



## **Developing digital literacy skills for administrators under marginalized schools**

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### **Abstract**

This research aimed to: 1) investigate the current states and problems of digital literacy skills for administrators under marginalized schools; 2) study the conditions for developing digital literacy skills for administrators under marginalized schools; and 3) propose the guidelines for developing digital literacy skills for administrators under marginalized schools. Instruments used in this research were an in-depth interview form, an open-ended questionnaire, and a record form for workshop and focus group discussion. Data were analyzed by content analysis and summarizing, and descriptive analysis. The results of the research were found as follows: 1. the current states and problems of digital literacy skills for administrators under marginalized schools consisted of basic skills, basic skills for working, and application skills for working; 2. the conditions for developing digital literacy skills for administrators under marginalized schools were budget allocation to support the education and the Ministry of Education had to stipulate the policy in developing digital literacy skills for the marginalized schools; 3. the guidelines for developing digital literacy skills for administrators under marginalized schools consisted of input, process, output, and feedback.

**Keywords:** Digital literacy skill, administrator, marginalized school

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### **1. Introduction**

Educational development in remote areas is still a problem that needs to be taken care of equally. The fact that appears today is that there are still many children who cannot access to a quality education even though it is a fundamental right that should be received equally, especially for children in remote areas, or “marginalized children”. How can we build cooperation to keep children out of the education system? Not only infrastructure must come first, including roads, electricity, water supply, but also internet signals. When all utilities are ready, the next step is to manage educational institutions to have elements and environments suitable for learning and quality education. In order to improve the educational quality in “marginalized schools”, it is necessary that school administrators and teachers have to strengthen and upgrade their skills for new competencies to apply to children in remote areas, especially skills for living in new society.

According to the executive summary of The National Scheme of Education B.E. 2560–2579 (2017–

2036) [1], the cooperation among all sectors is required. Each sector must acknowledge and understand the importance of education as well as take part in the planning in order for its effectiveness. In addition to the planning, related conditions and contexts affecting the development of the national education such as rapid digital technology, economic and social advancements affecting the country, the region, and the 21<sup>st</sup> century trends affecting skill requirements among the population must all be examined as they challenge Thailand and the world economically and socially while we have been preparing for Thailand 4.0.

Moreover, the fourth strategy is to create opportunities and equality in education by providing people of all ages more opportunities in education through digital technology for education, including a modern network of digital technology for education which satisfied the needs of students and users effectively, and a high speed and quality internet access at every educational institution.

Due to the change of digital technology for living, innovation and advancement of digital technology by leaps and bounds, causing a disruptive technology, not only affects the economy but also ways of life in countries around the world which face with many digital

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technologies in daily life. Therefore, they should learn and understand about digital technology in order to be up-to-date and use them for their own benefit society and the next country. This was the role of education that must develop children and youth to have knowledge in digital literacy.

Accordingly, the Office of the Civil Service Commission [2] had defined digital literacy as a skill of understanding and using digital technology. Otherwise digital literacy referred to a skill for applying the tools, equipment and today's existing digital technologies, such as computers, mobile phones, tablets, computer program, and online media, etc. for maximum benefit in communication, operation, and team working or for development of work processes or work systems in the organizations to be modern and more efficient. Such skills covered 4 dimensions of competences consisting of efficient use, understanding, creation, and access to digital technology.

In addition, the National Scheme of Education B.E. 2560–2579 (2017–2036) [1] determined to upgrade educational quality and encourage educational accessibility for those in the Special Development Zone for multicultural or marginal groups and migrant workers in order to promote opportunities to access education and learning for people of all ages in special areas that is appropriate and in line with the social landscape, identity, and needs of communities and areas.

According to the view of Thongchai Somboon [3], the marginalized people were another group that the state had to pay special attention in the context of education management. Teachers had to understand "identities" of marginalized people well and clearly because this group wanted the unity like other people in society, only they were given less opportunity than other groups. Therefore, education must be ensure teaching that could lead marginalized people to be able to read and write Thai language, the use of basic technology, and building a means of communication with understanding on the basis of the reality of society. This would greatly benefit the holistic development of the nation-state.

However, in accordance with the paper of Organization for Economic Co-operation and Development (OECD) that studied the impact of students during the COVID-19 pandemic [4], only 57% of the poorest students could access internet signal. This might be because they had no money for a subscription or they were in a too remote area to have a signal. This situation could lead to a disadvantage in accessing learning among the poorest students.

In terms of UNICEF [5], digital literacy referred to the knowledge, skills and attitudes that allowed children to be both safe and empowered in an increasingly digital world. This encompassed their play, participation, socializing, searching, and learning through digital technologies. What constitutes digital literacy would vary according to children's age, local culture

and context. Moreover, World Literacy Foundation [6] explained that digital literacy did not just mean IT proficiency. It required thinking skills, an awareness of the necessary standards of behavior expected in online environments, and an understanding of the shared social issues created by digital technologies.

Nevertheless, the Office of the Basic Education Commission [7] determined the third policy in fiscal year 2020 focusing on the development and enhancement of human resource potential in terms of measures and action guidelines, which were applied digital technology to support learning for learners at all levels of educational management. It was a measure for the application of digital technology to encourage and support learners to develop their own learning methods according to the needs and aptitudes of the learners. They could create their own knowledge-based society for continuous lifelong learning. Therefore, educational institutions had to apply knowledge-based information, media, videos, and various types of knowledge-based textbooks in the form of digital textbooks according to the specified course content; manage learning through a digital learning platform to respond to the development of learning of individual learners; and organize learning activities to develop learners to learn on their own through digital system.

In line with the SWOT analysis study of Chiang Mai Primary Educational Service Area Office 5 [8], it was indicated that in terms of technology, threats consisted of some areas could not be used, which were the barriers to the use of technology and the lack of knowledge in the correct use of technology. The researchers are interested in developing digital literacy skills for administrators of marginalized schools which should be initiated to make it happens. It is expected that this research results will be beneficial to the relevant agencies in marginalized school administration at all levels in the future.

## 2. Research Questions

2.1 What are the current states and problems of digital literacy skills for administrators under marginalized schools?

2.2 What are the conditions in developing digital literacy skills for administrators under marginalized schools?

2.3 What are the guidelines in developing digital literacy skills for administrators under marginalized schools?

## 3. Research Objectives

3.1 To investigate the current states and problems of digital literacy skills for administrators under marginalized schools.

3.2 To study the conditions in developing digital literacy skills for administrators under marginalized schools.

3.3 To propose the guidelines in developing digital literacy skills for administrators under marginalized schools.

#### 4. Materials and Methods

The research process was divided into three phases as follows:

**Phase 1:** Investigate the current states and problems of digital literacy skills for administrators under marginalized schools. The key informants were five school administrators under Doi Koeng Patana School Network Group as follows: 1) Ban Plang 5 School, 2) Banwangaung School, 3) Soonobphayop Plang 8 School, 4) Choomchon Soonobphayop Plang 4 School, and 5) Ban Plang 2 School; selected by purposive sampling. The instrument used was an in-depth interview form concerning the development of digital literacy skills according to the Office of the Civil Service Commission [2]. Data were analyzed by classifying into issues.

**Phase 2:** Study the conditions in developing digital literacy skills for administrators under marginalized schools. The key informants were fifteen relevant educational personnel/division directors/supervisors under Chiang Mai Primary Educational Service Area Office 5, a representative of community, and research team members. They participated in a work shop to analyze the factors in developing digital literacy skills for administrators under marginalized schools in terms of factors supporting achievement and recommendations for the use of digital literacy skills for administrators under marginalized schools. The instrument used was a work shop record form. Data were analyzed by content summarizing.

**Phase 3:** Propose guidelines for developing digital literacy skills for administrators under marginalized schools. The key informants were selected by purposive sampling. Phase 3 was divided into 3 steps as follows:

Step 3.1 Formulate guidelines for developing digital literacy skills for administrators under marginalized schools. The informants consisted of eleven relevant educational personnel/division directors/supervisors under Chiang Mai Primary Educational Service Area Office 5, and research team members, selected by purposive sampling. The instrument used was a focus group discussion. Data were analyzed by summarizing operational procedures.

Step 3.2 Inquire about the digital literacy skills for administrators under marginalized schools. The informants were five school administrators under Doi Koeng Patana School Network Group selected by purposive sampling. The instrument used was a questionnaire concerning digital literacy skills, the use of digital literacy skills as well as sharing and educating digital literacy skills of administrators under marginalized schools. Data were analyzed by summarizing.

Step 3.3 Survey the satisfaction of sharing and educating digital literacy skills of administrators under marginalized schools. The sample was 10 representatives of teachers under Doi Koeng Patana School Network Group. The instrument used was an open-ended questionnaire concerning sharing and educating digital literacy skills of school administrators for teachers under marginalized schools of Doi Koeng Patana School Network Group. Data were analyzed by descriptive analysis.

The research framework was shown in Figure 1.

#### 5. Results and Discussion

The results of this research were as follows:

**Phase 1 :** Results of investigating the current states and problems of digital literacy skills for administrators under marginalized schools from the in-depth interviewing of five school administrators of Doi Koeng Patana School Network Group concerning the development of digital literacy skills of the Office of the Civil Service Commission [2]. Data were analyzed by classifying into issues. The results were shown in table 1.

It was in accordance with N. Sinlapasakkhajorn, T. Unaromlert [9] who studied the use of information technology for the education of schools under the district primary education in Nakhon Pathom. The result showed the use of computers and the Internet at a high level, the program Ms-Word documents at the highest level, followed by the use of computers to enhance their skills and knowledge for their own training. It was also found that the majority had no knowledge of the Internet and Internet applications. Regarding computer application in teaching, the collection and analysis of student results was at a moderate level, followed by the use of computer-assisted instruction (CAI), and the lesson learned by the software.

Likewise, World Literacy Foundation [7] explained that digital literacy did not just mean IT proficiency. It required thinking skills, an awareness of the necessary standards of behavior expected in online environments, and an understanding of the shared social issues created by digital technologies.

**Phase 2 :** Results of studying the conditions in developing digital literacy skills for administrators under marginalized schools from the workshop of fifteen key informants who were relevant educational personnel, a representative of community, and research team members. The results were divided into 2 parts as follows:

Part 2.1 : The factors supporting achievement of digital literacy skills for administrators under marginalized schools consisted of the budget allocation and support for education of Chiang Mai Primary Educational Service Area Office 5. They should recognize the necessity of marginalized schools, coordinate, and promote local administrative organizations to be able to provide education related with the educational

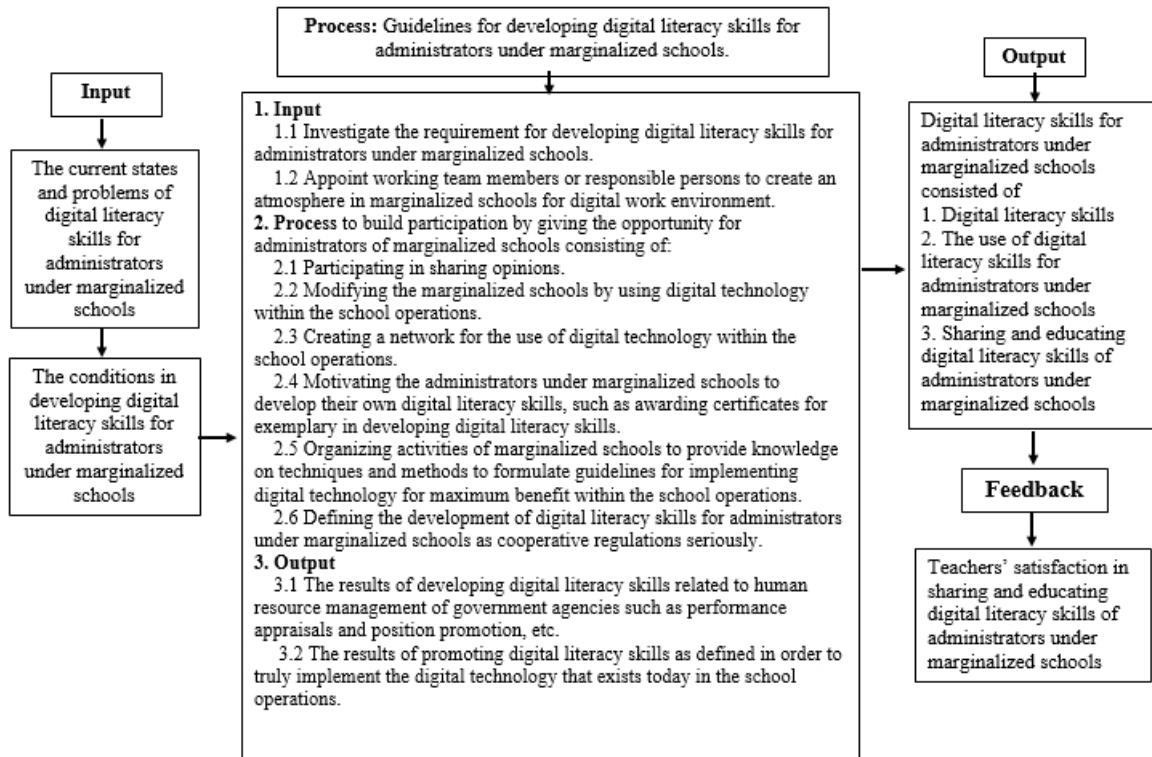


Figure 1: Research framework.

standards and educational management of marginalized schools.

Part 2.2 : For the recommendations of the use of digital literacy skills for administrators under marginalized schools, The Ministry of Education had to stipulate the policy in developing digital literacy skills for the marginalized schools; build leadership for administrators; and provide equal education with quality, standards and all over without charge; provide education for the use of digital literacy skills of marginalized schools with disadvantages; and gave special rights and opportunities to receive digital technology. The schools had to create brand and outstanding for community values to reduce students decrease. Moreover, Chiang Mai Primary Educational Service Area Office 5 should motivate communities to participate in educational management and development of learning processes of marginalized schools continuously.

It was in compliance with T. Artmak, N. Pimsan, N. Punchakhetthikul [10] who studied the marginal schools in terms of the development of educational institutions focusing on participation in subject analysis or items that would be taken as an educational institution course; goals of the school curriculum, implementation of the school curriculum for actual teaching and learning; monitoring, evaluation, revision of content, and practice methods of the school curriculum.

Regarding the finding of Z. Ozturk [11], one should highlight the complexity of participation to under-

stand digital literacy practices, a central tenet of these practices. The understanding of the participation was worth noting the difference between interaction and participation. Many literacy practices might be interactive but not necessarily participatory. Interaction occurred when objects and events mutually influenced one another. In contrast, participation encompassed not only receiving information but also creating and synthesizing information.

**Phase 3 :** Results of proposing guidelines for developing digital literacy skills for administrators under marginalized schools which were divided into 3 steps as follows:

Step 3.1 : Results of formulating guidelines for developing digital literacy skills for administrators under marginalized schools from a focus group discussion of eleven relevant educational personnel/division directors/supervisors under Chiang Mai Primary Educational Service Area Office 5, and research team members, selected by purposive sampling. Data were analyzed by summarizing the operational processes as shown in figure 2.

Step 3.2 : Results of inquiring the digital literacy skills for administrators under marginalized schools of five school administrators under Doi Koeng Patana School Network Group, selected by purposive sampling. In term of digital literacy skills, the variety of relevant skills related to media literacy, technology literacy, information literacy, visual literacy, communication literacy, and social literacy were not often in-

**Table 1.** Results of investigating the current states and problems of digital literacy skills for administrators under marginalized schools.

Items	Current states	Current problems
<b>1. Basic skills</b>		
1.1 Computer usage	There is the number of processing devices in daily life.	Administrators still lack of new knowledge of technology literacy that has more complexity and techniques. The technical fluency requires computer operating.
1.2 Internet usage	There are several internet providers but none of them coordinates the cooperation and assists to fix the network problems.	Administrators still lack of access to search engine to assist teachers to prepare students for a knowledge-based economy where they develop information management skills to find, evaluate, and use information effectively.
1.3 The use of a security program	There is not a security program with license such as Nod32.	Administrators still lack of knowledge to use a security program to protect the database on cloud computing or Google Drive.
<b>2. Basic skills for working</b>		
2.1 The use of a word processing program	Administrators use a word processing program only to make official documents.	Administrators still lack of revised skills and knowledge in functions of a word processor and web browser.
2.2 The use of a spreadsheet program	Administrators assign responsible teachers to use a spreadsheet program for article accounting, monetary, budget, and examination scores.	Administrators still lack of ability to assess information literacy—what information that teachers need such as an online, knowledge of assessment, and the use of searchable information.
2.3 The use of a presentation program	Administrators use a presentation program only to show school profile when they have school visitors.	Administrators still lack of communication literacy of art, meaning, and sending messages in different ways, the impact and influence of mass media and popular culture—how can the media be used to communicate ideas effectively.
<b>3. Application skills for working</b>		
3.1 The use of a digital media creation program	Several devices are designed to help administrators to operate a computer.	Administrators still lack of media literacy in effectively searching for the information that teachers want from the Internet. It is also necessary to understand the different types of digital media and any applications.
3.2 The use of an online collaborative program	Administrators use only Line program to communicate.	Administrators still lack of social literacy in developing the management through cooperation and networking skills for working within social networks in order for gathering knowledge across different school cultures.
3.3 The use of digital for stability and security programs	Administrators do not use these programs.	Administrators do not involve with these programs.

volved with school administrations, so they did not have the literacy skills of digital technology. In term of the use of digital literacy skills for administrators under marginalized schools, they rarely used the skills because the lack of stable internet system. And in terms of sharing and educating digital literacy skills of administrators under marginalized schools, some teachers who were excellent in digital literacy skills assisted sharing and educating among teachers.

According to the findings of S. Chanunam and M. Brückner [12], the present study, the instructors showed a moderate level of digital literacy and more than half of the participating instructors exhibited some key fundamental digital skills and literacy. The findings suggested that there was still a need for specific training for enhancing their digital literacy in order for them to suitably leverage technology or digital tools for their teaching practice and research in an effective way.

Step 3.3 : Results of surveying the teachers' satisfaction in terms of sharing digital literacy skills of school administrators for teachers under marginalized schools of Doi Koeng Patana School Network Group were as follows: school administrators attempted to procure computers enough for working and provide computers with fast speed internet from community leaders. School administrators chose the internet provider to support the internet system that could be used to connect to various network systems both upload and download. School administrators had studied to create a database system that was sufficient for the school operations with easy to access and fast speed.

In terms of educating digital literacy skills of school administrators for teachers under marginalized schools of Doi Koeng Patana School Network Group were as follows: school administrators explained the learning and working process and built the motivation to use digital technology in the integration of teach-

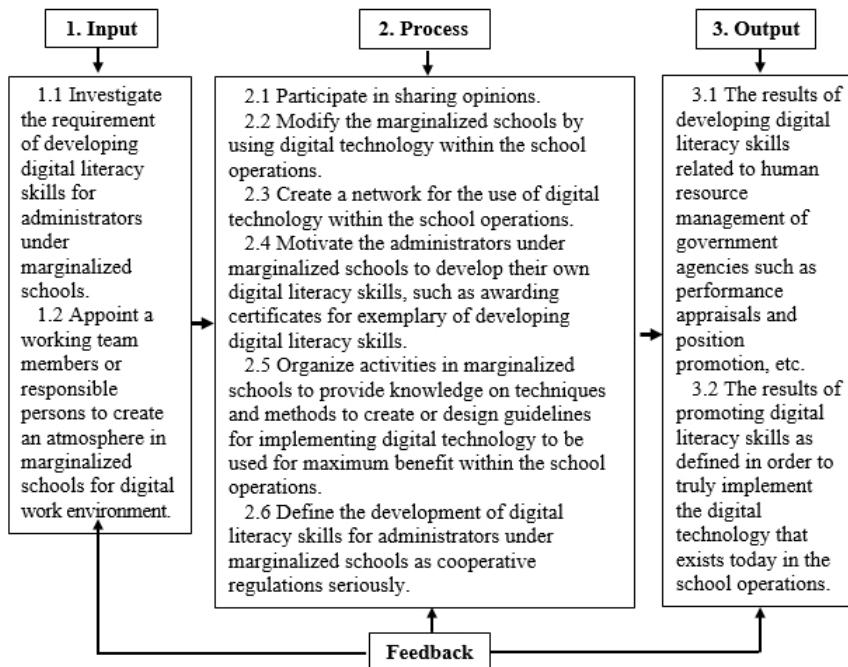


Figure 2: Operational processes.

ing and learning. School administrators had sufficient skills in transferring knowledge. School administrators were examples of using digital technology linking to the school operations and provided assistance, advice, and promotion of learning and problem solving.

According to R. L. Tyger [13], the results of studying teacher candidates' digital literacy and their technology integration efficacy will be important to both College of Education faculty and P-12 public school systems. It is because digital literacy and technology integration efficacy within both content and pedagogical knowledge are important requirements necessary for our pre-service teaching (PST) candidates to successfully take the helm of their 21<sup>st</sup> Century classrooms.

Similarly, G. Tongpasuk [14] studied the priority need index for ICT literacy knowledge of new graduates. The results of the research showed that the needs for development in the first three areas were 1) ICT literacy processes, 2) ICT in education, and 3) database usage.

Through these study results, it can be seen that it is possible to promote the digital literacy skills of school administrator and teachers with the implementation of practices involving digital technologies. The technological plan for marginalized schools should be implemented and equipped with appropriate technological resources to develop digital literacy skills. Skilled administrators in digital literacy can be encouraged attitudes of their teachers and students.

## 6. Conclusion

It could be said that the development of digital literacy skills for administrators under marginalized schools has been an essential part of school administration. Basic education management must focus on instilling to preserve and promote the marginalized rights as equality and human dignity with pride in being Thai people. Thus, the results of developing digital literacy skills for administrators under marginalized schools could be the initiation for caring and supporting marginalized schools all over regions of Thailand.

## 7. Recommendations

From this research, the recommendations are as follows:

7.1 The results of the current states and problems of digital literacy skills for administrators under marginalized schools will reflect the policy of the Office of the Basic Education Commission or other relevant educational agencies over Thailand.

7.2 There should be the building of digital literacy skills for administrators under marginalized schools that encouraged students of marginalized schools to benefit from Thai educational agencies actively.

## 8. Recommendation for Further Research

8.1 There should be the studying of digital literacy skills for administrators under marginalized schools all regions.

8.2 There should be the studying of digital literacy skills for teachers, educational personnel, and students of marginalized schools.

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## References

- [1] The National Scheme of Education (2017–2036). <http://www.lampang.go.th/public60/EducationPlan2.pdf> (accessed 5 May 2021).
- [2] Why we have to develop digital literacy skills. <https://www.ocsc.go.th/DLProject/mean-dlp> (accessed 5 May 2021)
- [3] Thongchai Somboon. Thai education, the breath of the marginalized people. [http://www.edu.ru.ac.th/images/edu\\_pdf/education-2558.pdf](http://www.edu.ru.ac.th/images/edu_pdf/education-2558.pdf) (accessed 5 May 2021)
- [4] Equitable Education Fund set the stage of reflection of marginalized schools where are not ready for online learning. <https://www.eef.or.th/453> (accessed 5 May 2021)
- [5] Digital literacy for children–10 things to know. <https://www.unicef.org/globalinsight/documents/digital-literacy-children-10-things-know> (accessed 5 May 2021)
- [6] What Is Digital Literacy and Why Does It Matter? <https://worldliteracyfoundation.org/digital-literacy-why-does-it-matter/> (accessed 5 May 2021)
- [7] Fiscal Year 2020 Policy of Office of the Basic Education Commission. <https://web.trat-edu.go.th> (accessed 5 May 2021)
- [8] A. Abd-Alrazaq, D. Alhuwail, M. Househ, M. Hamdi, Z. Shah, Top concerns of tweeters during the COVID-19 pandemic: infoveillance study, *Journal of Medical Internet research* 22(4) (2020) e19016. Chiang Mai Primary Educational Service Area Office 5. Basic Education Development Plan 2020–2022. [https://drive.google.com/file/d/1Ot6\\_B5dG1leC53wOXBoHrPAO3iNjiZ/](https://drive.google.com/file/d/1Ot6_B5dG1leC53wOXBoHrPAO3iNjiZ/) preview
- [9] N. Sinlapasakkhajorn, T. Unaromlert. The Study of Issues and Obstacles Facing the Use of Media and Technology for Education in Primary School the Province Nakorn Pathom. <https://he02.tci-thaijo.org/index.php/Veridian-E-Journal/article/download/40236/33178/>
- [10] T. Artmak, N. Pimsan, N. Punchakhetthikul. Development of a systematic approach model of the marginalized school under Kanchanaburi Primary Educational Service Area Office. <https://so03.tci-thaijo.org/index.php/JMND/article/view/250515>
- [11] Z. Ozturk. Elementary School Teachers' Integration Of Digital Literacy During Elementary School Teachers' Integration Of Digital Literacy During Collaborative Planning Sessions In a Project-Based School Collaborative Planning Sessions In a Project-Based School. [https://scholarworks.gsu.edu/cgi/view-content.cgi?article=1047&context=ece\\_diss](https://scholarworks.gsu.edu/cgi/view-content.cgi?article=1047&context=ece_diss)
- [12] S. Chanunan and M. Brückner. Digital literacy of higher education instructors in Thailand. [https://so06.tci-thaijo.org/index.php/edujournal\\_nu/article/view/144949/143092](https://so06.tci-thaijo.org/index.php/edujournal_nu/article/view/144949/143092)
- [13] R.L. Tyger. Teacher Candidates' Digital Literacy and Their Technology Integration Efficacy. <https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1557&context=etd>
- [14] G. Tongpasuk. Needs Assessment for Development of Knowledge in Information and Communication Technology of New Graduates: Bachelor of science in technical education program (electrical engineering), King Mongkut's university of technology North Bangkok. <https://ph01.tci-thaijo.org/index.php/JIE/article/download/193295/163604/>