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Approaches for Teacher Development of Siriwitthaya Private School Based on the Concept of Digital Citizenship

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Abstract

The purposes of this research were 1) to study the current state and the desirable state of teacher development at Siriwitthaya Private school and 2) to present the approaches for teacher development based on the concept of digital citizenship. The population was Siriwitthaya Private School, Phrapradeang district, Samutprakarn Province. There were 130 informants in this research, including one Director of School and 129 teachers. The research instrument used in this study was 5 rating scaled questionnaire. The data were analyzed by frequency distribution, percentage, mean, standard deviation, and Modified Priority Needs Index ($PNI_{modified}$).

The research results appeared as follows. The current state of teacher development of Siriwitthaya Private school based on the concept of digital citizenship was at the medium level ($\overline{X}$ = 3.05). On the other hand, the desirable state of teacher development of Siriwitthaya Private school based on the concept of digital citizenship

was at the highest level ($\overline{X}$ = 4.55). In addition, the method of teacher development at Siriwitthaya Private School based on the concept of digital citizen. In general, blended learning development method had the highest frequency in all aspects. Hence, it led to the way to develop the teachers of Siriwitthaya Private School according to the concept of digital citizen, there are 6 approaches in order of priority needs as follows, (1) Develop teachers to have knowledge about digital threats in parts that were personal threats and in parts concerning security violations of electronic devices and computers whereby teacher successfully detect, prevent, avoid and properly manage said threats. (2) Develop teachers to have understanding about every person's equal digital, electronic devices and computer access rights and opportunities. (3) Develop teachers to have knowledge on the appropriate digital, electric equipment and computer use in order to prevent detrimental impacts to physical health and interactions with society and surrounding people. (4) Develop teachers to have honesty and ethics in conducting any and all types of digital transactions in the online world and to have knowledge and prevention skills against threats in purchases and sales of products and services in the online world. (5) Develop teachers with the ability to receive and send digital and electronic devices information in a positive way in the online world with appropriate digital and communications channels. (6) Develop teachers to have digital, electronic device and computer knowledge and knowledge on how to use searches in evaluating, making use of, sharing and creating contents that are beneficial to society.

Keywords: Teacher Development, Digital Citizenship

Introduction

Current educational management in the Thailand 4.0 era involves instruction with emphasis on enabling students to apply existing knowledge everywhere with integration yielding innovative development to meet the needs of society. The main factors making up the driving force behind education are media and technology, creative thinking and social interactions. Technology is an instrument that promotes education potential in the digital age, so importance should be given to digital citizenship alongside the provision of education aimed at raising basic awareness about safety and privacy to prevent violations and cybercrimes among youths (McKay, 2016). Moreover, the government should promote digital citizenship to strengthen the foundation for the Thai economy and enhance the country's competitive capabilities on the world stage by relying on digital technology as the driving force. In doing so, the government has invested in a civil state network accessible by 25,000 of 75,000 villages in total. UNESCO has added ICT competency as another expectation for educators. This includes digital knowledge, which forms the foundation for functioning as professional educators. Digital knowledge and skills are important and essential to education and living, and families and educators are people who are closest to youths and, therefore, should be able to monitor, guide and advise youths about how to safely and consciously exist in the digital world, so society achieves balance in this age of rapid globalization (UNESCO, 2011). In addition, students should be taught about digital citizenship in order to life happily in online societies, and, because the world is fast transforming, teachers should be developed with digital citizenship skills in order to possess teaching skills and serve as good role models in regards to digital citizenship (Common Sense Education, 2019).

In the context of the teachers at Siriwitthaya Private School, due to the fact that Siriwitthaya's teachers lack of digital citizenship skills so that little information

technology is applied in education and school activities, which is inconsistent with government education policies and changes taking place in modern society. Consequently, students at school neither learn nor develop the essential skills for living in the 21st century to their full potential. Therefore, it is highly necessary for the teachers of Siriwitthaya Private School to improve their digital citizenship skills, and many different formats and methods can be applied in teacher development such as training, seminars, online lectures, learning from assigned activities, learning through nannies and coaches, etc. However, just one of these approaches or formats alone cannot achieve effective development in line with objectives, and learners or the people who participate in development are developed only to a limited extent and only develop performance in the areas in which they receive development. Therefore, an effective and efficient development model has been proposed to meet desired organization objectives and facilitate behavioral changes in trainees and the activities of themselves, their work teams and people around them. This development model is blended-learning development. It develops personnel by using a wide range of methods to meet development and performance objectives. Largely, it integrates on-the-job development, which consists of personnel development implemented as part of work assignments which include utilization of knowledge, skills, performance, techniques and tools in various forms to achieve work success. It includes giving development recipients perspectives on actual work conditions and problems. Furthermore, the model consists of job instruction training, project assignments, job rotation, apprenticeships and work shadowing, coaching, mentoring and others. The model also implements off-the-job development to develop personnel using methods not part of ongoing work activities or which could not be implemented for development while work is being performed. The development might not take place in the workplace, and might require most or all available time to be devoted to

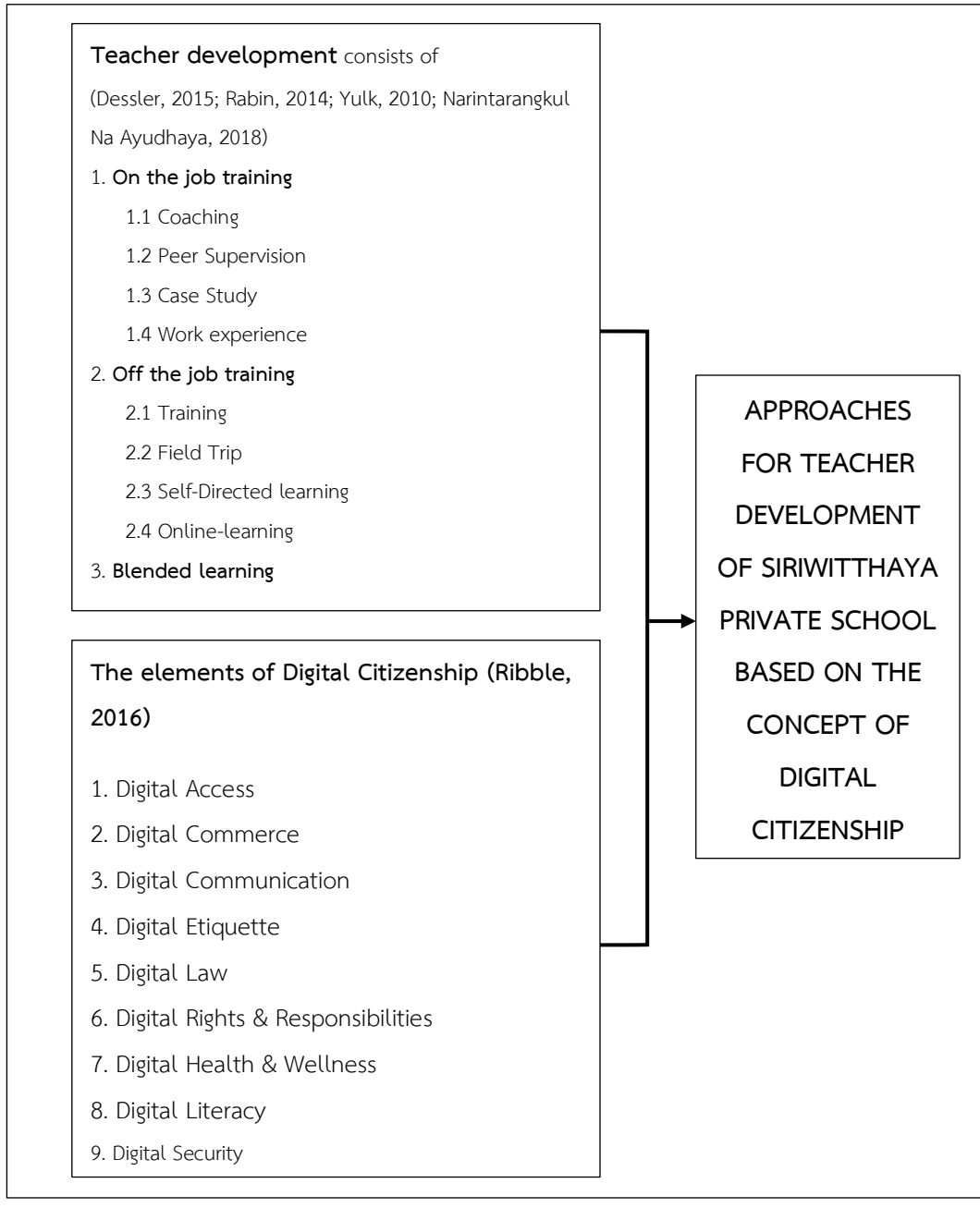
development. This type of development includes trainings/seminars, workshops, online development or online/e-learning, simulations, virtual classrooms, self-study, case studies and written exams, among others. Thus, the model integrates many development formats together to consistently met development requirements in learners. This model is currently the most utilized development model at the present (Kajewski & Madson, 2014, as cited in Narintharangkoon Na Ayutthaya, 2018; Rabin, 2014).

The above background and significance of digital citizenship sparked the researcher's interest in studying current state and the desirable state of teacher development of Siriwitthaya Private school as well as priority needs for teachers in line with the digital citizenship concept in teachers of Siriwitthaya Private School in order to develop the approaches of teacher development of Siriwitthaya Private School based on the concept of digital citizenship for benefiting teacher and educational personnel development in the future.

Research Objectives

1. To study the current state and the desirable state of teacher development of Siriwitthaya Private school.

2. To present the approaches of teacher development of Siriwitthaya Private School based on the concept of digital citizenship.



Conceptual Framework

Methodology

This research was a descriptive research composed of the two following phases:

Phase 1 – Study the current state and the desirable state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship. The informants consisted of 130 school directors and teachers. Questionnaires were used to collect data on the current state and desired state of teacher development at Siriwitthaya Private School based on the concept of digital citizenship. Data analysis was conducted by using frequencies, percentages, arithmetic means, standard deviations and content analysis.

Phase 2 – Present the approaches for teacher development for Siriwitthaya Private School based on the concept of digital citizenship composed of the following three sub-phases:

Phase 2.1 – Analysis of priority needs of teacher development of Siriwitthaya Private School based on the concept of digital citizenship based on data on current state and desired state in Phrase 1 collected from questions analyzed for arithmetic means, standard deviations and index values on priority needs.

Phase 2.2 – The researcher's drafting of teacher development approaches for Siriwitthaya Private School based on the concept of digital citizenship by selecting the digital citizenship aspects in which their PNI are higher than the average PNI. Then, the advisor evaluated the draft of approaches for appropriateness and feasibility by using evaluation forms and three qualified experts, namely, two professors/academics in education management and one private school director. Then the researcher applied the recommendations of the qualified experts to modify and revise the draft of the approaches and used the appropriateness and feasibility evaluation forms based on

the concept of digital citizenship in data analysis involving frequency and mode distribution.

Phase 2.3 – Present the teacher development approaches of Siriwitthaya Private School based on the concept of digital citizenship.

Findings

1. Analysis of the current state and desired state and priority needs of teacher development at Siriwitthaya Private School based on the concept of digital citizenship – The researcher collected data by using 130 questionnaires to the teachers and school principal. The questions covered current state, desired state of teacher development at Siriwitthaya Private School based on the concept of digital citizenship and priority needs categorized based on nine digital citizenship aspects composed of 1) digital access; 2) digital commerce; 3) digital communication; 4) digital etiquette; 5) digital law; 6) digital rights and responsibilities; 7) digital health and wellness; 8) digital literacy and 9) digital security. The mean values were analyzed for priority needs indices and prioritization of needs based on the current state and desired state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship using the Modified Priority Needs Index ($PNI_{modified}$)

The overall current state, desired state and priority needs of teacher development at Siriwitthaya Private School based on the concept of digital citizenship was found that the overall current state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship was moderate ($\bar{X}$ = 3.05). As for the individual aspects of the teacher development at Siriwitthaya Private School based on the concept of digital citizenship, the maximum and minimum mean values were Aspect 6, or digital rights and responsibilities, ($\bar{X}$ = 3.55) and Aspect 1 or digital access

($\bar{X}$ = 2.90), respectively. Additionally, there were 6 digital citizenship aspects that their priority need index was above the average of 0.489 as can be seen in the table 1.

Table 1 An overall of the current state and desired state and priority needs of teacher development at Siriwitthaya Private School based on the concept of digital citizenship

No.	Digital Citizenship aspects	Current state			Desired state			$PNI_{modified}$	Ranking
		$\bar{X}$	SD	level	$\bar{X}$	SD	level		
1.	Digital Access	2.90	0.98	moderate	4.46	0.75	high	0.538	2
2.	Digital Commerce	3.02	1.13	high	4.52	0.76	highest	0.497	4
3.	Digital Communication	3.05	1.02	high	4.54	0.76	highest	0.489	5
4.	Digital Etiquette	3.08	1.10	high	4.54	0.81	highest	0.474	7
5.	Digital Law	3.12	1.13	high	4.53	0.79	highest	0.452	8
6.	Digital Rights & Responsibilities	3.28	1.11	high	4.60	0.77	highest	0.402	9
7.	Digital Health & Wellness	3.04	1.10	high	4.65	1.32	highest	0.530	3
8.	Digital Literacy	3.07	1.16	high	4.57	0.72	highest	0.489	5
9.	Digital Security	2.95	0.96	moderate	4.54	0.75	highest	0.539	1
	Average	**3.05**	**1.07**	**moderate**	**4.55**	**0.82**	**highest**	**0.489**	

Table 2 Summary of Overall Priority Needs for Teacher Development Approaches of Siriwitthaya Private School Based on the Concept of Digital Citizenship

Digital Citizenship Aspect		On the job training								Off the job training								Blended learning	
		1. Coaching		2. Peer Supervision		3. Case Study		4. Work experience		1. Training		2. Field Trip		3. Self-Directed learning		4. Online-learning		1. Blended learning	
		F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
1. Digital Access **$PNI_{modified}$ (0.538) (2)**	1. Understanding of rights to digital and electronic devices access (0.492) (2)	52 (3)	44.83	17 (8)	14.66	9 (9)	7.76	23 (6)	19.83	63 (2)	54.31	40 (4)	34.48	19 (7)	16.38	38 (5)	32.76	72 (1)	62.07
	2. Equal opportunities for digital and electronic devices access (0.578) (1)	42 (3)	36.21	14 (8)	12.07	10 (9)	8.62	38 (5)	32.76	60 (2)	51.72	31 (6)	26.72	16 (7)	13.79	40 (4)	34.48	74 (1)	63.79
2. Digital Commerce **$PNI_{modified}$ (0.539) (4)**	1. Honesty and ethics in conducting any type of digital transactions in the online world (0.391) (3)	39 (3)	33.62	17 (8)	14.66	11 (9)	9.48	35 (5)	30.17	47 (2)	40.52	22 (7)	18.97	29 (6)	25.00	37 (4)	31.90	79 (1)	68.10
	2. Effective prevention of threats from online commerce (0.609) (1)	41 (3)	35.34	18 (9)	15.52	23 (7)	19.83	32 (5)	27.59	37 (4)	31.90	23 (7)	19.83	27 (6)	23.28	45 (2)	38.79	75 (1)	64.66
	3. Effective ability in purchasing and selling products and services online (0.500) (2)	48 (2)	41.38	18 (7)	15.52	10 (9)	8.62	26 (6)	22.41	39 (4)	33.62	16 (8)	13.79	31 (5)	26.72	40 (3)	34.48	85 (1)	73.28
3. Digital Communication **$PNI_{modified}$ (0.497) (5)**	1. Use of electronic devices in exchanging digital information (0.500) (1)	51 (3)	43.97	18 (8)	15.52	15 (9)	12.93	36 (5)	31.03	50 (4)	43.10	25 (7)	21.55	28 (6)	24.14	53 (2)	45.69	77 (1)	66.38
	2. Appropriate use of digital communications channels (0.482) (2)	43 (4)	37.07	19 (8)	16.38	11 (9)	9.48	41 (5)	35.34	44 (3)	37.93	23 (7)	19.83	36 (6)	31.03	50 (2)	43.10	73 (1)	62.93
4. Digital Etiquette **$PNI_{modified}$ (0.474) (7)**	1. Understanding of digital, electronic devices and computer laws (0.505) (1)	51 (3)	43.97	17 (9)	14.66	19 (8)	16.38	35 (5)	30.17	56 (2)	48.28	21 (7)	18.10	34 (6)	29.31	40 (4)	34.48	78 (1)	67.24
	2. Behaviors in the digital world that do not negatively impact others (0.441) (2)	39 (3)	33.62	11 (9)	9.48	18 (8)	15.52	29 (6)	25.00	43 (2)	37.07	26 (7)	22.41	35 (5)	30.17	38 (4)	32.76	86 (1)	74.14
5. Digital Law **$PNI_{modified}$ (0.452) (8)**	1. Understanding about individual and legal rights, intellectual property, and freedom of expression in the digital world. (0.512) (1)	40 (3)	34.48	11 (9)	9.48	19 (8)	16.38	33 (6)	28.45	50 (2)	43.10	25 (7)	21.55	38 (4)	32.76	37 (5)	31.90	88 (1)	75.86
	2. Behaviors that comply with the law and that do not violate the intellectual property rights of others (0.396) (2)	38 (4)	32.76	17 (9)	14.66	24 (7)	20.69	26 (6)	22.41	46 (2)	39.66	24 (7)	20.69	31 (5)	26.72	45 (3)	38.79	81 (1)	69.83
6. Digital Rights & Responsibilities **$PNI_{modified}$ (0.402) (9)**	1. Understanding about digital usage rights in protecting personal interests (0.452) (1)	31 (6)	26.72	19 (8)	16.38	17 (9)	14.66	33 (5)	28.45	48 (2)	41.38	20 (7)	17.24	34 (4)	29.31	46 (3)	39.66	78 (1)	67.24
	2. Responsibility about posts in the online world (0.393) (2)	36 (4)	31.03	15 (9)	12.93	23 (7)	19.83	33 (6)	28.45	36 (4)	31.03	20 (8)	17.24	40 (3)	34.48	49 (2)	42.24	77 (1)	66.38
	3. Non-violation of other people's rights in the online world (0.374) (3)	30 (6)	25.86	15 (9)	12.93	21 (8)	18.10	38 (3)	32.76	37 (5)	31.90	22 (7)	18.97	38 (3)	32.76	49 (2)	42.24	82 (1)	70.69
7. Digital Health & Wellness **$PNI_{modified}$ (0.530) (3)**	1. Learning on the appropriate digital, electronic devices and computer use (0.590) (1)	48 (3)	41.38	14 (8)	12.07	11 (9)	9.48	32 (6)	27.59	56 (2)	48.28	16 (7)	13.79	40 (5)	34.48	45 (4)	38.79	76 (1)	65.52
	2. Awareness about health risks from digital use (0.490) (3)	34 (4)	29.31	13 (9)	11.21	21 (7)	18.10	29 (6)	25.00	43 (3)	37.07	19 (8)	16.38	34 (4)	29.31	51 (2)	43.97	77 (1)	66.38
	3. Prevention of negative impacts from digital use on physical and psychological health and interactions with society and surrounding people (0.508) (2)	40 (3)	34.48	23 (7)	19.83	14 (9)	12.07	32 (6)	27.59	42 (2)	36.21	23 (7)	19.83	33 (5)	28.45	34 (4)	29.31	82 (1)	70.69
8. Digital Literacy **$PNI_{modified}$ (0.489) (5)**	1. Effective ability in using digital technology to search for educational information and sharing information (0.517) (1)	37 (5)	31.90	13 (9)	11.21	17 (8)	14.66	36 (6)	31.03	40 (3)	34.48	19 (7)	16.38	43 (2)	37.07	39 (4)	33.62	86 (1)	74.14
	2. Effective ability in digital technology work to create beneficial contents for teachers, students and Siriwitthaya Private School (0.462) (2)	40 (4)	34.48	18 (8)	15.52	16 (9)	13.79	39 (5)	33.62	55 (2)	47.41	33 (6)	28.45	33 (6)	28.45	45 (3)	38.79	81 (1)	69.83
9. Digital Security **$PNI_{modified}$ (0.539) (1)**	1. Knowledge about digital threats, including threats to personal information, electronic devices and computers (0.547) (1)	48 (3)	41.38	20 (7)	17.24	14 (9)	12.07	18 (8)	15.52	58 (2)	50.00	36 (4)	31.03	35 (5)	30.17	25 (6)	21.55	64 (1)	55.17
	2. Detection, prevention, avoidance and management of digital threats (0.531) (2)	44 (4)	37.93	13 (9)	11.21	25 (7)	21.55	39 (6)	33.62	46 (2)	39.66	20 (8)	17.24	40 (5)	34.48	46 (2)	39.66	90 (1)	77.59

Remarks: F: Frequency Value; P: Percentage

As shown in Table 1 and 2, the overall summary of the appropriate and feasible priority needs of the teacher development approaches of Siriwitthaya Private School based on the concept of digital citizenship as ordered by priority levels in which above the average PNI of 0.489 along with the suggestions from the three experts are summarized in 6 approaches as follows:

1. Develop teachers to have knowledge about digital threats in parts that were personal threats and in parts concerning security violations of electronic devices and computers whereby teacher successfully detect, prevent, avoid and properly manage said threats.

1.1 Prioritize developing teachers with knowledge about digital threats in parts concerning personal information and security of electronic devices and computers by utilizing blended learning, training and coaching.

1.2 Prioritize developing teachers with the ability to detect, prevent, avoid and appropriately manage digital threats using blended learning, training and e-learning.

2. Develop teachers to have understanding about every person's equal digital, electronic devices and computer access rights and opportunities.

2.1 Prioritize developing teachers with understanding about their digital and electronic devices access rights by utilizing blended learning, training and coaching.

2.2 Prioritize developing teachers with equal digital and electronic devices access opportunities by utilizing blended learning, training and coaching.

3. Develop teachers to have knowledge on the appropriate digital, electric equipment and computer use in order to prevent detrimental impacts to physical health and interactions with society and surrounding people.

3.1 Prioritize developing teachers with digital, electronic devices and computer usage abilities by utilizing blended learning, training and coaching.

3.2 Prioritize developing teachers with understanding and awareness about health risks from digital use by utilizing blended learning, e-learning and training.

3.3 Prioritize developing teachers to have the ability to protect themselves from the detrimental impacts of digital use on physical and psychological health and interactions with society and surrounding people by utilizing blended learning, training and coaching.

4. Develop teachers to have honesty and ethics in conducting any and all types of digital transactions in the online world and to have knowledge and prevention skills against threats in purchases and sales of products and services in the online world.

4.1 Prioritize developing teachers with honesty and ethics in conducting any and all types of digital transactions in the online world by utilizing blended learning, training and coaching.

4.2 Prioritize the development of teachers to have the ability to prevent threats from online purchases and sales by utilizing blended learning, e-learning and training.

4.3 Prioritize developing teachers with the ability to purchase and sell products and services online by utilizing blended learning, coaching and e-learning.

5. Develop teachers with the ability to receive and send digital and electronic devices information in a positive way in the online world with appropriate digital and communications channels.

5.1 Support and develop teachers to have the ability to use electronic devices in receiving and sending digital information by utilizing blended learning, coaching and e-learning.

5.2 Support and develop teachers to have the ability to choose digital communication channels by utilizing blended learning, e-learning and training.

6. Develop teachers to have digital, electronic device and computer knowledge and knowledge on how to use searches in evaluating, making use of, sharing and creating contents that are beneficial to society.

6.1 Support and develop teachers to have the ability to use digital technology in searching for information for learning and sharing by utilizing blended learning, self-directed learning and training.

6.2 Support and develop teachers to have the ability to use digital technology to create beneficial contents for teachers, students and Siriwitthaya Private School by utilizing blended learning, training and e-learning.

Discussion of the Findings

This study found interesting components relating to the teacher development of Siriwitthaya Private School based on the concept of digital citizenship. Thus, the key issues were presented for discussion as follows:

1. Concerning the current state and desired state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship, the research findings were as follows:

The overall current state of teacher development at Siriwitthaya Private School based on the concept of digital citizenship was moderate. For individual aspects, it was found that Aspect 6 or digital rights and responsibilities ($\overline{X}$ = 3.55) had the highest mean value. The finding concurs with the concept by Chaemchoi (2018) that digital natives would be familiar with computers, smart phones and access to information on the internet for learning and recreation. Thus, the roles and skills of teachers required adjustments to keep up with learners by becoming teachers in the digital age such that learners met objectives to the fullest extent of their capabilities and by acting as

good role models for teachers in being active learners who possess manners, ethics and morals in the digital world.

Furthermore, the overall desired state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship was the highest. Upon considering individual aspects, it was found that aspect 7 or digital health and wellness ($\bar{X} = 4.65$) had the greatest mean score. This finding resulted from the fact that the teachers at Siriwitthaya Private School wanted learning on appropriate digital, electronic device and computer use with understanding about health risks from digital use to prevent detrimental impacts to their own physical health and social interactions with surrounding people. The finding concurs with the concept of Sudpakdee (2014) that effective digital use should consist of skills in making use of a wide range of technologies such as skills on the function of technologies requiring effective digital technology skills, analytical thinking skills, skills in evaluating digital information, online collaboration skills, and skills on raising awareness about the use of technologies and learning needs in digital use consistent with the concept by the National Science and Technology Development Agency (2016). This included digital knowledge and skill in searching, evaluating, sharing and creating content by using information technology and the internet (Cornel Information Technologies, n.d.)

2. On the priority needs of teacher development of Siriwitthaya Private School based on the concept of digital citizenship, interesting discoveries were found on the priority needs index ($PNI_{modified}$) of teacher development of Siriwitthaya Private School based on the concept of digital citizenship. Thus, the researcher would like to present a discussion on the key findings for the first, second and third highest priorities. The first priority consisted of Aspect 9 or digital security ($PNI_{modified} = 0.539$), whereby the teacher development methods ordered by frequency consisted of blended learning, training, coaching and e-learning.

Accordingly, teacher development approaches existed to provide knowledge about digital threats in parts concerning personal threats and security breaches in electronic devices and computers such that teachers could detect, prevent, avoid and appropriately manage said threats. Priority was placed on developing teachers with knowledge about digital threats in parts concerning personal information and security of electronic devices and computers by utilizing blended learning, training and coaching, and priority was placed on developing teachers with the ability to detect, prevent, avoid and appropriately manage digital threats using blended learning, training and e-learning. Apparently, teachers had to develop themselves and build knowledge about digital threats in parts concerning personal information threats and electronic device and computer security. This was consistent with the concept of Chitsaeng (2014), which provided approaches for promoting digital citizenship state, stating that schools should create areas for creatively and safely use media on the internet (white internet area) by filtering appropriate websites for youths to promote creative internet media utilization and by creating a list of websites for using various services on the internet to expand the level and scope of internet use in youths all the while regulating internet usage behaviors in youths to remain within appropriate levels. In addition, schools should function as a medium in building cooperation between Khon Kaen ICT Skill Development and Learning Center, under the supervision of Khon Kaen Municipality, and parents and guardians in order to build a safe and creative internet learning society (white internet area) outside of the school environment in order to promote effective learning involving internet media in youths and to expand the level and scope of internet media use to facilitate learning in various places at school and at home. In addition, government service units and schools should build internet learning networks based on the concept of “friends teaching friends” in order to promote a society of learning among peer groups at

school and between schools alongside classroom teaching. In doing so, teachers and educators might select students who are interested or possess skills in the use of internet media to train and develop skills on how to search and evaluate the value and reliability of internet information sources such that genuine and thorough understanding is achieved before having the students share their lessons with their peers who would be gathered together in internet learning networks. These approaches would promote the role of peer groups in passing on skills in using new communication technologies alongside analytical learning about media in order to promote students to be aware learners and media users. This is because research findings indicated that peers play important roles in spreading new communications technologies through internet media than educators. Importantly, internet media usage skills, interest and greater age proximity among peer groups would promote more effective lesson exchanges.

The second priority level consisted of the first aspect or digital access ($PNI_{modified}$ = 0.538). The teacher development methods as ordered by frequency consisted of blended learning, training, and coaching. Approaches exist for developing teachers to have understanding about every person's equal digital, electronic devices and computer access rights and opportunities. Priority was placed on developing teachers with understanding about their digital and electronic devices access rights by utilizing blended learning, training and coaching, and priority was placed on developing teachers with equal digital and electronic devices access opportunities by utilizing blended learning, training and coaching. This is consistent with the concept by Winn (2011), which stated that the duty of teachers in the digital age is to teach and guide learners on being digital citizens, teach learners about digital citizenship through creating online media at school and then having learners use them, as they provide

good opportunities for teachers to develop the digital citizen state of the teachers themselves and their students.

The third priority level consisted of aspect 7, or digital health and wellness ($PNI_{modified}$ = 0.530). The teacher development methods in order of frequency consisted of blended learning, training, coaching and e-learning. Approaches exist for developing teachers to gain knowledge on the appropriate digital, electric equipment and computer use in order to prevent detrimental impacts to physical health and interactions with society and surrounding people. Priority is placed on developing teachers with digital, electronic devices and computer usage abilities by utilizing blended learning, training and coaching; on developing teachers with understanding and awareness about health risks from digital use by utilizing blended learning, e-learning and training; and on developing teachers to have the ability to protect themselves from the detrimental impacts of digital use on physical and psychological health and interactions with society and surrounding people by utilizing blended learning, training and coaching. This is consistent with the concept of the Office of the Education Council (2012) in research titled "Development of Attributes for a New Generation of Learners to Support Reforms in the Second Decade by Integrating Information and Communication Technology in Learning Management through Projects", which stated that teachers play an important role in influencing learners and their ability to use technologies; learners' ability to choose and use technologies to find knowledge, communicate and create work digitally and convenient and appropriate presentation of work by relying on social communication technology, exchanging learning and knowledge ethically and morally with respect to rights; and learners' ability to express opinions to exchange learning with peers and ordinary people through online networks with polite language and realization about the importance of screening for reliable information and interacting with society and

surrounding people. Additionally, according to Ribble and Bailey (2007), students and parents should care for and pay attention to digital citizenship and use of technologies and responses to technologies to build a digital society to benefit users in education, employment, entertainment and social interactions with emphasis on the importance of digital citizenship and organization of vocational development activities to help students gather digital citizenship concepts in the classroom.

3. On the overall teacher development methods of Siriwitthaya Private School based on the concept of digital citizenship, blended learning had the highest frequency in every aspect. The teachers of Siriwitthaya Private School perceived the importance of self-improvement by relying on blended learning. This is because blended learning integrates many development methods such as off-the-job development composed of training, seminars, self-directed learning and work studies; and on-the-job development. Thus, the teachers at Siriwitthaya Private School conduct themselves as good citizens in the online social world and use online technologies creatively and responsibly as digital citizens. This is consistent with Narintharangkoon Na Ayutthaya (2018), who said that present-day personnel development models are geared toward training and development aimed at meeting organization objectives or to cause behavioral changes in trainees such that the work performances of themselves, their work teams and surrounding people are affected, and that blended learning is and effective development format, as it utilizes a variety of methods to develop personnel in order to meet the required development and performance objectives. Accordingly, this mostly consisted of combining on-the-job development and off-the-job development together to meet the development objectives of learners. The finding also concurs with Srirat (2017), which stated that growth conceptual development on embracing challenges included blended learning development and teaching or giving advice. In addition, the finding concurs with the

institute on developing education administrators under the Office of the Permanent Secretary of Education (2005), which stated that teacher development could enhance the performance of teachers in education management, facilitate professional advancement, and raise the standard of the teaching profession, and that teacher development should occur with consideration to effectiveness and requires a variety of development formats and continuity of development.

Recommendations

1. Recommendations on utilizing the research findings for a school administrator

1.1 Administrators should adopt the blended training for the teachers. The term blended training is referred to the combination training method between on the job training and off the job training. Therefore, teachers can possess the ability to prevent digital threats (digital security) and promote teachers to have awareness about digital threats concerning personal information and to have the ability to detect, prevent, avoid and appropriately manage threats.

1.2 Administrators of educational facilities should develop digital citizenship by utilizing blended learning by combining a variety of learning methods, with each method supporting others, in order to create effective learning processes that meet the desired digital citizenship performance requirements.

1.3 Administrators of educational facilities can use the findings on the desired state of teacher development of Siriwitthaya Private School based on the concept of digital citizenship as approaches for teacher development in educational facilities to promote digital citizenship.

2. Recommendations for Future Research

2.1 Studies should be conducted on the priority needs of teacher development based on the concept of digital threat prevention, since this topic has the greatest

priority need, in order to develop teachers with desirable characteristics in line with current social demands.

2.2 Studies should be conducted on the priority needs of teacher development on digital access, since the topic has the greatest priority need, in order to promote understanding about equal digital, electronic device and computer access in every person.

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