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Research Article

A MODEL FOR DEVELOPING LEARNING SKILLS IN THE NEW NORMAL ERA TO ENHANCE DIGITAL CITIZENSHIP IN SMALL SCHOOLS UNDER THE OFFICE OF PHAYAO PRIMARY EDUCATION SERVICE AREA

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Abstract

This research aimed to study learning skills in the new normal era of students in small schools, examine the enhancement of digital citizenship among students in small schools, and develop a model for improving learning skills in the new normal era to promote digital citizenship in small schools under the Office of Phayao Primary Education Service Area. The sample consisted of 234 teachers from small schools. The research instruments were questionnaires and a model evaluation form. Quantitative data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. Qualitative data were analyzed through content analysis and data classification. The research findings were as follows: 1) Learning skills in the new normal era for small schools under the Office of Phayao Primary Education Service Area comprised five skills: critical thinking, communication, collaboration, creative thinking and innovation, and information technology skills. Overall, these skills were rated at a high level. 2) Digital citizenship of students in small schools consisted of three aspects: respect for yourself and others, educate yourself and others, and protect yourself and others. Overall, these aspects were rated at a high level. 3) The model for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Service Area was named "5 Skills, 3 Characteristics of Digital Citizenship in the New Normal Era (S5 REP)". It consisted of three operational components: 1) development of four learning skills, 2) five learning skills of students in the new normal era, and 3) three aspects of students' digital citizenship.

Keywords: Skill Development, Learning Skills in the New Normal Era, Digital Citizenship

Introduction

In the current era, rapid changes are occurring in many areas, including technology, politics, economics, and socio-cultural aspects. Education today must adapt to survive and accommodate these changes, both in terms of teaching and learning methods, learning activity formats, and creating environments conducive to learning. This is to foster new skills in an era referred to by various concepts such as the 21st century, the 4.0 era, the digital age, or the innovation era. Generally, the skills of this new era comprise learning and innovation skills, including creativity, problem-solving, innovative thinking, communication, critical thinking, and teamwork; information, media, and technology skills, including information literacy, information technology literacy, media literacy, and communication savvy; and life and career skills, including flexibility, adaptability, initiative, social skills, cultural awareness, leadership, responsibility, and lifelong learning, among others (Office of Knowledge Management and Development, 2021).

Organizing learning for students born in the digital age, by teachers and school administrators who were born before the widespread use of digital technology, poses a significant challenge in educational management in the digital era. School administrators must understand how learners in this era learn and how to enable teachers to organize learning through innovations or new approaches that connect ideas and knowledge using technology as a medium to reach digital-age learners (Chaemchoy, 2018).

The New Normal era has been defined in the Royal Institute Dictionary after the virus outbreak as a new way of life that differs from the past due to some impactful event. It changes familiar patterns and practices that people in society were accustomed to and could anticipate, leading to a new way of life under unfamiliar new standards. This requires humans to adapt to deal with the current situation rather than maintain traditional ways or long for the past, by fostering and adjusting to new ways of living to stay safe from infection while striving to maintain and restore economic and business potential. This leads to the creation of new inventions, new technologies, adjustments in concepts, visions, management methods, as well as behaviors that were once routine (Thai PBS News, 2020).

Digital citizenship is crucial for school personnel, both teachers and administrators, in recognizing and being aware of the use of digital technology. This is to apply various information media in the teaching and learning process and to convey methods of this awareness to students. This enables administrators, teachers, and students to use digital technology safely, beneficially, and most effectively. Digital citizenship comprises 8 key skills that allow for understanding and safe existence in society: 1) Digital Citizen Identity, 2) Screen Time Management, 3) Cyberbullying Management, 4) Cybersecurity Management, 5) Privacy Management, 6) Critical Thinking, 7) Digital Footprint Management, and 8) Digital Empathy (Office of Knowledge Management and Development, 2021).

Most schools under the Office of Phayao Primary Education Service Area are small schools, accounting for 69 percent. Some schools are located in communities that are not yet ready to use digital technology. Some schools lack equipment for safe storage and use of information, or information storage still uses the central system of the Office of the Basic Education Commission, making it inconvenient to retrieve certain

data promptly. There is also a lack of sufficient projects to develop personnel in digital technology, although there have been efforts to establish policies to enhance educational quality in line with 21st-century changes. For example, there is a project to increase the efficiency of educational personnel's performance towards a digital society, aiming towards the 4.0 government system (Phayao Primary Education Service Area Office 2, 2022). However, this project is still ongoing, and results are not yet visible.

From the project work plans appearing in the annual action plan in the Basic Education Development Plan 2019-2022 of the Phayao Primary Education Service Area Office 1, it was found that in the fiscal year 2017, there was only one project related to ICT for education and the production and development of manpower and research that aligns with the country's development needs. In contrast, some strategies had up to 25 projects. From the SWOT analysis of the Phayao Primary Education Service Area Office, especially Area 1, which is close to urban areas, it was found that there are strengths in technology and information systems and multiple communication channels. However, weaknesses include uneven service provision due to lack of knowledge and skills among personnel and equipment, some personnel's resistance to change resulting in suboptimal work performance, and some supplies and equipment lacking quality and modernity. Obstacles include the rapid advancement of technology making it difficult for some personnel to adapt and use properly, misuse of technology causing damage and discredit to the agency and organization, and some students exhibiting inappropriate behavior and misusing media and technology, risking social problems (Phayao Primary Education Service Area Office 1, 2019).

From the small school management plan of the Phayao Provincial Education Office, many problems were found in small schools in various aspects, including management, teaching and learning, readiness of supporting factors, and issues with participation in educational management. For example, in management, administrators still lack management skills, resulting in unsatisfactory quality of education provision. Regarding the readiness of supporting factors, it was found that computer equipment is insufficient (Phayao Provincial Education Office, 2022).

Given the importance and problems mentioned above, the researcher is interested in studying "A Model for Developing Learning Skills in the New Normal Era to Enhance Digital Citizenship in Small Schools under the Office of Phayao Primary Education Service Area." This aims to provide guidelines that will help develop digital skills of students and teachers so they can apply them in quality work performance in teaching and learning in this rapidly changing era.

Objectives

1. To study the learning skills in the new normal era of students in small schools under the Office of Phayao Primary Education Service Area.

2. To examine the digital citizenship of students in small schools under the Office of Phayao Primary Education Service Area.

3. To develop a model for enhancing learning skills in the new normal era to promote digital citizenship in small schools under the Office of Phayao Primary Education Service Area.

Conceptual Framework

In this new era of digital learning, this research aims to develop a model for enhancing learners' skills to ensure they possess the necessary abilities reflecting learning in the new normal era. These learning skills, developed through various methods, will help foster digital citizenship. The research process, therefore, must study the methods of developing learning skills, examine the learning skills required in the new normal era, and ensure that these skills are relevant to promoting digital citizenship. Consequently, the conceptual framework for developing learning skills in the new normal era to enhance digital citizenship has been divided into three frameworks as follows:

1. Learning Skills in the New Normal Era.

From synthesizing learning skills in the new normal era, scholars have provided various definitions and characteristics of learning skills in the new normal era, totaling 11 skills. The scholars and sources that the researcher studied and found comprehensive in content and feasibility include Battelle for Kids (2019); Team Leverage Edu (2022); Indeed Editorial Team (2021); Bilbai (2015); Kalyanamitra (2021); and the Office of Upper Secondary Education Administration, OBEC (2015). The researcher synthesized ideas that can be used to develop teachers' learning skills, can be applied to learners, and can be used for self-development. The criteria used was a frequency of 3 or more, using the midpoint of the maximum score, which is 6 points. This resulted in 5 learning skills components for the new normal era: 1) Critical Thinking Skill 2) Communication Skill 3) Collaboration Skill 4) Creativity and Innovation Skill and 5) Digital Skill.

2. Digital Citizenship

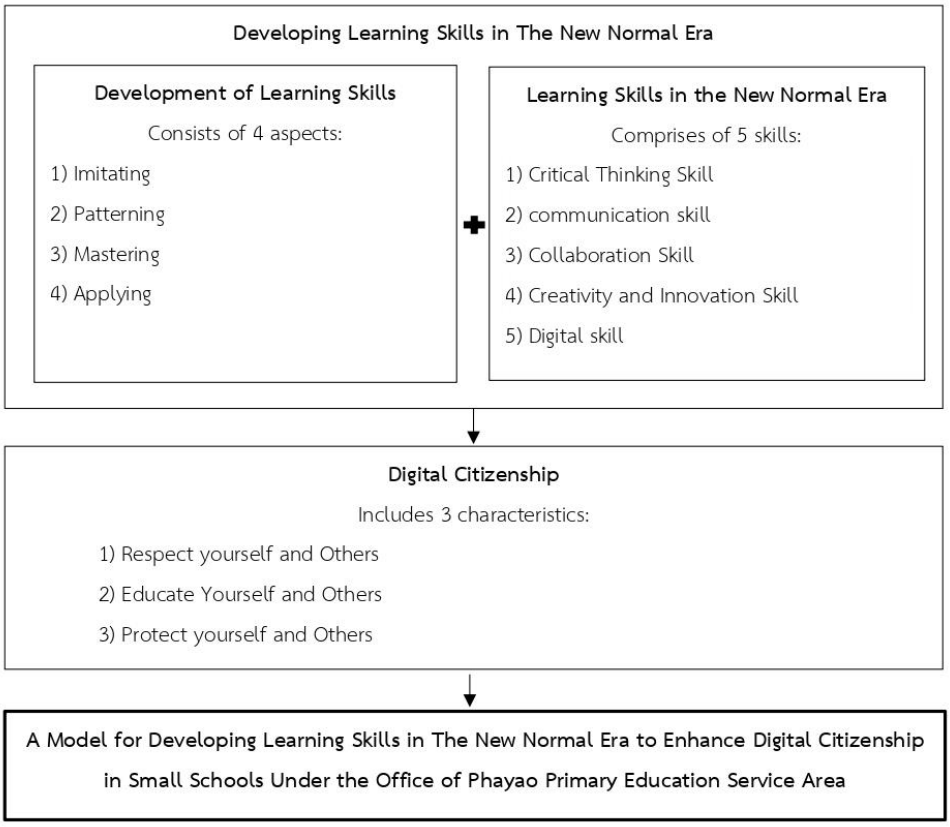
From synthesizing digital citizenship, scholars have provided various definitions and components. The scholars and sources that the researcher studied and found comprehensive in content and feasibility include White et al. (2021); Sanguankaew (2015); Klangnarong and Ruangnaphakul (2021); Chusaengnil (2018); Choi (2016); Ribble (2015); and Damrongkiattisak (cited in Kraiwin, 2017). The researcher considered digital citizenship issues and applied the concepts of Ribble (2015) and Damrongkiattisak (cited in Kraiwin, 2017) as the main conceptual framework for digital citizenship, as it encompasses all the concepts of the scholars and sources mentioned above. This resulted in a conceptual framework of 3 characteristics of digital citizenship: 1) Respect yourself and Others 2) Educate Yourself and Others and 3) Protect yourself and Others.

3. Development of Learning Skills

The researcher studied documents and research related to the development of learning skills, applying the concepts of Chaisorn (1987); Wongyai and Patphol (2022); and DecCecc and Crowfor (1974) as the main conceptual framework for conducting the research: 1) Imitating 2) Patterning 3) Mastering and 4) Applying The conceptual framework can be summarized in the following figure 1:

Figure 1

The Development of Learning Skills in the New Normal Era to Enhance Digital Citizenship in Small Schools Under the Office of Phayao Primary Education Service Area framework



Research Methodology

This research was conducted in 6 steps covering the objectives as follows:

Step 1: Define the research conceptual framework by studying concepts, theories, and knowledge related to learning skill development, learning management in the new normal era, learning skills in the new normal era, digital citizenship, concepts of models and model development, as well as related research to apply as a conceptual framework. This resulted in a framework with 3 aspects: learning skill development framework, learning skills framework for the new normal era, and digital citizenship framework.

Step 2: Study the level of learning skill development in the new normal era and digital citizenship in small schools.

2.1 Population and Sample: The population consisted of 992 teachers. The sample size of 278 teachers was determined using Krejcie and Morgan's table (1970) at a 95% confidence level. Multi-stage sampling was used to select the sample.

2.2 The research instruments used were: A questionnaire on the development of learning skills in the new normal era, consisting of 11 items. A questionnaire on learning skills in the new normal era, consisting

of 96 items. A questionnaire on digital citizenship in small schools, consisting of 15 items. An evaluation form for the draft model of developing learning skills in the new normal era to enhance digital citizenship. All instruments are based on a 5-point rating scale.

2.3 Validity check of the questionnaire: Three experts in research were used to examine and provide suggestions on content validity and language clarity to ensure the questionnaire was comprehensive and appropriate for the research content. The questionnaire was revised according to suggestions. The criteria for selecting experts were knowledge in skill development, learning skills in the new normal era, digital citizenship, and school administration. The Index of Item-Objective Congruence (IOC) ranged from 0.67-1.00.

2.4 Reliability check of the questionnaire: The content-validated questionnaire was sent to school administrators with characteristics similar to but not part of the sample group. Data was collected from 30 teachers to determine reliability using Cronbach's Alpha Coefficient. The reliability for learning skill development in the new normal era was .898, for learning skills in the new normal era was .990, and for digital citizenship was .956.

2.5 Data collection: The researcher sent letters to school directors of the sample group requesting cooperation in data collection. Questionnaires were sent directly to sample schools by mail, containing QR codes and links for responding to the questionnaire. Out of 278 questionnaires sent, 234 complete questionnaires were returned, representing an 84.18% response rate.

2.6 Data analysis: Quantitative data was analyzed using computer software for social science research. Descriptive statistics used included frequency distribution, percentage, mean, and standard deviation. Open-ended questions were analyzed using content analysis. Qualitative data from document studies was analyzed using content analysis. Data from focus group discussions was analyzed using typological analysis, data comparison, and inductive data construction.

Step 3: Draft the model (version 1) for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Service Area. This involved developing components and sequencing the development of learning skills in the new normal era to promote digital citizenship.

Step 4: Evaluate the draft model (version 1) to revise it into version 2. The appropriateness and feasibility of the draft model were evaluated by 10 experts, and improvements were made based on individual expert suggestions.

Step 5: Develop draft model version 2 and evaluate its appropriateness and feasibility with 7 experts through a focus group discussion. Improvements were made based on group expert suggestions.

Step 6: Present and disseminate the final version of the model for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Service Area.

Research Results

The data analysis and presentation of research results to show connections revealed that the research findings should be presented on the following issues: 1) methods for developing learning skills, and 2) learning skills in the new normal era, showing how they are ranked by average scores both in terms of aspects and individual questions. This is to lead to the enhancement of digital citizenship and to cover the research objectives. The research results in each area will be used to develop components and guidelines for developing skills in the new normal era to enhance students' digital citizenship. Therefore, the research results are presented in the following order:

1. The development of learning skills in the new normal era in small schools under the Office of Phayao Primary Educational Service Area consists of 4 methods, with the overall level being high, ranked as follows: 1) Learning by imitation: It was found that developing skills for learners by teachers demonstrating step-by-step and developing skills for learners by providing assistance while practicing had the highest average score. 2) Learning by following a pattern: It was found that developing skills through explanation, giving advice, clear instruction, and reviewing practice for learners had the highest average score. 3) Learning through mastery: It was found that developing learners' skills by setting topics and methods for practice while monitoring correct results had the highest average score. 4) Learning by apply: It was found that developing learners' skills by creating new situations or other situations beyond what they have done before had the highest average score.

The details are shown in the following table:

Table 1

Average and standard deviation of learning skill development in the new normal era for students in small schools under the Office of Phayao Primary Education Service Area, overall

Learning Skill Development in the New Normal Era for Small Schools	Interpretation			
	(Mean)	(S.D.)	Level	Rank
1. Learning by imitation	3.98	.60	High	1
2. Learning by following pattern	3.91	.79	High	2
3. Learning through mastery	3.65	.57	High	3
4. Learning by application	3.40	.54	Moderate	4
Total	**3.73**	**.47**	**High**	

2. Learning skills in the new normal era for small schools under the Office of Phayao Primary Educational Service Area consist of 5 skills, with the overall level being high, ranked as follows: 1) Collaboration skills: It was found that demonstrating and assisting learners to work happily in teams with others had the highest average score. Setting topics and methods for learners to practice until they can express opinions and accept others' opinions appropriately, promoting learners to be responsible with co-workers, and defining

necessary skills in various situations for problem-solving to promote appreciation of co-workers' roles had the lowest average scores. 2) Communication skills: Demonstrating and assisting learners to select and evaluate media or messages for appropriate communication had the highest average score. Setting topics and methods for learners to practice public speaking, and defining necessary skills in various situations for problem-solving to develop public speaking ability had the lowest average scores. 3) Critical thinking skills: Explaining, instructing, and having learners practice to develop abilities in analysis, synthesis, interpretation, comparison, and discernment of correct or appropriate information had the highest average score. Defining necessary skills in various situations for problem-solving to develop abilities in evaluation, assessment, and application of information for decision-making and problem-solving had the lowest average score. 4) Digital skills: Explaining, instructing, and having learners practice to develop ethics in information technology use and avoid breaking laws related to information and communication technology had the highest average score. Setting topics and methods for learners to practice efficient and fluent use of digital technology, and defining necessary skills in various situations for problem-solving to promote appropriate information filtering, analysis, synthesis, and evaluation had the lowest average scores. 5) Creativity and innovation skills: Demonstrating and assisting learners to promote the ability to creatively generate new knowledge had the highest average score. Setting topics and methods for learners to practice promoting courage in asking questions, and defining necessary skills in various situations for problem-solving to promote thinking of new solutions and thinking outside the box had the lowest average scores. The details are shown in the following table:

Table 2

Average and standard deviation of learning skills in the new normal era for small schools under the Office of Phayao Primary Education Service Area, overall

Learning Skills in the New Normal Era for Small Schools	Interpretation			
	(Mean)	(S.D.)	Level	Rank
1. Critical thinking skills	4.22	.51	High	3
2. Communication skills	4.28	.44	High	2
3. Collaboration skills	4.33	.49	High	1
4. Creativity and innovation skills	4.20	.50	High	5
5. Digital skills	4.21	.51	High	4
Total	**4.24**	**.44**	**High**	

3. Digital citizenship of students in small schools under the Office of Phayao Primary Educational Service Area consists of 3 aspects, with the overall level being high, ranked as follows: 1) Respect yourself and others: Promoting knowledge and understanding of appropriate media use with etiquette and respect for others

had the highest average score. Promoting responsibility for electronic actions and digital technology use had the lowest average score. 2) Educate yourself and others: Promoting knowledge about technology for the most appropriate use and promoting understanding of diverse communication methods had the highest average scores. Enhancing the ability to protect important personal information in digital business transactions had the lowest average score. 3) Protect yourself and others: Promoting and providing knowledge about sharing content that doesn't violate rights or harm others had the highest average score. Promoting awareness of freedoms, regulations, and agreements in the digital world, and promoting digital safety, such as virus protection and personal data protection, had the lowest average scores. The details are shown in the following table:

Table 3

Average and standard deviation of digital citizenship for students in small schools under the Office of Phayao Primary Education Service Area, overall

Digital Citizenship of Students in Small Schools	Interpretation			
	(Mean)	(S.D.)	Level	Rank
1. Respect yourself and others	4.39	.57	High	1
2. Educate yourself and others	4.24	.58	High	2
3. Protect yourself and others	4.23	.62	High	3
Total	**4.29**	**.54**	**High**	

4. The model for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Service Area.

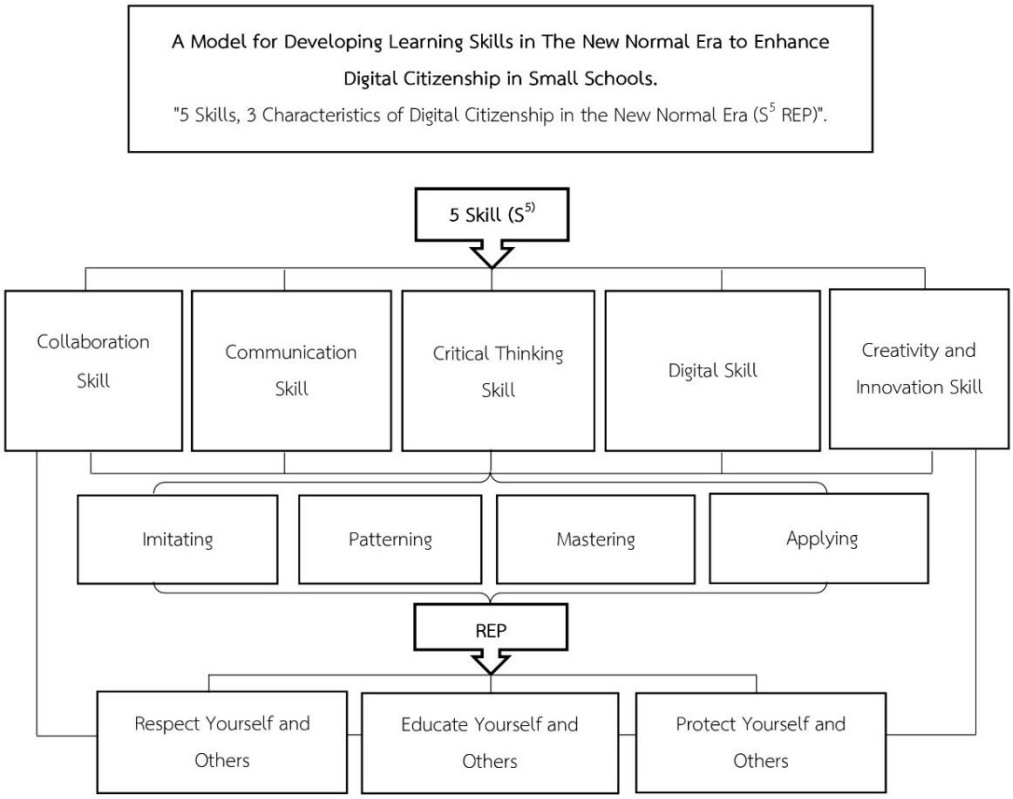
From the analysis of data on the development of learning skills in the new normal era, learning skills in the new normal era, and digital citizenship of learners in small schools, this led to the development of a model by drafting a prototype and having experts evaluate its appropriateness and feasibility, as well as conducting a focus group discussion. Therefore, the results can be summarized as follows for the model of developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Educational Service Area:

The model consists of 3 operational components, which are: 1) Learning skill development, comprising 4 aspects with 11 development issues: 1.1) Learning by imitation (3 development issues) 1.2) Learning by following pattern (3 development issues) 1.3) Learning through mastery (3 development issues) and 1.4) Learning by apply (2 development issues), 2) Learning skills of students in the new normal era for small schools, comprising 5 skills with 96 development issues: 2.1) Collaboration skills (24 development issues) 2.2) Communication skills (20 development issues) 2.3) Critical thinking skills (8 development issues) 2.4) Digital skills (20 development issues) and 2.5) Creativity and innovation skills (24 development issues) and 3) Digital

citizenship of students in small schools, comprising 3 aspects with 14 development issues: 3.1) Respect yourself and others (4 development issues) 3.2) Educate yourself and others (6 development issues) and 3.3) Protect yourself and others (4 development issues).

Figure 2

A model for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Area: '5 Skills and 3 Characteristics of Digital Citizenship in the New Normal Era' (S5 REP)



Discussions

This research focuses on studying the development of learning skills in the new normal era to enhance digital citizenship in small schools. The key points for discussion, in line with the research objectives, are as follows:

1. Learning skills in the new normal era for students in small schools: The research findings show that creativity and innovation skills had the lowest mean score, especially in terms of the courage to ask questions and thinking of new ways to solve problems or think outside the box. This may be due to the limitations of small schools that still lack diverse media or technologies that can be used to create new innovations. It also relates to the insufficient number of teachers compared to the number of classes, teachers' lack of expertise in these areas, and their multiple responsibilities, which may prevent them from fully

implementing teaching methods, especially in subjects that require children to use creative thinking skills and promote innovative thinking. Studies on the context of Thai students also show that most students still lack questioning skills and out-of-the-box thinking. This is evident from the numerous projects and policies of various related agencies attempting to promote and develop students' courage to think, act, and express themselves creatively, as well as to promote out-of-the-box thinking. This aligns with the research of Samphan et al. (2023), which studied guidelines for developing teaching and learning innovations in small schools. They found that in terms of innovative teaching media, the aspect of teachers using innovative media to help students understand the learning content concretely had a lower mean score than other aspects. It also corresponds with the research of Uppaphan (2021), which studied the development of creativity using a future problem-solving process instructional model. The study found that the development of creativity in proposing unprecedented problem-solving approaches (thinking of new solutions) had the lowest mean score compared to other aspects.

2. Digital citizenship of students in small schools: Research findings show that the promotion of digital citizenship in small schools, particularly in the area of protect yourself and others, has the lowest average score. This may be due to the current complexity of technology, which school administrators, teachers, and students may lack the skills to keep up with in a timely manner. All groups, especially youth, may fall victim to cybercrime in terms of protecting themselves and others. Research on internet crime victimization by several academics has found instances of cyberbullying, such as attacks, insults, sarcasm, threats, identity theft, blackmail, online fraud, creating networks to target specific individuals, and sexual harassment. It is evident that the digital world has many dimensions that require caution. Although there have been training sessions on digital literacy, the rapid and disruptive changes in technology have made these training sessions insufficient and inconsistent. To promote protect yourself and others in the digital world, teachers need specialized technological knowledge to effectively support learners. However, the context of small schools in Phayao province may result in an insufficient number of expert teachers. This aligns with the research of Kraiwin (2017), who studied strategies for developing administrators based on digital citizenship concepts. The study found that on-the-job training development in the area of protect yourself and others was at a moderate level and had the lowest average score. It also corresponds with the research of Phawabut (2022), who studied the development of activity sets to promote digital citizenship among primary school students. The study found that the aspect of digital safety management with the lowest average score was understanding the risks and dangers of digital usage and the ability to protect yourself and others from dangers in digital usage.

3. A model for developing learning skills in the new normal era to enhance digital citizenship in small schools under the Office of Phayao Primary Education Service Area: The study found that the model consists of three operational components: 1) development of learning skills, 2) learning skills of students in the new normal era in small schools, and 3) digital citizenship of students in small schools. The model's appropriateness and feasibility, as evaluated by experts, were at the highest level. The focus group assessment showed 100% appropriateness and feasibility. This may be because the model was developed based on direct input from administrators and teachers in small schools in Phayao province, and the data used to develop the model

closely aligned with reality. The model was also evaluated by experts who understood the context of small schools in Phayao province, making it highly relevant for practical implementation. This aligns with the research of Phajontit et al. (2016), who studied the development of a teaching model to enhance problem-solving skills for students. They found that the efficiency evaluation of the model by experts was at the highest level. It also corresponds with the research of Yoo-ngam et al. (2016), who studied a model for developing students' 21st-century skills. Their study found that the model's utility evaluation had the highest average score.

Recommendations

1. Recommendations for applying research results

1.1 School administrators and teachers in small schools should emphasize promoting students' learning skills development by providing diverse experiences and situations. This will enable students to solve problems and learn in various situations, as the research found that developing learning skills in the new normal era of small schools, particularly in dealing with different situations (Apply), had the lowest average score.

1.2 School administrators and teachers in small schools should continuously and consistently promote teamwork skills among students, especially in helping learners work happily in teams with others. This will enhance learning skills quality, as the research found that learning skills in the new normal era of small schools in the area of collaboration skills had the highest average score.

1.3 School administrators and teachers in small schools should focus on developing students' creative thinking and innovation skills, particularly in encouraging questioning, finding new problem-solving methods, and thinking outside the box. This will develop creativity and innovation, which are crucial skills in current learning or 21st-century learning, as the research found that learning skills in the new normal era of small schools in creative thinking and innovation had the lowest average score.

1.4 School administrators and teachers in small schools should promote and support digital citizenship enhancement in respect yourself and others, especially by providing continuous knowledge and understanding of appropriate media use, etiquette, and respect for others. This will further strengthen these skills effectively, as the research found that digital citizenship of students in small schools in the area of respect yourself and others had the highest average score.

1.5 School administrators and teachers in small schools should focus on developing digital citizenship in protect yourself and others, particularly in promoting awareness of freedoms, regulations, and agreements in the digital world, and digital safety such as virus protection and personal data protection. This should be done comprehensively and efficiently, as the research found that digital citizenship of students in small schools in the area of protect yourself and others had the lowest average score.

1.6 Small schools should continuously implement the model for developing learning skills in the new normal era to enhance digital citizenship, including 1) defining the development of learning skills in the new normal era, 2) defining learning skills in the new normal era, and 3) enhancing digital citizenship.

The research found that the assessment of the model's appropriateness and feasibility by experts was at the highest level, and the focus group of experts deemed it 100% appropriate and feasible.

2. Recommendations for future research

2.1 Research should be conducted on "Guidelines for developing students' problem-solving skills to enhance learning in the era of disruptive change," as the research found that developing learning skills in the new normal era in dealing with various situations had the lowest average score.

2.2 Research should be conducted on "A model for developing students' creative thinking and innovation skills to enhance 21st-century learning skills," as the research found that creative thinking and innovation skills had the lowest average score.

2.3 Research should be conducted on "Developing guidelines for self-protection and protection of others to enhance digital safety and digital intelligence of students in small schools," as the research found that students' digital citizenship in the area of self-protection and protection of others had the lowest average score.

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References

Battelle for Kids. (2019). *Framework for 21st Century Learning.* Retrieved May 27, 2023, from https://www.battelleforkids.org/networks/p21

Bilbai, S. (2015). *Competencies, skills, and roles of Thai teachers in the 21st century*. Bangkok: Phranakhon Rajabhat University.

Chaemchoy, S. (2018). *School administration in the digital era*. Bangkok: Chulalongkorn University Press.

Chaisorn, P. (1987). Practical performance assessment. *Journal of Educational Measurement, 8*(23), 37-61.

Choi, M. (2016). A Concept Analysis of Digital Citizenship for Democratic Citizenship Education in the Internet Age. *Theory & Research in Social Education, 44*(4), 565–607. DOI: 10.1080/00933104.2016.1210549

Chuseangnil, C. (2018). *The era of digital citizenship*. Retrieved June 20, 2023, from https://www.scimath.org/article-technology/item/8659-2018-09-11-07-58-08

Conbach, L. J. (1990). *Essentials of Psychological Testing* (5th ed). New York: Harper & Row.

DecCecc, J. P., & Crowfor, R. C. (1974). *The Psychology of Learning and Instruction: Educational Psychology.* (2nd ed). Englewood Cliffs, NJ: Prentice-Hall.

Indeed Editorial Team. (2021). *Learning Skill: Definition and Examples*. Retrieved July 5, 2023, from https://www.indeed.com

Kalyanamitra, K. (2021). Essential skills for the future of work in the post-COVID-19 era. *MCU Buddhabanya Review Journal, 6*(3), 163-176.

Klangnarong, S., & Ruangnopakul, N. (2021). *Digital citizenship and dealing with online dark sides in the new normal*. Retrieved June 22, 2023, from https://blog.cofact.org/digitalcitizen/

Kraiwit, P. (2017). *Strategies for developing private school administrators based on digital citizenship concepts* (Doctoral dissertation). Bangkok: Chulalongkorn University.

Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement,* 30(3), 607-610.

Narasri, P., & Boontham, T. (2021). Needs assessment for developing essential skills for primary school teachers in Saraburi province. *Academic Journal of Rattana Bundit University, 16*(2), 91-104.

Nokkaew, P. (2019). *Life and career skills in the 21st century of Mathayom 3 students in Samut Prakan province* (Master thesis). Bangkok: Rajamangala University of Technology Thanyaburi.

Office of Knowledge Management and Development (OKMD). (2021). *8 digital citizenship skills*. Retrieved June 20, 2023, from https://www.okmd.or.th/okmd-kratooktomkit/4673/

Pajorntit, A., Yamkasikorn, M., & Boonamphai, T. (2016). Development of an instructional model to enhance problem-solving skills for cadets at Chulachomklao Royal Military Academy. *Journal of Research and Development, 11*(2), 399-408.

Pawabut, Y. (2022). *Development of activity sets to promote digital citizenship for primary school students* (Master thesis). Nakhon Phanom: Nakhon Phanom University.

Phayao Provincial Education Office. (2022). *Small school management plan for academic year 2022*. Phayao: Phayao Provincial Education Office.

Phayao Primary Educational Service Area Office 1. (2019). *4-year basic education development plan (2019-2022)*. Phayao: Phayao Primary Educational Service Area Office 1.

Phayao Primary Educational Service Area Office 2. (2022). *Annual action plan for fiscal year 2022*. Phayao: Phayao Primary Educational Service Area Office 2.

Ribble, M. (2015). *Digital Citizenship in Schools: nine elements all students should know* (3rd ed). Virginia: International Society for Technology in Education.

Sanguankaew, W. (2015). *Digital citizenship*. Retrieved June 22, 2023, from https://www.stou.ac.th/study/sumrit/1-59(500)/page2-1-59(500).html

Samphan, P., Ngamprakon, S., & Chamnisart, B. (2023). Guidelines for developing innovative teaching and learning management in small schools under Phra Nakhon Si Ayutthaya Primary Educational Service Area Office 1. *Graduate Studies Journal, Mahamakut Buddhist University, 21*(2), 197-207.

Team Leverage Edu. (2022). *Learning Skills for Students*. Retrieved July 10, 2023, from https://leverageedu.com/blog/learning-skills/

Thai PBS. (2020). *"New normal" - The Royal Institute has coined the Thai term*. Retrieved March 16, 2023, from https://www.thaipbs.or.th/news/content/292432

White, S., Rakkhanto, S., & Srikruedong, S. (2021). Humans and digital citizenship. *Journal of MCU Human Sciences Review, 7*(2), 339-355.

Wongyai, W., & Patphol, M. (2022). *Learning and development skills*. Bangkok: Center for Innovative Leaders in Curriculum and Learning.

Yoo-ngam, Y., Inthusamit, M., & Nawasit, S. (2016). A model for developing 21st century skills in students through participatory action research: A case study of Ban Nong Dok Bua School, Loei Primary Educational Service Area Office 1. *Journal of Educational Administration KKU, 12*(2), 13-23.