Evaluation of the Teacher Development Project for the Local Development Scholarship Program in Northern Thailand

Wilawan Phothong
University of Phayao

Danulada Jamjuree
Srinakharinwirot University

Montree Yamkasikorn
Teacher's Council of Thailand

This mixed-method study aimed to evaluate the Teacher Development Project for Local Development (TDPLD) program in northern Thailand from 2016-2020. The aspects of evaluation included outputs, outcomes, and impacts in various dimensions. Ten groups of 3,041 individuals were identified for sampling using voluntary selection, purposive sampling, and snowball sampling techniques. Qualitative research methods were used on 702 participants, while quantitative means were employed on 2,339 informants. The results revealed that before entering the TDPLD development course, individuals exhibited a high level of competency in local development. Further analysis also showed that during each participant's induction period (the period before employment as a teacher), they gained the necessary knowledge that could be used to create tangible learner development. Unfortunately, promises of hometown teaching assignments were sometimes not kept. A common thread throughout the study was the need for English language skills preparation and funding. The study contributes significantly to the literature because it is one of Southeast Asia's most extensive teacher development studies ever undertaken.

Keywords: community teacher evaluation, MHESRI, Northern Thailand, project evaluation, TDPL

INTRODUCTION

For many years, Thailand has done its best to produce and select quality teachers to solve various issues relating to its education system. One innovation that was implemented by Thailand's Office of the Higher Education Commission (OHEC) was the creation of the *Teacher Development Project for Local Development* (TDPLD) 2016-2029 (Prachanban & Prachanban, 2021; Techawattanasiridumrong, 2022; Trajoonosot & Tulmethakaan, 2021). The goal was to select excellent and talented student teachers to study in the limited quota TDPLD program. Another goal of the TDPLD program was to ensure that enough teachers were assigned to Thailand's numerous rural educational districts (Equitable Education Fund, 2021).

The Thai cabinet approved the TDPLD program on March 29, 2016, in response to a national policy statement announced by General Prayut Chan-o-cha, Thailand's Prime Minister. In his speech in September 2014, he stated that Thailand needed to "*Develop the teacher development system for better quality and teaching spirit*" (National Legislative Assembly, 2014, page 7). Moreover, the Prime Minister emphasized using qualified teachers in subjects they were trained for. He also stated that teacher self-education should be supported with appropriate information communication technology (ICT), long-distance learning, and e-learning. Finally, he mentioned the need for the adjustment of the teacher evaluation system and the development of the quality of learners.

These ideas are also supported by a similar teacher development program in Thailand under Her Royal Highness Princess Maha Chakri Sirindhorn's patronage, which sponsors scholarships for in-service teachers who do not have formal educational qualifications (Equitable Education Fund, 2021). Examples of these individuals include teachers in remote and rural Border Patrol Police Schools and informal and non-formal education offices. After a period of distance learning, they are awarded a teaching diploma upon completion.

This TDPLD program also accepted student teachers into two different programs, including a five-year Bachelor's degree for Teacher Program, open to students with a high school diploma, vocational certificate, or equivalent. The second track consisted of a Teacher Vocational Certificate Program, open to graduates with a Bachelor's degree in all disciplines (except teaching professional graduates).

Under the TDPLD programs, student-teacher scholarship recipients would receive added training in two phases. These included extra-curricular activities designed to equip teachers with crucial skills and desirable attributes, known as the *Enrichment Program*. Another phase was the *Induction Program*, a two-year induction, and development program for new scholarship teachers who were also simultaneously appointed officially as *Assistant Teachers*.

Under these programs, it was also desired that the teacher's career path must be considered and that a responsible provincial institution needed to supervise the new teacher's development. Goals included enhancing academic capabilities, and their professional potential, participating in a professional learning community (PLC) and creating cooperative networks between teachers that could lead to local development (Awases et al., 2015; Chookhampaeng & Chookhampaeng, 2020; Kanawapee et al., 2022).

However, after years of TDPLD funding and operation, the *teacher development system* project was postponed in 2019, and the enrollment of new scholarship students was terminated (Book of the Office of the Basic Education Commission No. SorThor. 04009/ Wor 6013 dated September 30, 2019). Fortunately, a decision was made to determine the effectiveness of the project for a potential restart.

Therefore, this research represents the results of the analysis of 3,368 student-teachers (study population) who were on scholarship and were participating in the TDPLD project in Northern Thailand at the time of the project's termination. This study's objectives include accounting for the success and worthiness of the project, which can then lead to appropriate decisions about the project, including its review, improvement, and restart.

Finally, the study's objectives were determined to be:
1) To evaluate the performance of TDPLD projects in Northern Thailand regarding output, outcome, and impacts on local development in various dimensions.
2) To evaluate the overall performance of TDPLD projects in Northern Thailand.
3) To evaluate the TDPLD project performance in Northern Thailand in terms of the efficiency and effectiveness of its project management.

Research Conceptual Framework (RCF)

This research mainly uses objective-oriented approaches combined with the conceptual framework of the Kirkpatrick Model (Cahapay, 2021; Thepha et al., 2021; Trajoonosot & Tulmethakaan, 2021). This framework examines whether the expected outcomes have been achieved (Figure 1). The designed frameworks are as follows;
  – *RCF 1*: Evaluation of project implementation in terms of outputs, outcomes, and impacts on TDPLD projects in various dimensions (Trajoonosot & Tulmethakaan, 2021).

– *RCF 2*: Evaluation of project implementation in terms of output, outcomes, and impacts on the development of the TDPLD system, as well as enhancing Thailand's education quality.
– *RCF 3*: Evaluation of project implementation in terms of project management to enhance the efficiency and effectiveness of the project implementation in the next phase.
– *RCF 4*: Evaluation of project implementation in terms of cost-effectiveness and response to national development goals.

FIGURE 1
THE KIRKPATRICK MODEL
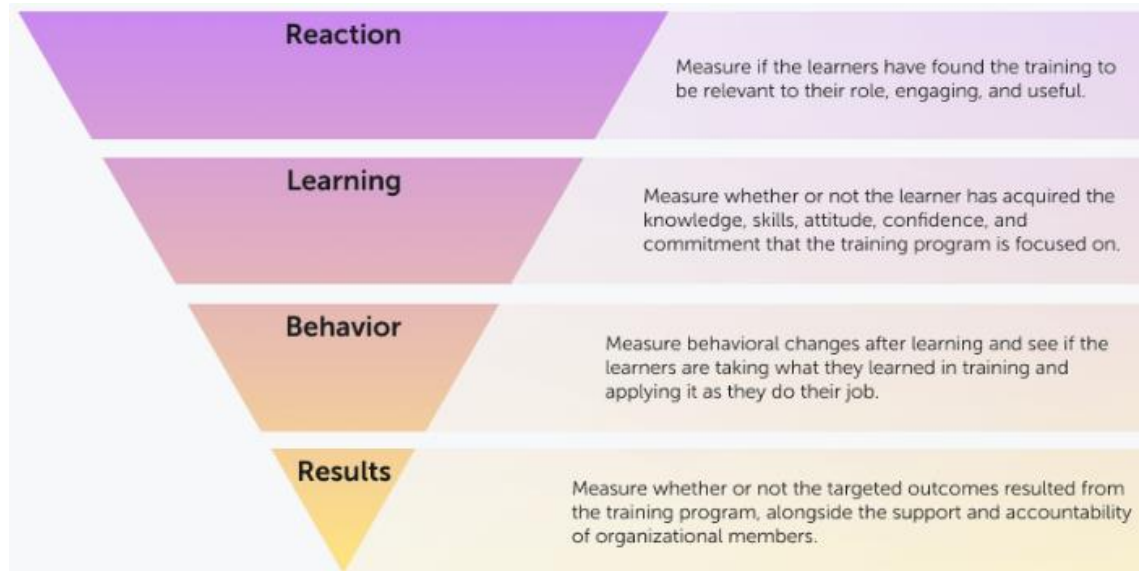
Source: Adapted from Cahapay (2021).

MATERIALS AND METHODS

This evaluation research used mixed-methods research (Chih-Pei & Chang, 2017; Gregar, 2014). It is a convergent design primarily used for collecting qualitative data and using quantitative data as a secondary method. The research collected qualitative data until the data was saturated, while the quantitative data was used to validate the qualitative data (Creswell & Creswell, 2018; Johnson et al., 2007). The details are as follows:

Sample Information and Target Groups

Table 1 shows ten groups of 2,339 individuals selected to participate in this study's quantitative analysis for the Teacher *Development Project for Local Development* (TDPLD) project in Northern Thailand from 2016 to 2020. Another 702 individuals, categorized into ten groups, were also selected for this study using purposive sampling for the qualitative analysis of the study. The group of 2,339 was selected using voluntary selection and a word-of-mouth selection process (snowball sampling technique) (Ngwakongnwi et al., 2014). These totals represent 3,041 individuals from 17 Thai provinces in both upper and lower areas of Northern Thailand.

TABLE 1
NUMBER OF INFORMANTS/TARGET GROUPS CLASSIFIED BY DATA TYPE

Group	Participants	Data Type	
		Qualitative (n)	Quantitative (n)
Group 1	Graduates who received a TDPLD scholarship.	25	115*
Group 2	College students who received TDPLD scholarships.	34	-
Group 3	High-ranking representatives/administrators from a Faculty of Education.	6	-
Group 4	University lecturers and supervisors.	13	21*
Group 5	High-level educational area administrators and study supervisors.	6	5**
Group 6	Executive school administrators.	6	85*
Group 7	Colleagues or supervisors of scholarship recipients.	4	480*
Group 8	Representatives from parents' groups or related teacher communities who received scholarships.	120	64***
Group 9	Students who have studied with TDPLD scholarship teacher graduates.	486	1569*
Group 10	University support staff.	2	-
	Total (3,041)	702	2,339

Note. *Voluntary selection, **Purposive sampling, ***Snowball sampling technique

Research Tools

The ten toolsets under the conceptual framework used for this research were tested for content validity (CV) by five academic experts (Chuenban et al., 2021; Taherdoost, 2016) (Table 2). Numerous studies have suggested the use of the index of item-objective congruency (IOC) as an assessment tool for content validity checking (Turner & Carlson, 2003). Typically, items with values of $\leq .50$ are deleted or revised (Taherdoost, 2016). After this process, the authors were pleased to determine that the final questionnaire had IOC values of $0.67 – 1.00$.

TABLE 2
LIST OF EXPERTS REVIEWING THE STUDY'S QUESTIONNAIRE

Expert	University	Subject Expertise
Associate Professor Dr. Thayata Rattanaphinyowanich	Department of Psychology and Guidance, Faculty of Education, Bansomdejchaopraya Rajabhat University, Bangkok, Thailand	Expertise in psychology, research, measurement, and educational statistics.
Assistant Professor Dr. Phonraphee Thummaphan	Faculty of Learning Sciences and Education, Thammasat University, Thailand/ Deputy Secretary General of the Teachers Council of Thailand	Expertise in measuring and evaluating educational results and performance-based assessments.
Assistant Professor Dr. Piyaporn Phitchayapirath	Department of Curriculum, Development, and Instruction, Ubon Ratchathani Rajabhat University, Thailand	Expertise in curriculum and teaching

Expert	University	Subject Expertise
Assistant Professor Dr. Jakkrit Jantakoon	Department of Education, Faculty of Education, Naresuan University, Tha Pho, Phitsanulok, Thailand	Expertise in curriculum and teaching
Dr. Wannakorn Phornprasert	School of Education, University of Phayao, Phayao, Thailand	Expertise in measuring and evaluating educational and research results.

The ten tool sets were composed of issues for group discussion. These included a Teacher Competency Assessment (TCA) Form, semi-structured interviews for in-depth interviews, and a questionnaire for evaluating the TDPLD for each scholarship student's educational institute. Other tools included a questionnaire for assessing the impact of each scholarship student's curriculum performance for each local government project and a stakeholder satisfaction questionnaire concerning the scholarship teacher which whom the stakeholder interacted with. Stakeholders were defined as the Dean/Associate Dean in each University's Faculty of Education, parents, directors/supervisors of each education service area, coaching teachers, lecturers/professors in each Faculty of Education, and the student-teachers (Sittisak et al., 2022).

Data Collection
Data collection was done by coordinating with the university responsible for each TDPLD scholarship teacher and direct contact with each scholarship student teacher. Some target groups were contacted through scholarship teachers who could reach out to other groups. The researchers also conducted personal interviews. When personal interviews were not possible, data was collected from online questionnaires.

Ethics Clearance
The Ministry of Higher Education, Science, Research and Innovation (MHESRI) funded this research project, with Thaksin University serving as the primary host institution. The researchers were given a certificate of research ethics before starting their study. Following acceptance, the researchers used information from various channels to outline the project aims to collect data from all the volunteer groups in the TDPLD project. Every detail has been kept private, with only the alpha/numeric identifier used in the research as a personal code number.

Data Analysis and Statistics
The research team divided the data analysis into two parts:
1) The qualitative data from the online questionnaire, interviews, and group discussions were analyzed using the content analysis method (Bengtsson, 2016). The trustworthiness of qualitative data used four sub-criteria, including confirmability, dependability, credibility, and transferability (Korstjens & Moser, 2018).
2) For quantitative data analysis, Excel and SPSS 16 were used. Descriptive statistics included the frequency, percentage, mean, and standard deviation (SD).

RESEARCH RESULTS

The results are presented according to the research objectives in the following. Also, each stakeholder participating in the research was assigned an alphanumerical value to ensure confidentiality throughout the research project.

Research Objective 1 - The Evaluation Results of the TDPLD Project's Performance using Output, Outcome, and Impacts on Local Development in Various Dimensions.
Output
Before beginning work in school, 87.83% of scholarship teachers expressed positive ideas, ideologies, and inspirations (spirit) for local social, economic, and cultural changes. A sample interview quote with

T68 was: *"From the beginning, I have been determined to develop my students as 21st-century learners, which is to be smart, good, and happy, as well as focus on developing their intelligence, behavior, and thinking abilities to become good citizens of society and the country in the future."*

On the aspect of student-teachers scholarship recipients who received support from the local TDPLD projects, the qualitative and quantitative data analysis suggests that both types of data reflect result correlation in the same direction. Also, the data suggest that the stakeholders viewed the TDPLD scholarship teachers at a high to the highest level of competency. A sample interview quote with S2 was: *"As far as I can see, (the scholarship teachers) are eager to learn and are good representatives of scholarship students. I also feel that the scholarship teachers showed greater knowledge and capability than others."*

Quantitative data from 83 questionnaire respondents reflect that the two groups reflected the highest teacher competency toward scholarship recipients. These were teachers' colleagues (4.69%) and school administrators/executives (4.68%). However, educational service area executives viewed student-teacher competency at a high level (4.29%).

Outcome

When the stakeholders were asked about each TDPLD student-teacher's contribution to the local school and community's sustainable change (social, economic, and cultural aspects), the teachers, the local community, and parents showed consistent data correlation in the same direction. That is, there was positive change and improvement in the quality of learners, the schools, and the community. This change was sustainable in that it had become the culture of the school and the community. From the evaluation of the interviews given by scholarship teachers, 28.70% thought that the change was permanent.

A sample interview quote from T007 concerning change was: *"It creates permanent change in the school and community. The students have become more aware of and realize the value of their Tai Lue culture in every aspect, which complies with the six learning foundations"* (Ketsuwan, 2021; Puraprom, 2021).

Impacts

The perspectives of school administrators and the student teachers' colleagues agreed that scholarship teachers contributed to better teaching and learning management and unique education understanding. Therefore, local school enrollments increased.

The teachers also positively impacted the communities by creating courses. A sample interview quote with A1 was: "*Usually in our community, parents tend to send their children to a better school because our school is a small one. However, since we got student-teacher scholarship recipients to teach at our school, the school's reputation for teaching and learning management has improved. As the children have begun to return to the local community school, there is a good chance the school will not be closed.*"

The quantitative data analysis of the reaction, learning, and behavior levels obtained from the supervisors' and mentors' opinions revealed that their perspectives toward the TDPLD scholarship teacher project were at the *highest level* (mean = 4.81, SD=0.39). When each aspect was analyzed, it showed that all aspects were also at their *highest level.*

Also, the scholarship teacher's colleagues viewed their scholarship TDPLD colleagues at the *highest level* (mean = 4.51, SD=0.57). However, *school administrators/executives* and *school community parents* viewed scholarship students' contribution to local development creation at a *high level*, with a mean = 4.49, SD=0.58, and mean = 4.00, SD=1.25, respectively.

Research Objective 2
The Education Process for Scholarship Teachers

Overall, the analysis and interviews showed a top-down adherence to directives by local universities from Thailand's Permanent Secretary in the Ministry of Higher Education, Science, Research and Innovation (MHESRI) concerning how the TDPLD program was to be implemented. Moreover, content analysis from the informants' qualitative data revealed that the scholarship teachers had the same

development process as other non-scholarship student teachers. However, the TDPLD project contained special courses such as English skills development as prescribed by the MHESRI. These additional activities were provided both at the university and the network levels.

Furthermore, some scholarship student university activities also included additional classes/activities concerning finance, research, health, leadership, local identity, teaching professions, and fieldwork. Some universities used experiences from the TDPLD projects to improve teacher curricula which led to developing student teachers in a local community and government context. Excerpts from an interview with VD2 to support this was: *"We did activities according to the guidelines of OHEC in which there were two parts. The first part was the order from the central government for the teacher to take English classes and Teacher Professional Ethics Lessons from the Teachers Council of Thailand along with their general courses. The second part was the activities organized by Phayao University according to the objectives given by OHEC for each academic year. OHEC allowed us to organize activities by ourselves under their guidelines…where we organized activities with the main network at Chiang Mai University."*

Activities Between TDPLD University Networks
1) In conducting joint actions between TDPLD project university networks under the conceptual framework of the Kirkpatrick Model (Thepha et al., 2021; Trajoonosot & Tulmethakaan, 2021), the data showed that most of the network-level activities were online users using Zoom because of the Covid-19 pandemic in 2020 ("Faculty of Education," 2020).
2) Some network-level activities between universities were used to exchange speakers and conduct *expertise camps*. Other activities, such as seminars, were used to provide knowledge concerning TDPLD projects, building PLCs and networks between institutions, and jointly managing PLC networks (Awases et al., 2015; Chookhampaeng & Chookhampaeng, 2020; Kanawapee et al., 2022). Also, social media platforms such as Line and Facebook were used by supervisory universities to track, inform, and assist scholarship students. These joint university actions represent 'behavioral change' according to the Kirkpatrick Model. Unfortunately, the TDPLD *Enrichment Program* had marginal success and implementation, according to the interviews with the officials related to the program.

Student Teacher Learning Achievement and Satisfaction
Student Teacher Learning Achievement
1) In conducting a learning assessment from the knowledge, skills, and attitude grades of the scholarship student teachers, it was determined that the academic performance of all individuals was at a 3.00 GPA or higher, and none reported being stressed or pressured from their studies.
2) In the student-teacher behavior assessment, several factors were examined. Ranked in importance, these were spatial identity, followed by community relations, and lastly, characteristics. Only a few students indicated having behavioral changes at the same level for all three aspects.

Student-Teacher Learning Satisfaction

Examination of student-teacher learning satisfaction decided that most individuals were satisfied with the activities at the regional level, which allowed them to establish networks with new friends from different institutions/universities. Others were satisfied with the English language enhancement activities, while other students expressed that there were several activities but needed help remembering what they were. This reflects that some activities may have created little impression or satisfaction. Interview excerpts from ST13 were: *"I like regional level activities because it helps build personal networks with other student teachers from the same academic year. When we do activities in groups, we are mixed between majors and provinces, or we could unknowingly be from the same province and district but different schools."*

Academic Major Selection and Learning Management Skills of Scholarship Teachers (Group 1)
and Scholarship Student-Teachers (Group 2)

Group 1 participants are already qualified teachers who received a TDPLD scholarship. Group 2 participants are student-teachers who received scholarship money from the TDPLD program while also accomplishing their required one-year teaching internship. From the content analysis of the teacher self-assessments of their learning management knowledge and skills, the following was concluded:

1) From the interviews of 115 Group 1 individuals, 38 indicated they were confident in the selection of their *academic major selection* at the highest level (33.04%). In contrast, another 71 participants from this group indicated a high level of confidence (61.74%), and six more indicated only a medium confidence level (5.22%) in their *academic major selection*.

2) From the interviews of 115 Group 1 individuals, 31 indicated they were confident in their *learning management skills* at the highest level (26.96%). In contrast, another 78 participants from this group indicated a high level of confidence (67.83%), and six more indicated only a medium confidence level (5.22%) in their *learning management skills*.

Research Objective 3: The Results of the TDPLD Project's Performance in Terms of Project Management Efficiency and Effectiveness

Student Teacher Project Management Efficiency and Effectiveness

1) The quantitative data obtained from 115 TDPLD scholarship student teachers' interviews on the issue of assessing *leadership skills in creating change in the community* showed that 56 scholarship teachers are classified in the group as *change leaders* (48.70%) and 59 scholarship teachers were classified as *followers* (51.30%). The *follower* group members provided that they chose to follow others because they had just started to teach and were still young with little experience. On the other hand, those that assessed themselves as *change leaders* provided empirical evidence as a supporting reason that they had been awarded recognition from the local community network, educational area, or even at the national level. Some had even been assigned to be the head of a division and lead some schools' projects. Similar reflections were also obtained from conversations with the school principals.

2) The satisfaction of 120 community representatives and parents of **scholarship** teachers revealed that 62.28% of Group 8 were satisfied with the teacher at the *highest level*. This result is consistent with Group 8's qualitative interview data (Table 1), in which the representatives and parents indicated they were very satisfied with the **scholarship** teachers. They were especially satisfied with their teaching and learning management, equipping students with reading and writing literacy, and their abilities to equip students with better critical thinking skills.

3) The results also showed that the community parents' view was that there is no difference between TDPLD scholarship teachers and teachers who did not attend the project because they thought of all 'teachers' as having the same purpose. However, students' view was that 97.33% thought that scholarship teachers taught better than those that did not join the project, with only 2.26% thinking that their teaching was the same, with the remaining 0.41% not specifying any answer.

Value and Budgetary Worthiness of the Project.

Most scholarship teachers and student-teachers viewed the project as valuable and worth the budget (93.04%). They agreed with the cost-effectiveness of the 25,000-baht ($717 on 2022.12.19) funds allocated to each participant in the program. Positive comments concerning this expenditure included VD2's: *"The project invested 5000 baht per year for five years for a total of 25,000 per person. I think this is a good investment and represents the ability to create quality teachers who can be change agents that create positive development within the educational system. There needs to be a follow-up with the students who have already completed the project to get actual and practical results. However, as you know, education cannot be measured as a result of policy implemented in a single day."*

Additionally, the opinions of those *related to scholarship teachers* agreed that the project should continue as it has competent recruiting and selects qualified individuals with the ability to speak English.

Most importantly, that person is promised they can teach in their hometown if that is their choice. Examples of the comments came from A5's *"I think the government should continue to implement this project because of the high standards used in their selection testing and English proficiency testing. This means that only outstanding and quality students get selected for the program,"* and TU2's *"I agree that the project should be continued because these student-teachers when they return to their local villages, will show their love for their hometown and inspire and motivate others to develop and teach the children in their local community."*

SUGGESTIONS FOR PROJECT EXPANSION

Another aspect of the study was investigating and evaluating the project's management performance and the potential to expand it in a follow-on phase. Results from this line of questioning revealed the following:

Enhancing the Project's Efficiency and Effectiveness

When an inquiry was undertaken as to how Thailand's MHESI could enhance future TDPLD programs to enhance the project's efficiency and effectiveness, the study found that the project's outcome had achieved the project objectives and goals regarding producing quality teachers with academic capabilities. The program also gave them guidelines and principles to follow to equip them with characteristics suitable for civil servants in the local community.

Another aspect of the TDPLD program was the promise of assigning scholarship teachers to their home communities. However, it was determined that this only sometimes happened as promised, as the program's student-teachers were often sent to where they were needed, which was often great distances from their home villages. As a result, they had to wait for five years to request a transfer to their home province.

This aspect created significant negative emotions for those affected who did not respond to the project's purpose in terms of the quantity objective. In other words, the project does not meet the set quantity target, as witnessed by the statement from A2: *"In the case of assigning teachers to their home village, my friend was assigned a position to teach her subject major far away from her village and has never had the opportunity to return to her home village."*

The Recruitment Process

A common thread concerning the recruitment process was that scholarship student candidates should be selected in high school grade 12 (not university) to allow them to prepare in various subjects, especially English. Also, the criteria for English language skills should be adjusted according to each participant's major as appropriate. There should also be financial support available for English language testing because it is costly to take each assessment test multiple times (e.g., TOEFL, TOEIC, IELTS). In addition, scholarship student-teachers should be selected through a selection camp to assess all aspects of a student's quality.

Regarding *target group classification*, the informants suggested that *target group classification* should be arranged based on the development target to enhance specific quality. For example, the development of teachers should specify from the beginning which level of education the teachers will be assigned to develop and train them correctly on the needed skills and important points needed at each level. The primary school level focuses on local development, secondary schools have an academic focus, and vocational schools focus on technical skills for professional and career building.

Budget Allocation

Some informants considered that the budget should be increased, while some considered that the budget is sufficient, but the procedure needs to be faster.

Project Management

A recommendation was made to add essential courses to equip potential candidates with valuable skills needed for working in schools, such as procuring work and finance. This was done to enhance the efficiency and effectiveness of project implementation by the universities in the next phase. Moreover, the strengthening of specific competencies for each particular major was stated as essential, with the depth of the courses also suggested as being enhanced.

DISCUSSION

The TDPLD Program's Performance in Terms of Output, Outcome, and Impacts on Local Development

Overall, the TDPLD program was considered to be in line with the goals established, with research finding that 87.83% of the scholarship teachers had positive local development ideas, ideology, and inspiration before starting to teach in their assigned communities. This is likely due to continuous improvement during their studies, their teacher education, and additional outside project activities. Scholarship teachers also clearly understood the TDPLD program's goals and the associated inspirational ideology before starting to teach.

After summarizing the viewpoints of those involved in the competency of the scholarship teachers that were obtained or trained (output), the data showed that the scholarship teachers had a competency/qualification level at a *high* to *the highest level*. This data is consistent with Chatwirote's (2021) research, which reported similar results for the quality of TDPLD teacher performance and competency in Thailand's Kamphaeng Phet and Tak Provinces for both 2016 and 2017 scholarship teachers. However, Krumphals and Haagen-Schützenhöfer (2021) have noted that student-teacher gaps in content knowledge significantly affect the training situation.

On the aspect of permanent local, social, economic, and cultural changes that the scholarship teachers have contributed to the school or community and eventually become the institutions' culture (outcome), the data showed that the teachers from the TDPLD program contributed to the quality of learners, educational institutions, and their local community.

The TDPLD Program's Performance in Terms of Teacher Development Systems

1) According to the study's responses, Thailand's MHESRI needs additional preparatory courses focusing on English language skills. Furthermore, additional institutional and network activities need to be added, including activities in finance, research, health care, leadership, spatial identity, professional teaching, and more field trips.

In the research by Amatariyakul (2021), it was suggested that in addition to helping project participants know teaching and learning management, knowledge and experience should be provided to participants in the project to understand legal regulations better. Policies and strategies of relevant agencies, including the educational institution action plan, must be effective and efficient. Therefore, there is a need for constant learning and practice until proficiency and knowledge transfer are achieved.

2) On the aspect of *cooperation between the networks of teachers and development institutions in the local area,* the data showed that most network-level activities were online due to the Covid-19 pandemic, which was first reported in Thailand on January 13, 2020 (World Health Organization, 2020). This is consistent with Kanawapee et al. (2022), who pointed out the growing importance of online professional learning communities in the competency development of teachers. Wannapiroon and Pimdee (2022) have also noted the importance Thailand's current national strategy plan places on school learning communities (SLCs) at the core of helping with local community development and the creation of competency-based education.

Also, due to changing global trends in online education, even before the COVID-19 pandemic, new technologies are dramatically changing the educational landscape. Therefore, new educational models need to be explored and implemented in which digital devices and platforms are used with the newest generation of cloud-based educational tools (Moto et al., 2018; Ruenphongphun et al., 2022; Sittisak et al., 2022).

Newer pedagogies that have also been identified as being particularly effective or being frequently explored in online learning are the flipped classroom, blended learning, problem-based learning (Srakaew et al., 2021), and gamification (Sarapak et al., 2022).

Often cited examples of digital devices are smartphones, social media platforms such as Line and Facebook, multi-media platforms such as YouTube and Khan Academy, learning management systems (LMS) such as Moodle Cloud, Schoology, and Google Classroom (Moto et al., 2018; Sittisak et al., 2022).), and programs such as Nearpod for interactive lessons and gamification (Ruenphongphun et al., 2022).

3) From the study's analysis on the success of the TDPLD program's implementation of the *Enrichment Program* guidelines by each teacher institution and the local community networks, it was determined that there was a very marginal success as only a few organizations implemented the prescribed guidelines. The authors speculate this may be due to the teacher development institute's primary focus on implementing the project according to specified MHESI indicators.

This is also in combination with the fact that the TDPLD program uses the same system as general teacher development, and some universities see a need to increase supporting budgets. For this reason, there has not been any transparent development system nor sufficient consequences to create systematic changes in the teacher development system at the institution/university level.

4) On the aspect of *assessing the level of knowledge, learning management skills, teacher attributes and values, and working performance of the scholarship teachers following the goals of the project*, it was found that most of the scholarship teachers had both knowledge and learning management skills at a high level. The authors speculate that this results from the teaching and learning process following Thailand's criteria for their Bachelor of Education Program. However, for scholarship teachers, when considering the characteristics and values for local development, it was found that both the scholarship teachers and their related parties agreed that the scholarship teachers' skills in bringing their knowledge to the local classroom were at the *highest level* of professional teacher competence.

In addition, the opinions expressed by those involved with the scholarship recipients showed that the teachers from the project displayed outstanding academic leadership in various aspects. These included being a leader in enhancing academic ranking/position ranking and outstanding knowledge in technology. They were also often assigned to represent the school in attending different events. They also had the characteristics of being a change agent in the local community. However, it must be noted that not all were viewed as leaders that create change.

The TDPLD Program's Project Management Efficiency and Effectiveness Performance

1) In terms of the efficiency and quality of scholarship teachers, the opinions expressed by scholarship teachers show that the teachers from the project had outstanding academic leadership in various aspects. They also demonstrated the characteristics of being change agents in the local community, although not all of them. However, these results reflected the value of this project to Thailand's education system.

This is consistent with other TDPLD studies, which have shown that the local communities are satisfied with the characteristics of teachers in terms of morality, ethics, personality, and human relations. There has also been approval for their quality of knowledge and ability to perform their work as teachers for local development, in which they mutually recognize those with outstanding teaching quality (Amatariyakul, 2021; Chatwirote, 2021).

2) The *budgetary worthiness evaluat*ion found that the TDPLD program effectively addressed Thailand's national development goals (National Legislative Assembly, 2014). Most surveyed viewed the program as valuable and should be continued. This finding is correlated to the TDPLD report on the outcome of teacher development during the 2017 induction period released by the Institute of Teacher Development and Development, lower-Southern Networks, which stated that budget management could be cost-effective.

Also, when many Thai teacher development projects are compared to other international success cases, such as Finland and Singapore, many Thai development systems appear to be *closed* (Hogan & Gopinathan,

2008; Malinen et al., 2012). These foreign teacher recruitment mechanisms aim to attract excellent and talented people to enroll in the teaching profession by an *open* process of guaranteeing job positions, receiving funds during their studies, and tuition fee waivers. Various selection processes include a written examination, interviews, aptitude, specialty tests, group discussions, and behavioral observations from participating in simulated situations.

CONCLUSION

This mixed-method study aimed to evaluate the *Teacher Development Project for Local Development* (TDPLD) program in Northern Thailand from 2016-2020. The aspects of evaluation included outputs, outcomes, and impacts in various dimensions. Ten groups of 3,041 individuals were identified for sampling using voluntary selection, purposive sampling, and snowball sampling techniques. Qualitative research methods were used on 702 participants, while quantitative means were employed on 2,339 informants.

The results revealed that before entering the teacher's TDPLD development course, individuals also exhibited a high level of competency in local development. Further analysis also showed that during each participant's induction Period (the period of entering their employment as a teacher), they gained essential knowledge that could be used to create tangible development for learners, their assigned schools, and the local community.

There is also evidence of practical innovation created by the scholarship recipients as well-established changes to schools and the community in which a learning community network has been created. The teachers could also work with the community happily and collaborate with their respective educational institutions and education offices in the local community. Most importantly, the project served to fulfill Thailand's national development goals. Nevertheless, it should be noted that some TDPLD scholarship recipients still need to receive teaching assignments in their local home communities as promised.

CONTRIBUTIONS TO THE LITERATURE

The study's undertaking and findings are the first of their kind in Thailand on a regional scale, which focuses on the *Teacher Development Project for Local Development* (TDPLD) program for the production of teachers with a focus on local development and collaboration between policy and local decision-makers. The program also offers suggestions for creating conditions that raise the standard of pre-service teacher preparation to simultaneously produce educators with high ethical and moral characters and high-quality teachers.

The TDPLD study also contributes to the research by extending the evaluation framework to local development in various dimensions while suggesting strengthening the teacher production system and enhancing the standard of education in Thailand.

The study adds to the body of project management research while further adding value and adherence to Thailand's development objectives.

Finally, the study helps address the critical need to find solutions for pre-service teacher (PST) continuous improvement and preparation in Faculty of Education curriculums.

POLICY RECOMMENDATIONS

1) Universities should propose teacher development systems that develop expertise in specific fields and cooperate in joint ventures in which new teachers are introduced and work with regional universities. Also, TDPLD proposals should be submitted to the central governing body that provides program funding and coordinated with each targeted university so that both can mutually plan to address specific teacher needs and provide scholarships that are compatible with the availability of quotas. Finally, the respective authorities should consider future projections of appropriate teacher fields and their majors.

2) The activities and courses designed for TDPLD should focus on teacher training skills and knowledge that is practical and relevant to other skills, such as law, finance, and procurement.
3) Policy-level agencies should clearly state the projects' goals for teacher development in primary, secondary, and vocational education schools, as each has different objectives.
4) To produce teachers that will effectively fulfill the 20-year national strategy and Thailand 4.0 objectives, there should be a project that aims to produce/train teachers to become innovators so that they have the ability and potential to create and develop students to be innovators as well.

RECOMMENDATIONS FOR FUTURE RESEARCH

1) There should be continued monitoring and assessment of the project's implementation when restarted using various conceptual frameworks to analyze whether the assessment results are consistent.
2) There should also be a concrete and tangible research study on teachers' performance, such as the teachers' capabilities in conducting research in the classroom or in the local community where the scholarship recipient has been assigned to work.
3) Finally, there should be research on the teacher development model or system, as well as practical training courses for scholarship students to enhance the quality of the project for the next generation of scholarship recipients.

ACKNOWLEDGEMENTS

REFERENCES

Amatariyakul, W. (2021). The scenarios potential development for teachers to community of Udon Thani Rajabhat University in the next decade. *Journal of MCU Nakhondhat*, *8*(4), 158–170. Retrieved from https://tinyurl.com/2p8yjvkv

Awases, A., Qian, N., & Bente, T. (2015). *Teacher policy development guide: Summary*. UNESCO. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000235272

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, *2*, 8–14. https://doi.org/10.1016/j.npls.2016.01.001

Cahapay, M. (2021). Kirkpatrick model: Its limitations as used in higher education evaluation. *International Journal of Assessment Tools in Education*, *8*(1), 135–144. https://doi.org/10.21449/ijate.856143

Chatwirote, B. (2021). The quality of teacher performance for local development: A case study of Kamphaeng Phet Province and Tak Province. *Golden Teak: Journal of Humanities and Social Sciences*, *27*(1), 126–138. Retrieved from https://tinyurl.com/e4yrt8cn

Chih-Pei, H.U., & Chang, Y.Y. (2017). John W. Creswell, research design: Qualitative, quantitative, and mixed methods approaches. *Journal of Social and Administrative Sciences*, *4*(2), 205–207. http://dx.doi.org/10.1453/jsas.v4i2.1313

Chookhampaeng, C., & Chookhampaeng, S. (2020). Monitoring and evaluation the professional learning communities project in Northeastern Thailand. *International Journal of Innovation Creativity and Change*, *13*(7). Retrieved from https://tinyurl.com/mrxdcv55

Chuenban, P., Sornsaruht, P., & Pimdee, P. (2021). How brand attitude, quality, and value affect Thai canned tuna consumer brand loyalty. *Heliyon*, *7*(2), e06301. https://doi.org/10.1016/j.heliyon.2021.e06301

Creswell, J.W., & Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th Ed.), SAGE Publications.

Equitable Education Fund. (2021). Teachers and equitable education: Thailand. *Equitable Education Conference 2021*. Retrieved from https://tinyurl.com/3ce2jmuc

Faculty of Education organized a teacher development project for local development, academic year 2019 via Zoom cloud meetings program. (2020, July 13). Suan Sunandha Rajabhat University. Retrieved from https://edu.ssru.ac.th/en/news/view/edu220663

Gregar, J. (2014). *Research design (qualitative, quantitative and mixed methods approaches)* (pp. 195–210). Sage.

Hogan, D., & Gopinathan, S. (2008). Knowledge management, sustainable innovation, and pre-service teacher education in Singapore. *Teachers and Teaching: Theory and Practice*, *14*(4), 369–384. https://doi.org/10.1080/13540600802037793

Johnson, R.B., Onwuegbuzie, A.J., & Turner, L.A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112–133. https://doi.org/10.1177/1558689806298224

Kanawapee, C., Petsangsri, S., & Pimdee, P. (2022). The importance of sharing, caring and collaboration in Thai teacher competency development through online professional learning communities. *Journal of Positive Psychology and Wellbeing*, *6*(1), 3674–3689. Retrieved from https://tinyurl.com/ydar6skw

Ketsuwan, P. (2021). Sustainability of Arts and Culture a Comparative Case Study of Cultural Village, Chiang Kham District, Phayao Province, Thailand and Luang Prabang, World Heritage City, Laos. *Turkish Journal of Computer and Mathematics Education*, *12*(8), 3035–3042.

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, *24*(1), 120–124. https://doi.org/10.1080/13814788.2017.1375092

Krumphals, I., & Haagen-Schützenhöfer, C. (2021). Development of a learning environment to enhance pre-service physics teachers' diagnostic competence in terms of students' conceptions. *EURASIA Journal of Mathematics, Science and Technology Education*, *17*(6). https://doi.org/10.29333/ejmste/10898

Malinen, O.P., Väisänen, P., & Savolainen, H. (2012). Teacher education in Finland: A review of a national effort for preparing teachers for the future. *Curriculum Journal*, *23*(4), 567–584. https://doi.org/10.1080/09585176.2012.731011

Moto, S., Ratanaolarn, T., Tuntiwongwanich, S., & Pimdee, P. (2018). A Thai junior high school students 21st century information literacy, media literacy, and ICT literacy skills factor analysis. *International Journal of Emerging Technologies in Learning*, *13*(9). https://doi.org/10.3991/ijet.v13i09.8355

National Legislative Assembly. (2014, September 14). Policy Statement of the Cabinet of Ministers. Deliver by General Prayut Chan-o-cha, Prime Minister, addressed to the National Legislative Assembly. Statement to the National Legislative Assembly on Friday, September 12, 2014. Retrieved from https://www.mdes.go.th/law/download/1407

Ngwakongnwi, E., King-Shier, K.M., Hemmelgarn, B.R., Musto, R., & Quan, H. (2014). Comparison of sampling methods for hard-to-reach francophone populations: Yield and adequacy of advertisement and respondent-driven sampling. *Open Medicine*, *8*(4), e120. Retrieved from https://tinyurl.com/27z6hwye

Prachanban, N., & Prachanban, P. (2021). Assessment for transformative learning process of teacher for local development project: An application of using latent class analysis. *Journal of Education Naresuan University,* *23*(1), 142–155. Retrieved from https://tinyurl.com/5n6pk25r

Puraprom, N. (2021). The remain of ethnic identity and values in Tai Lue houses: A comparative study of Chiang Kham district, Phayao province and Baan Nanyang Tai, Lao PDR. *Journal of Environmental Design*, *8*(1), 23–43. Retrieved from https://tinyurl.com/mr2m7wfz

Ruenphongphun, P., Sukkamart, A., & Pimdee, P. (2022). Developing Thai undergraduate online digital citizenship skills (DCS) under the New Normal. *Journal of Higher Education Theory and Practice*, *22*(9). https://doi.org/10.33423/jhetp.v22i9.5358

Sarapak, C., Sukman, S., Kong-In, P., Sonsrin, K., Nakchat, O., Jumpatam, J., & Yoomark, J. (2022). The physics classroom in an online 3D virtual world: A Thai high school teacher needs analysis. *International Journal of Information and Education Technology.* Retrieved from http://www.ijiet.org/online/IJIET-5398.pdf

Schripsema, N.R., van Trigt, A.M., Lucieer, S.M., Wouters, A., Croiset, G., Themmen, A.P., . . . Cohen-Schotanus, J. (2017). Participation and selection effects of a voluntary selection process. *Advances in Health Sciences Education*, *22*(2), 463–476. https://doi.org/10.1007/s10459-017-9762-5

Sittisak, R., Sukkamart, A., & Kantathanawat, T. (2022). Thai pre-service teacher learning management model development for online learning and coaching. *Journal of Higher Education Theory and Practice*, *22*(12). https://doi.org/10.33423/jhetp.v22i12.5460

Srakaew, S., Polvichai, J., Sugiyama, Y., Motohashi, K., Mochizuki, A., Ohara, K., & Shirouzu, M. (2021). Development and verification survey of human resource development program in engineering utilizing e-Learning system and project based learning in engineering with the cooperation of Japan and Thailand for the New Normal after COVID-19. *International Journal of Advanced Research in Engineering Innovation*, *3*(3), 76–83. Retrieved from https://tinyurl.com/btyrjjw9

Taherdoost, H. (2016, August 10). Validity and reliability of the research instrument; How to test the validation of a questionnaire/survey in a research. Retrieved from https://tinyurl.com/ykd5pyf8

Techawattanasiridumrong, W. (2022). The development of competency of teachers to return local teachers on the upper central region according to professional standards of the Office of the Higher Education Commission. *Journal of Education, Prince of Songkla University, Pattani Campus*, *33*(1), 212–222. Retrieved from https://tinyurl.com/8yms6frs

Thepha, T., Marais, D., Bell, J., & Muangpin, S. (2021). The evaluation of training for health-care professionals and community leaders regarding 6-month exclusive breastfeeding in Northeast Thailand. *The Journal of Perinatal Education*, *30*(2), 71–77. https://doi.org/10.1891/J-PE-D-19-00028

Trajoonosot, J., & Tulmethakaan, M. (2021). *Assessment of the project for the development of education and local development with higher education institutions as mentors lower central network annual budget year 2019 BE in the responsibility of Bansomdehchaopraya Rajabhat University* (Doctoral dissertation, Srinakharinwirot University). Thailand. Retrieved from https://tinyurl.com/59f3w29e

Turner, R.C., & Carlson, L. (2003). Indexes of item-objective congruence for multidimensional items. *International Journal of Testing*, *3*(2), 163–171. https://doi.org/10.1207/s15327574ijt0302_5

Wannapiroon, N., & Pimdee, P. (2022). Thai undergraduate science, technology, engineering, arts, and math (STEAM) creative thinking and innovation skill development: A conceptual model using a digital virtual classroom learning environment. *Education and Information Technologies*, pp. 1–28. https://doi.org/10.1007/s10639-021-10849-w

World Health Organization. (2020, September). *Thailand: How a strong health system fights a pandemic*. Retrieved from https://tinyurl.com/58pdnnju