Promoting People Potential for Digital Village Development in Mahasarakham

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ABSTRACT

The objectives of this research were: 1) to develop a model of promoting the potential of people in the digital field towards the development of digital villages (PDG) in Mahasarakham, Thailand; 2) to develop a course of promoting PDG in Mahasarakham; 3) to promote PDG in Mahasarakham; 4) to monitor and evaluate the development of digital villages in Mahasarakham. The sample consisted of 1) 300 volunteer digital ambassadors classified into: 1.1) 65 people, 1.2) 130 youths and 105 students of the Faculty of Information Technology, Rajabhat Mahasarakham University; 2) 1,300 people from 13 communities in Mahasarakham, 100 people per community. The research results indicated that 1) the model consisted of 4 steps: 1.1) the procedure for determining the steps for promoting the potential of the people in the digital field; 1.2) curriculum development process for enhancing people's potential in digital field; 1.3) the process of promoting the potential of people in the digital field; and 1.4) the follow-up process for evaluation of digital village development. 2) A 6-hour digital public potential promotion course consisting of 9 topics; 2.1) Rights and responsibilities in the digital age; 2.2) Digital access; 2.3) Communication in the digital age; 2.4) Security in the digital age; 2.5) Media and information literacy; 2.6) Practices in a digital society; 2.7) Good health in the digital age; 2.8) digital commerce; 2.9) Digital Law. 3) The results of the potential development of people in the digital field were as follows: 3.1) 300 "Volunteer Digital Ambassadors" had 63.79% level of knowledge, understanding and skills and overall satisfaction at the highest level ($\bar{x}$ = 4.52 and SD = 0.51) and 3.2) 1,300 people had the knowledge, understanding and skills of 64.87% and had the highest overall average satisfaction ($\bar{x}$ = 4.51 and SD. = 0.53). 4) The results of the digital village development monitoring were as follows: 4.1) The results of the preparation of the evaluation criteria consist of 7 points as follows: 4.1.1) Community knowledge and skills from capacity development training accounted for more than 60%; 4.1.2) The number of people 60 percent or more have a Smartphone; 4.1.3) The number of people 60% or more uses LINE program at least 1 hour per day; 4.1.4) The number of people 60% or more used Facebook program at least 1 hour per day; 4.1.5) The number of people 20 percent or more used Facebook or Line program as a tool to help run their own business or community enterprise groups; 4.1.6) 20% of the population or more were using online trading programs such as LAZADA or Shopee; 4.1.7) The community had a community group line for use in constructive communication within the group; 4.2) The evaluation results of digital village development in Mahasarakham Province found that all 13 communities had the evaluation results of digital villages according to the specified criteria.

Keywords

Digital, Digital villages
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Introduction

The rapid change in globalization has led to the advancement of digital technology innovation, thus increasing the convenience and enhancement of daily life activities[1]. However, in order to use digital technology effectively, people need to learn the correct and proper use of digital technology[2]. For Thailand with a policy in the Thailand 4.0 era, it is a policy vision that will transform the traditional economy into an economy driven by structural innovation. Digital technology will be the success factor[3]. In order to overcome the trap of middle-income countries to high-income countries in the era of Thailand 4.0, it requires cooperation from many parties to develop the country to its goals. Moreover, for the sustainable development of the country, people must be hopeful of having digital capabilities. But finally, the basis for human development in the digital age is Digital Literacy [4].

Thailand recognizes the importance of using digital technology for economic and social development. Therefore issued the Digital Economic and Social Development Act of 2017, aiming for the economic and social systems that have communication, production, consumption, use, distribution, commerce, electronics, electronic transactions, transportation, logistics, education, agriculture, industry, public health, investment finance, taxation, management of information and content or any other socio-economic activity or any process or operation

digitally or electronically in the broadcasting business, television business, radio communication business, telecommunication business, satellite communication business and spectrum management based on information technology infrastructure and communications, including technology that is merged or any other technology, in the same or similar way, in the most fundamental part of driving the use of digital technology for economic and social development, namely peoples or communities in the country**.** Therefore, the Digital Development for Economy and Society Act is set out in Chapter 1, Section 6, Article 6, that is to promote and support the production and development of manpower for the readiness and knowledge of digital technology, promoting and encouraging public and private agencies to use digital technology for economic and social benefits, raising awareness and being knowledgeable about media and other information along with promoting and encouraging inequality in accessing services essential to improving people's quality of life**.**

In the past, the Office of the Digital Economy and Society of Thailand [5] has developed a network of digital village centers in the fiscal year 2016 in conjunction with the Sub-District Administrative Authority of Thailand, the transformation of the former community ICT learning center to the district's Non-Formal and Informal Education center acts as a community digital center**.** The Non-Formal and Informal Education center will support places, tools and personnel, a new type of center providing digital services and economic and social information to communities and community enterprises as well as being a communication channel between the state and communities, as well as a source of information and community news for exchange of knowledge between communities and the administration and the organization of ongoing economic activities such as digital literacy, opening an online store, improving products /services, communication, public relations via digital media along with organizing a lifelong learning environment that facilitates learning anytime, anywhere on the device to educate people to be digital literacy and leveraging digital technology for occupation and livelihoods as the foundation of sustainable development [5]**.**

Mahasarakham Province is one of the provinces that has been developed and improved the ICT learning center of the old community into a digital village center**.** Most of the centers are installed in approximately 20 local government organizations and the Pracharat Internet is installed in all districts of Mahasarakham Province**.**However, when studying the survey results on the state of media and information literacy of Thailand 2019 by the Office of the National Digital Economy and Society [6], it was found that it was at the level of fundamental improvement**.** Overall, there is a lower level than that of a country, as shown in the figure**.**

As a result of the assessment of the status of Mahasarakham Province, it was found that the trends of digital understanding and media and information literacy were in the phase that needed to be developed, especially in the area where the Pracharat Internet is installed in many villages of Mahasarakham Province**.** In 2019, there is a total of 898 internet installed in the Pracharath district in Mahasarakham Province**.** Citizens have the ability to access technology and infrastructure readily available such as wireless internet (WiFi**)**, public internet (Free WiFi**)**, a comprehensive and modern carrier network that allows people to use digital technology but lack the knowledge and skills to use them to be useful and efficient**.** It can be said that human resources are insanely aware of the existence and use of digital technology in the best interests of oneself and others [6].

From the above conditions, the researchers have interested in developing digital communities (Digital Village**)** in Mahasarakham Province to promote the use of digital in a creative way and benefit livelihood and society**."** It is expected that the implementation of the project will promote the community to apply digital technology to trade in goods and services, while reducing the burden of public relations for the community, gathering information, knowledge, local wisdom and promoting exchange and learning between communities and being the center of the community by doing various activities together to lead to a dependable coexistence, having good relationships with each other, building reconciliation and social immunity to strengthen from the foundations to be the foundation of sustainable development of the country**.**

Research Objectives

The objectives of this research were as follows: 1) to develop a model for promoting PDG in Mahasarakham; 2) to develop a curriculum for promoting PDG in Mahasarakham; 3) to promote PDG in Mahasarakham Province; 4) To monitor and evaluate the development of digital villages in Mahasarakham**.**

Research Methods

Research instruments:

1) A curriculum for promoting PDG in Mahasarakham

2) The satisfaction questionnaire of the sample who received volunteer digital ambassador training

3) Public Satisfaction Questionnaire in Digital Field Training

Sample:

1) People from 13 sub-districts 100 people each, total 1,300 people as follows:

No.	Sub-district	District	Number
1	Si Suk	Kantharawichai	**100**
2	Nong Mek	Na Chueak	**100**
3	Don Ngua	Borabue	**100**
4	Kham Rian	Yang Sisurat	**100**
5	Mek Dam	Phayakkhaphum Phisai	**100**
6	Suea Kok	Wapi Pathum	**100**
7	Tha Tum	Mueang	**100**
8	Chuen Chom	Chuen Chom	**100**
9	Nong Kung	Kae Dam	**100**
10	Nong Son	Chiang Yuen	**100**
11	Dong Bang	Na Dun	**100**
12	Wang Yao	Kosum Phisai	**100**
13	Kut Rang	Kut Rang	**100**

2) A group of 300 digital ambassadors consisting of 105 Rajabhat Mahasarakham University students, 130 youth in the community who studied at nearby schools or in remote schools but stayed in the community and 65 people in the community with digital knowledge and skills or academic knowledge.

Research procedures:

The research procedures were carried out in 4 phases**.**

Phase 1: The development of a model for promoting PDG in Mahasarakham was conducted in following steps:

Step 1: Study relevant research papers, such as the scope of digital status measurement according to the criteria of the Office of the Digital Economy and Society, curriculum development and implementation of the civil state approach, implementation of innovative approaches, and community participation

Step 2: Go to the community area to study the ways of the community, the context of the community, the condition of the community, and the problem of the needs of the community in order to be a framework for digital community development.

Step 3: Seminar for community leaders in Mahasarakham Province to study guidelines for community development towards digital village.

Step 4: Take the information studied from relevant documents and research from the community outreach and community seminars leading to the development of a digital capability enhancement model and the development of digital villages in Mahasarakham.

Step 5: Seminar with experts to discuss the digital capability enhancement model to digital village development in Mahasarakham Province.

Step 6: Summary of model development results.

Phase 2: The development of a curriculum for promoting PDG in Mahasarakham was carried out by the following steps.

Step 1: Study relevant research papers, including the Digital Understanding Curriculum Framework for Thailand, 2019 and a format for promoting the potential of people in the digital field leading to the development of digital villages in Mahasarakham.

Step 2: Bring the study information to the development of a curriculum for enhancing people's digital potential and digital development in Mahasarakham.

Step 3: Seminar on experts to criticize a curriculum for enhancing the potential of people in digital field towards digital village development in Mahasarakham.

Step 4: Summary of the development of a curriculum for promoting the potential of people in the digital field towards the development of digital villages in Mahasarakham.

Phase 3: The promotion of the potential of people in the digital field was carried out by the following steps.

Step 1: Organize training for 300 **"**Volunteer Digital Ambassadors**"** to acquire knowledge and skills according to the developed curriculum**.**

Step 2: Conducted 300 volunteer digital ambassadors to test the status of media and information literacy in accordance with the criteria of the Office of the Digital Economy and Society**.**

Step 3: Organize a seminar **"**Digital Volunteer Ambassadors**"** to define a framework for target group development, planning, working calendar and the role of 'Volunteer Digital Ambassador'**.**

Step 4: Coordinate target communities to organize media and information literacy testing activities according to the curriculum developed for 13 communities from 13 districts, divided into 100 communities, totaling 1,300 people**.**

Step 5: 'Volunteer Digital Ambassadors' will organize activities to promote the potential of people in the digital field as determined by the community, at the time and place in each community that 'Volunteer Digital Ambassador' is responsible for**.**

Step 6: Test the public image and media literacy status of 13 communities from 13 districts**.**

Step 7: Summary of operating results

Phase 4: Monitoring and evaluating the development of digital villages in Mahasarakham Province

Step 1: Organize a seminar for community leaders in Mahasarakham to determine criteria for evaluation of digital village development in Mahasarakham**.**

Step 2: Coordinate with target communities to organize digital village development assessment activities in Mahasarakham, totaling 13 communities from 13 districts**.**

Step 3: Visit the community area to study information on digital applications for economic and social development**.**

3**.**4**.**4**)** Summary of operating results**.**

The statistics used in the research were: Percentage, Mean and Standard Deviation**.** The results were compared with the evaluation criteria as follows:

4**.**51 - 5**.**00 refers to the highest level**.**

3**.**51 - 4**.**50 refers to the high level**.**

2**.**51 - 3**.**50 refers to the moderate level.

1**.**51 - 2**.**50 refers to low level.

1**.**01 - 1**.**50 refers to lowest level.

Research Results

The results of the development of a model for promoting PGD in Mahasarakham: in Phase 1, the researchers have worked to develop a digital capability enhancement model to develop digital villages in Mahasarakham, as shown in Figure 1**.**

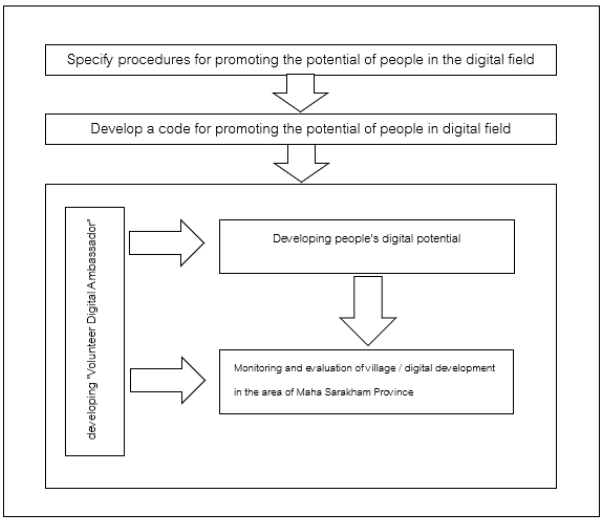

Figure 1: **Model for enhancing people's potential in digital field**

From Figure 1, the model for promoting people's potential in the digital field consists of 4 steps**:**

Step 1: The procedure for determining the steps for promoting the potential of the people in the digital field is a process for the development of a model which consists of 5 sub-steps as follows: 1**)** Study research documents related to the development of the model and the context of the relevant community; 2**)** Go in the community area to study the way of the community, the context of the community, the condition of the community, and the problem of community needs; 3**)** Seminar with community leaders in Mahasarakham Province to study guidelines for community development towards becoming a digital village; 4**)** Take the information studied from the document**.** Related research from community

outreach and community. seminars to develop a digital capability enhancement model; 5**)** Seminar on experts to criticize the digital capability enhancement model.

Step 2: The development phase of the digital capability enhancement curriculum consists of 3 sub-steps as follows**:** 1) Study research documents related to the various curriculum development; 2**)** Take the information studied to develop a curriculum for enhancing people's potential in digital fields; 3**)** Seminar on experts to criticize the curriculum for enhancing people's potential in digital field**.**

Step 3: The process of promoting people's potential in the digital field consists of 3 sub-steps as follows**:**1**)** Organize training for **"**Volunteer Digital Ambassadors**"** to acquire knowledge and skills according to the developed curriculum; 2) 'Volunteer Digital Ambassadors' will organize activities to promote the potential of people in the digital field; 3**)** Test the state of media and information literacy**.**

Step 4: The digital village development monitoring process consists of 3 sub-phases as follows**:** 1**)** Organize a seminar for community leaders to determine criteria for evaluation of digital village development; 2**)** Coordinate target communities to organize digital village development assessment activities; 3**)** Visit the community area to study information on digital applications for economic and social development**.**

Results of the development of a curriculum for PGD in Mahasarakham Province: in Phase 2, the researchers have developed a curriculum for promoting the potential of people in the field of digital to the digital village development in Mahasarakham Province with the following details**.**

1) Content

1) Rights and responsibilities in the digital age

2) digital access

3) Communication in the digital age

4) Security in the digital age

5) Media and information literacy

6) Guidelines in a digital society

7) Good health in the digital age

8) Digital commerce

9) Digital Law

2) The training activities will take 6 hours as detailed in Table 1.

List of Topics	Duration (minutes)		
	Lecture	Practice	Self-study
Describe the course subject and course objectives	1**0**	-	-
Rights and responsibilities in the digital age	2**0**	-	-
Digital access	2**0**	-	**30**
Communication in the digital age	-	2**0**	**30**
Security in the digital age		30	**30**
Knowledge of media and information		60	**60**
Practices in a digital society		40	-
Healthy in the digital age		40	-
Digital Commerce		40	**60**
Digital Law		40	-
Evaluate digital understanding **(**after study**)**	-	**40**	-

Table 1 Training activities

The results of promoting PGD in Mahasarakham are as follows:

1) The development results of 'Digital Volunteer Ambassadors' of 300 people are detailed below**.**

1.1 The knowledge measurement results of Digital Volunteer Ambassadors were measured from 100 questions, representing the percentage of correct answers as shown in Table 2.

Sample	Number (person)	Knowledge level (Percentage)
Students of Rajabhat Mahasarakham University	**105**	**63.00**
Youth in the community	**130**	**64.81**
People in the community	**65**	**63.56**
Overall Average		**63.79**

Table 2: Knowledge measurement results of 'Digital Volunteers'

1.2 The satisfaction results of the 'Digital Volunteer Ambassadors' were measured from the satisfaction questionnaires as shown in Table 3 (See Appendix).

2) The results of the potential development of 1,300 people in digital fields are detailed as follows.

2.1 The results of the public knowledge in the digital field, measured from 35 questions and representing the percentage of correct answers, as shown in Table 4.

No.	Sub-district	District	Number	Average percentage
1	Si Suk	Kantharawichai	100	61.67
2	Nong Mek	Na Chueak	100	66.67
3	Don Ngua	Borabue	100	68.34
4	Kham Rian	Yang Sisurat	100	63.33
5	Mek Dam	Phayakkhaphum Phisai	100	63.33
6	Suea Kok	Wapi Pathum	100	70.00
7	Tha Tum	Mueang	100	63.33
8	Chuen Chom	Chuen Chom	100	66.67
9	Nong Kung	Kae Dam	100	68.33
10	Nong Son	Chiang Yuen	100	71.67
11	Dong Bang	Na Dun	100	60.00
12	Wang Yao	Kosum Phisai	100	63.34
13	Kut Rang	Kut Rang	100	64.87

Table 4: Results of the digital knowledge measurement results of the people

2.2 The results of the public satisfaction study are measured from the satisfaction questionnaire as shown in Table 5 (See Appendix).

Evaluation results for digital village development in Mahasarakham Province:

1) Results of the Evaluation Criteria for Digital Village Development in Mahasarakham Province: the researchers conducted a seminar with community leaders and university scholars to jointly develop the criteria for a digital village that fit the context of the community. The communities in Mahasarakham Province are as follows:

1.1 The knowledge and skills of the community from the capacity development training is more than 60% or more.

1.2 60% or more of people have Smartphones.

1.3 60% or more of people used LINE Application at least 1 hour per day.

1.4 60% or more of people used Facebook at least 1 hour per day.

1.5 20% or more of people used Facebook or Line as a tool to help run their own business or community enterprise groups.

1.6 20% or more of people use online trading programs such as LAZADA or Shopee.

1.7 The community has a community group line for constructive communication within the group.

2) Evaluation results for digital village development in Mahasarakham Province - The researchers applied the 'digital village' criteria that were jointly created in 13 communities, along with collecting data according to the criteria and analyzing the results as shown in Table 6 (See Appendix).

Discussion

To promote the potential of digital citizens towards the development of digital villages in the area of Mahasarakham Province, it can be considered effective performance, this is because the researchers have adopted the strategy of "Digital Volunteer Ambassadors" who live in the area and have high digital knowledge skills. They also have the ability to provide continuous and effective assistance and advice to people in the community. This is consistent with the development of digital governance curriculum for Thailand in 2019[4] and the development in the United Nations (UNESCO – UN), Sustainable Development Goals-SDGs with 17 goals of Sustainable development which mentions that understanding digital will be one of the sub-goals of sustainable development, which is included in Goal 4.4.22 [7]: digital comprehension skills are one of the most important skills in developing a country towards sustainability and leading to careers and business competencies, the mission of the Ministry of Digital Economy and Society to develop and update the curriculum to keep up to date with the digital age in terms of rights and responsibilities, digital media access, digital communication, digital security, media and information literacy, digital social practice, digital health, digital commerce and digital law.

Suggestions

Further research should develop public knowledge and skills in digital marketing so that people can apply their knowledge and skills continuously and effectively in economic applications and benefit the community in terms of sustainable income enhancement.

Appendix

Satisfaction	Students			Youth			People		
	$\bar{X}$	S.D.	Interpretation	$\bar{X}$	S.D.	Interpretation	$\bar{X}$	S.D.	Interpretation
1. Learning about digital rights and responsibilities will help to understand digital citizens' rights and to understand responsibility online in the **21**st century, while being able to transfer knowledge and skills.	4.71	0.46	highest	4.56	0.58	highest	4.54	0.62	highest
2. Learning about digital accessibility will enable you to understand the fundamental principles of data and information, and to get to know the Internet and other systems, and to bring knowledge and skills to pass on.	4.64	0.48	highest	4.65	0.48	highest	4.63	0.49	highest
3. Learning digital communication will help to understand the key principles of communication, digital communication or social media communication, while bringing knowledge and skills to pass on.	4.52	0.50	highest	4.48	0.55	high	4.52	0.50	highest
4. Learning digital security will provide you with a basic knowledge of security from malicious people in the Internet and social networks, correctly and safely, and to transfer knowledge and skills.	4.55	0.62	highest	4.58	0.60	highest	4.56	0.62	highest
5. Media and information literacy will help to understand the basic principles of media and media service providers, concepts of media and information literacy, critical analysis, interpretation, evaluation, conclusion, separation between facts and opinions, evaluating the value of media and information, being aware of fake news and bringing knowledge and skills to pass on.	4.40	0.49	high	4.38	0.49	high	4.43	0.50	high
6. Learning digital society practices will help you to learn internet etiquette, telephone etiquette in public areas, and caring for others while bringing knowledge and skills to pass on.	4.34	0.48	high	4.35	0.48	high	4.35	0.48	high
7. Healthy learning in the digital age will help to recognize the dangers and impacts on various aspects of health, whether it be physical health, mental health, and possible diseases, while applying knowledge and skills to pass on.	4.60	0.49	highest	4.53	0.52	highest	4.59	0.50	highest
8. Learning digital commerce will help to gain a general knowledge of digital commerce including definition, meaning, composition, importance, characteristics, process and the model of buying-selling products in digital commerce with knowledge and skills to be passed on.	4.53	0.50	highest	4.53	0.52	highest	4.54	0.50	highest
9. Learning digital law will help you understand the laws related to intellectual property and laws related to the digital economy, while applying knowledge and skills to pass on.	4.54	0.50	highest	4.52	0.50	highest	4.54	0.50	highest
Overall average for each type	**4.54**	**0.50**	**highest**	**4.52**	**0.50**	**highest**	**4.54**	**0.50**	**highest**
Overall Average							**4.52**	**0.51**	**highest**

Table 3 The results of the "Digital Volunteer Ambassadors" satisfaction measurement.

Satisfaction	level		
	$\bar{X}$	S.D.	Inter.
1. Learning Digital Age Rights and Responsibilities will help realize digital citizens' rights and understand responsibility online in the **21**st century.	4.58	0.56	highest
2. Learning digital access to understanding fundamentals of data and information, Internet systems, etc.	4.40	0.49	high
3. Learning digital communication will give you the essential principles of communication, communication in the digital age or social media communication.	4.50	0.55	highest
4. Learning digital security will provide a general knowledge of the security comes from malicious people in the internet, social networking world, accurately and safely.	4.59	0.60	highest
5. Media and information literacy will provide you with basic principles of media and media service providers, concepts of media and information literacy, analysis, criticism, interpretation, evaluation, conclusion, distinguishing between facts and opinions and evaluating the value of media and information and knowing fake news.	4.51	0.50	highest
6. Learning digital society practices will help you to learn etiquette for using the internet and phone etiquette in public areas and caring for others, while also bringing knowledge and skills to pass on.	4.37	0.48	high
7. Digital health education will help to recognize the dangers and impacts on various aspects of health, be it physical health, mental health, and potential disease.	4.54	0.51	highest
8. Learning digital commerce will help to gain a general knowledge of digital commerce including, definition, meaning, composition, importance, characteristics, the process and patterns of digital commerce buying and selling.	4.55	0.50	highest
9. Learning digital law will help you to know the laws related to intellectual property and laws related to the digital economy.	4.53	0.50	highest
Overall average	**4.51**	**0.53**	**highest**

Table 5 Results of the satisfaction study of the people who received the training

No.	Sub-district	District	Criteria for "Digital Village"							Evaluation results
			1	2	3	4	5	6	7	
1	Si Suk	Kantharawichai	✓	✓	✓	✓	✓	✓	✓	Pass
2	Nong Mek	Na Chueak	✓	✓	✓	✓	✓	✓	✓	Pass
3	Don Ngua	Borabue	✓	✓	✓	✓	✓	✓	✓	Pass
4	Kham Rian	Yang Sisurat	✓	✓	✓	✓	✓	✓	✓	Pass
5	Mek Dam	Phayakkhaphum Phisai	✓	✓	✓	✓	✓	✓	✓	Pass
6	Suea Kok	Wapi Pathum	✓	✓	✓	✓	✓	✓	✓	Pass
7	Tha Tum	Mueang	✓	✓	✓	✓	✓	✓	✓	Pass
8	Chuen Chom	Chuen Chom	✓	✓	✓	✓	✓	✓	✓	Pass
9	Nong Kung	Kae Dam	✓	✓	✓	✓	✓	✓	✓	Pass
10	Nong Son	Chiang Yuen	✓	✓	✓	✓	✓	✓	✓	Pass
11	Dong Bang	Na Dun	✓	✓	✓	✓	✓	✓	✓	Pass
12	Wang Yao	Kosum Phisai	✓	✓	✓	✓	✓	✓	✓	Pass
13	Kut Rang	Kut Rang	✓	✓	✓	✓	✓	✓	✓	Pass

Table 6 Evaluation results of digital village development in Mahasarakham Province.

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