their work especially in teaching and learning which includes provoking the use of out of action and dormant technologies. Additionally, establishing rules, regulations and agreements of technology uses to guide teachers and staffs.

Research Methodologies

Sample

The participants were school principals and teachers who are in charge of transforming their organization in the primary private schools of Northeast Thailand. 123 private schools (Krejcie & Morgan, 1970) were selected using a Simple Random Sampling method. The sample schools provided two responders who are principals and experienced teachers.The respondents had a total of 246 (n=246).

Data collection

The 50 items of needs of school in information communication and technology management in private primary school transformation to digital school were presented in questionnaires. The questionnaires contained general questions about the respondents' background, actual school setting, instructions and activities in their schools toward digital transformation. Each questions of school transformation were divided to two answer sections.

The participants were asked to indicate their actual practice in the school and their expectations, on a 5-step Likert-scale, to what degree of their opinion with the statements. For the actual practice section, there are answer choices starting from “0" which is the equivalent to "I never do it” to “5 as "I usually do it” and for the expectation section, the answer choices starting from “0" as "I do not think it is important” to “5" as "I think it is very important”. The Data was collected from the Northeast of Thailand. The quantitative data were analyzed by using descriptive statistics including frequency, percentage, means and Standard Deviation (SD). The need was analyzed by using Modified Priority Needs Index ($PNI_{modified}$).

The Validation of the Research Instrument

The researcher created questionnaires to investigate actual school practices and expectation in schools’ management of information communication and technology by consulting with thesis advisors. Afterwards three experts in the educational technology and in educational administration fields scrutinized content validity, accurate structures and language use and then researcher computed the Index of Congruence (IOC) value of each items. Only the item that has an IOC value of more than 0.5 was selected. The questions were revised repeatedly and vilified by the experts and the thesis professors before handling.

Finding

Table 1 The analysis results of the actual practices and expectations for transformation into a digital school in student dimension

Student dimension	Principals (n=123)						Teachers (n=123)					
	Practice		Expectation		PNI modified	Rank	Practice		Expectation		PNI modified	Rank
	$\bar{x}$	SD	$\bar{x}$	SD			$\bar{x}$	SD	$\bar{x}$	SD		
1.1) Principal promotes digital citizenship characteristics on teachers and students.	3.94	0.86	4.54	0.63	0.13	7	3.97	0.94	4.57	0.69	0.13	3

Student dimension	Principals (n=123)						Teachers (n=123)					
	Practice		Expectation		PNI modified	Rank	Practice		Expectation		PNI odified	Rank
	$\bar{x}$	SD	$\bar{x}$	SD			$\bar{x}$	SD	$\bar{x}$	SD		
1.2) Teacher provides students digital citizenship knowledges.	3.88	0.85	4.54	0.64	0.14	6	4.01	0.83	4.55	0.67	0.11	6
1.3) Teacher uses technology to analyze, categorize and evaluate student.	3.84	0.89	4.58	0.61	0.16	4	3.99	0.79	4.62	0.58	0.13	4
1.4) Teacher uses technology to understand students' differentiations.	3.86	0.89	4.60	0.62	0.15	5	3.97	0.79	4.55	0.63	0.12	5
1.5) Teacher uses technology to increase student interaction individually.	3.65	0.95	4.47	0.77	0.18	3	3.64	0.92	4.44	0.78	0.17	2
1.6) Teacher uses technology to address student problem individuality.	3.48	1.08	4.40	0.74	0.20	1	3.58	0.94	4.34	0.84	0.17	2
1.7) Teacher uses technology to present information and learning resources for students to review the lessons.	3.57	1.08	4.48	0.73	0.19	2	3.45	0.95	4.33	0.93	0.19	1

Table 1 indicates that the needs of student dimension in principals aspect was that teacher uses technology to address students problem (PNI=0.20) secondly was the teacher uses of technology to present information and additional learning resources to review the lessons for students (PNI=0.19), and the third was the teacher uses of technology to increase the students interaction individually in the classroom (PNI=0.18). The top three priorities from principals' aspects corresponded to teachers' aspects but in a different order. In a teachers' aspect, it was agreed that teacher needs to use technology to present additional information and learning resources for students to review the lessons (PNI=0.19). Following with the need

that had the same value (PNI=0.17) which was the teacher uses of technology to address the student's problem individually and the teacher uses of technology to individually increase interaction with students. The third rank need, teachers agreed that principal promotes digital citizenship characteristics on his/her teachers and students and teacher uses technology to analyze, categorize and evaluate students.

Table 2 The analysis results of the actual practices and expectations for transformation into a digital school in people dimension

People dimension	Principals (n=123)						Teachers (n=123)					
	Practice		Expectation		PNI modified	Rank	Practice		Expectation		PNI modified	Rank
	$\bar{x}$	SD	$\bar{x}$	SD			$\bar{x}$	SD	$\bar{x}$	SD		
2.1) Teacher has sufficient technology knowledge to use in his/her instruction.	3.93	0.71	4.59	0.56	0.14	5	4.04	0.65	4.61	0.54	0.12	3
2.2) Teacher has sufficient technology skills to use in his/her instruction.	3.85	0.75	4.60	0.57	0.16	3	3.92	0.65	4.55	0.62	0.13	2
2.3) Teacher uses technology for update their information and knowledge.	3.76	0.94	4.58	0.61	0.17	2	4.03	0.87	4.58	0.64	0.12	4
2.4) Teacher uses technology to present information and manage the instruction.	3.97	0.72	4.58	0.60	0.12	6	4.17	0.75	4.56	0.65	0.08	7
2.5) Teacher brings personal devices to use for teaching in classroom.	3.89	0.86	4.53	0.78	0.12	6	4.11	0.83	4.62	0.66	0.11	5
2.6) Teacher uses technology to facilitate them to work at anywhere and anytime.	3.97	0.81	4.53	0.75	0.12	6	4.05	0.79	4.51	0.69	0.10	6

2.7) School administrator has technique to encourage teachers use technology in their classroom efficiently and effectively.	3.84	0.80	4.54	0.64	0.15	4	3.96	0.88	4.55	0.74	0.12	3
2.8) Teacher has opportunities to attend training to improve their technology knowledge, skills, professional development.	3.63	1.08	4.58	0.71	0.20	1	3.69	0.86	4.53	0.76	0.18	1

Table 2 shows the principals and teachers corresponded as the first priority and need in personal dimension that the teacher needs more opportunities to update their knowledge, skill and professional development in instructional technology by PNI=0.20 and 0.18 respectively. The second priority need, the principals agreed that teacher needs to use technology for update their information and knowledge by reaching information from credible sources on the internet such as, ThaiLIS (Thai Library Integrated System), ThaiOER/MOOCs and so on (PNI=0.17). Despite, teachers agreed that teacher needs to have technological skills (PNI=0.13). And the third priority need, principals agreed that teacher needs to have technological skills (PNI=0.16). However, the teachers agreed that teacher does not have sufficient technology knowledges to use in his/her instruction and the school administrator needs to have techniques to encourage teachers to use technology in their classroom efficiently and effectively (PNI=0.12).

Table 3 The analysis results of the actual practices and expectations for transformation into a digital school in operational process dimension

Process dimension	Principals (n=123)						Teachers (n=123)					
	Practice		Expectation		PNI modified	Rank	Practice		Expectation		PNI modified	Rank
	$\bar{x}$	SD	$\bar{x}$	SD			$\bar{x}$	SD	$\bar{x}$	SD		
3.1) Technology is used to manage document work.	4.07	0.94	4.65	0.57	0.12	9	3.99	1.01	4.55	0.74	0.12	7
3.2) Technology is used to manage registrations.	3.95	0.89	4.60	0.66	0.14	7	4.02	1.04	4.62	0.73	0.12	7
3.3) Technology is used to grade student's exam, analysis and store the test.	3.57	0.99	4.50	0.71	0.19	3	3.74	1.13	4.55	0.74	0.17	3
3.4) Technology is used to manage teaching and learning schedule.	3.79	0.95	4.58	0.67	0.16	5	3.85	1.13	4.56	0.75	0.15	4
3.5) Technology is used to manage personal tasks.	3.90	0.98	4.55	0.78	0.13	8	3.91	1.04	4.58	0.72	0.14	5
3.6) Technology is used to supply analyst and supply office in school.	3.75	0.98	4.56	0.73	0.17	4	3.74	1.08	4.54	0.82	0.17	3
3.7) Technology is used to manage building maintenance tasks.	3.49	1.12	4.37	0.85	0.19	3	3.53	1.50	4.43	0.93	0.19	2
3.8) Teacher creates digital teaching materials or invents digital products.	3.41	1.09	4.37	0.80	0.21	2	3.53	1.05	4.42	0.86	0.19	2
3.9) The school has rules and regulations regarding the use of technology in schools.	3.77	0.88	4.47	0.74	0.15	6	3.72	1.08	4.45	0.89	0.15	4

3.10) Teacher uses technology to publicize the school's news to personnel in a timely manner	3.93	0.81	4.62	0.62	0.14	7	4.02	0.90	4.46	0.73	0.09	9
3.11) Teacher uses online learning tools to work between teachers and teachers.	3.67	0.99	4.46	0.73	0.17	4	3.91	0.86	4.42	0.85	0.11	8
3.12) The school allocates experts to take responsibility and solve technology problems.	3.60	0.96	4.50	0.78	0.19	3	3.91	1.00	4.54	0.74	0.13	6
3.13) Teacher takes advantage of open source resources online.	3.19	1.08	4.37	0.80	0.26	1	3.32	1.01	4.26	0.99	0.20	1

Table 3 presents the needs for information communication and technological management in schools in work process dimension. The priorities need of both administrators and teachers had a consistent opinion that teacher use open source resources online with the main necessary requirements of PNI = 0.26 and PNI = 20 respectively. In addition, the second rank need was the opinions of the administrators and teachers were also consistent in which teacher has to create works related to digital technology or develop innovation. The requirement of the need were (PNI = 0.21) and (PNI=0.19) respectively. Additionally, teachers also stated it is important to use technology to manage building maintenance tasks (PNI= 0.19). And the needs for the third source in the administrators' opinions were that technology needs to be used to grade student's exam, analysis and store the test, technology needs to be used to manage building maintenance tasks and the school needs to allocate experts to take responsibility and solve technology problems (PNI=0.19). From the teachers' opinions for the third rank need, agreed that technology is needed in examining the tests, analyze and store the exam which has a value of (PNI = 0.17) and also stated that the additional opinions on technology is needed to use to supply analyst and supply office in school which had the same as of the third rank requirement.

Table 4 The analysis results of the actual practices and expectations for transformation into a digital school in educational organization model dimension

Educational model dimension	Principals (n=123)						Teachers (n=123)					
	Practice		Expectation		PNI modified	Rank	Practice		Expectation		PNI modified	Rank
	$\bar{x}$	SD	$\bar{x}$	SD			$\bar{x}$	SD	$\bar{x}$	SD		
4.1) Teacher uses e-learning from educational organization that provides online for searching information and review students' learning.	3.54	1.02	4.46	0.78	0.20	2	3.64	0.97	4.44	0.81	0.17	2
4.2) Teacher brings distance learning via satellite with other educational institutions to use in their instruction.	3.32	1.03	4.30	0.83	0.22	1	3.31	0.99	4.29	0.97	0.21	1
4.3) Teacher uses technology to help interact with parents.	3.93	0.86	4.59	0.66	0.14	3	3.88	0.92	4.45	0.81	0.12	5
4.4) School uses technology to make transactions between parents and school.	3.49	1.07	4.41	0.80	0.20	1	3.64	1.21	4.38	0.89	0.16	3
4.5) The school uses technology in publication to providing information to parents.	3.96	0.83	4.59	0.63	0.13	4	3.92	0.96	4.53	0.67	0.13	4
4.6) School creates positive attitude about using digital technology.	3.75	0.95	4.52	0.74	0.16	2	3.67	0.90	4.50	0.73	0.17	2

Table 4 displays the needs in educational organization model dimension for transformation. First, the administrators' and teachers' opinions were consistent by seeing that teacher brings distance learning via satellite together with other organizations or institutions to use in teaching and learning were crucial with PNI = 0.22 and PNI = 0.21 respectively. Following with, the need of teacher uses of e-learning from educational organization that provides searching for online information and review the students' learning were placed in at second with values of (PNI = 0.20) from administers' opinions and values (PNI=0.17) from teachers' opinions. In addition, the school administrators also commented that school should use technology in transactions between parents and schools to be ranked on second as well with (PNI = 0.20). On the other hand, teachers agreed that the second need also stated that the school creates positive attitude about using digital technology with values of (PNI = 0.17). For the third necessary requirement, the administrators commented that school should have a culture in the organization that has positive attitudes about the use of digital technology with (PNI = 0.16). For teachers, there was an opinion that school should use digital technology to make transaction between parents and schools with (PNI = 0.16).

Discussion

From the study, it was found that the needs for transforming to digital schools comprised of 4 dimensions;

1) Student dimension; due to student having different learning styles (Rasheed & Wahid, 2019) so administers agreed that the technology can be used to help identify and solve students individual problems. Moreover, teachers agreed that they need to use technology to present more information to students in various platforms as learning materials such as Video Clips, Educational Application, Augmentation Realities (AR) and so on. Teachers can allocate educational resources online for students to review on top of the knowledge that was gained from the classroom. This will be beneficial for students because most of the knowledge learned in the class comes from textbooks and some content may not be up to date with the current situation.

2) Peoples Dimension; both administrators and teachers have agreed that there is still a deficiency of training and teacher development in the knowledge and the use of technology. We need to consider this aspect due to at present time there are many organizations attempted to create learning resources and educational materials through

technological devices and various technological media. However, many teachers still do not have the knowledge and skills in choosing and applying technology in their work sufficiency. Therefore, it is suggested that organizations that create technology in education should thoroughly have public relations and bountifully provide for all school areas throughout the country.

3.) In work process, there is a consensus in both executives and teachers that there is a need to use benefits from open source resources for the benefit of teaching and learning. Due to inadequacy of technological knowledges and skills of teachers that were stated above, consequently, they were unable to choose and use the existing open source data to benefit for their instruction effectively. It is important for school leaders to encourage their teachers to be self-learners and to keep updating their knowledge and skills. Moreover, school leader need to be a facilitators of teacher's improvement.

4.) For educational organization model, to attribute digital school characteristics, administrators and teachers agreed that instructors should bring distance learning via satellite with other educational organizations or educational institutions and be provided to use in teaching and learning. In the consideration of educational organization or institutions that are reliable which normally have educators and researchers with the potentials to create these educational resources and materials for teaching and learning. Especially, in private schools context, there is a teacher that often shifts regularly. Distance learning is considered to be useful to address this problem of insufficient of teachers and also can be used to guide teachers that had just graduated or inexperienced teachers including teachers who want to improve their instructions.

Suggestion

The results of the study can be used for educational leaders or school leaders to create school' visions and can be used as a guide for a school's management blueprint. To extend the knowledge from this study, future search should be investigated in different school areas such as in a public schools context, occupational schools context and so on. Besides, the dimension of a school's transformation in this study still needs to be kept updated with new theories and practices due to the ever changing consistency of technology.

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