

Collaborative Actions to Enhance Effective Teacher Skills

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Abstract

The project of the "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School" was one of the research initiatives that aimed at enhancing the professional development of teachers to align with the new educational paradigms of the 21st Century. The project involved practical activities aimed at fostering collaborative efforts toward improving the skills of teachers at Ban Nong Hua Wua School. The present study employed the Participatory Action Research methodology, which is comprised of four iterative phases of Planning, Acting, Observing, and Reflecting. The study was conducted over two cycles, each comprising one semester of an academic year, specifically during the Academic Year of 2022. There are three goals in research: (1) Positive changes would occur following the implementation of the project, both in terms of the teachers' professional development practices and the enhancement of the teachers' skills. (2) Learning outcomes, resulting from the project's participatory approach, would be evident at the individual, group, and school levels. (3) The knowledge gained from the practical experience in the context of Ban Nong Hua Wua School should be used as a model for the continuous self-development of teachers in the future. Six teachers participated in the research project and were the target group for development. The study involved three phases of comparison: before the first cycle of practice, after the first cycle of practice, and after the second cycle of practice. The findings were as follows. Firstly, the implementation of the project had resulted in positive changes as expected. The teacher-researchers had demonstrated a higher level of practice and had improved their *Teacher Skills*. Secondly, the researcher, the teacher team, and the school recognized the importance of the statement: "*Teachers and schools must never stop learning, never stop developing themselves, and never stop developing their teaching practices that impact students' learning.*" Teachers should be learners themselves, and schools should be organizations that promote learning. Teachers should strive to develop themselves to keep pace with the rapidly changing society, especially changes in the field of digital technology. They should utilize the widely available new knowledge found on the internet to benefit their self-development and work. Thirdly, the knowledge, which was gained from collaborative actions, will be used as a model for continuous self-development in the future. This model illustrates the cause-and-effect relationship between the driving forces for change, the factors that hinder change, and the ways to overcome obstacles until successful results are achieved. It is called the "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School Model."

Keywords: 21st-century education, teacher skills, participatory action research, collaborative actions, Ban Nong Hua Wua School

1. Introduction

According to the perspective of Express News Service (2011), teachers play a significant role in the development of a society since they are considered as pillars of strength and guiding forces in the lives of students. Teachers are responsible for imparting values to children, preparing them for further education, and contributing to good education in society. A teacher's love and affection, character, competence, and moral commitment have a profound impact on students. Thus, the role of a teacher in society is crucial to ensuring a promising future for the nation. Similarly, the University of the People (n.d.) acknowledged that teachers provide the power of education to the youth, offering them the possibility of a better future. In short, teachers simplify complex concepts, make abstract ideas accessible to students, and expose them to new topics and ideas. Furthermore, teachers can expand their students' interests and can encourage them to achieve better results. However, in contemporary times, teachers face various

challenges as outlined by Gama Learn (n.d.), who cited research indicating that there are seven common obstacles faced by teachers today. These challenges consisted of 1) Inspiring students to be more self-directed, 2) Improving Learning Outcomes, 3) Differentiating and personalizing teaching, 4) Getting students to do their work outside the classroom, 5) Finding the time to keep up with administrative tasks, 6) Understanding Changing Technology, and 7) Fostering Parental Involvement. Daskocil (2016) identified three primary challenges that teachers face in modern classrooms, which were: 1) Balancing the different learning needs of students, 2) Respecting expectations from school administrators, and 3) Helping parents and students meet long-term goals. Similar to High School Access (2019), which discussed the main challenges facing teachers in the 21st century, there are criticisms and opinions that have been expressed by those stakeholders within the Thai education system. The challenges were as follows: 1) individualistic students, 2) teachers playing multiple roles simultaneously, 3) teachers dealing with excessive paperwork, 4) increased demand from school administrators, 5) following the same curriculum for all students regardless of ability, 6) the changing face of classroom management, and 7) the changing face of teaching

According to Sardar (2018), the following are the expected changes to the roles of teachers in the 21st Century: 1) planners for 21st-century careers, 2) resource providers, 3) digital instructors for different ways of learning, 4) learning facilitators, 5) lovers of technology for learning, 6) digital learners for their lifetimes, and 7) genuine predictors. Cox (2019) discussed the characteristics of a 21st-century teacher, which consisted of the following: 1) being adaptive, 2) being a lifelong learner, 3) being tech savvy, 4) knowing how to collaborate, 5) being forward-thinking, and 6) being an advocate for the profession. In line with Amuno's (2022) perspective on the topic, six qualities of a 21st-century teacher were identified as follows: 1) being flexible and adaptive, 2) being a lifelong learner, 3) being tech-savvy, 4) being a team leader and collaborator, 5) being creative and innovative, and 6) being a mentor and role model. According to Haranaka (2018), there are several essential 21st-century skills that teachers should possess in order to succeed in the modern educational landscape, such as critical thinking, collaboration, communication, and creativity, information, media, and technology literacy, flexibility, leadership, initiative, productivity, and social skills, connectivity, emotional intelligence, and self-responsibility.

In addition, there are various suggestions and approaches for developing 21st-century teachers that have been provided by experts in the field. For example, Wade (2014) suggested 10 tips for becoming a 21st-century teacher, which are as follows: 1) reject the idea of "Content is King!", 2) recognize that change is essential, 3) develop a personal learning network (PLN), 4) encourage students to develop PLNs, 5) view any time spent exploring as an investment, 6) allow students to own their learning, 7) be vulnerable with students, 8) examine your "Why?," 9) pursue your needs, and 10) use technology to make the best use of time. Banga (2020) discussed the key attributes and skills required to become a 21st-century educator: 1) having a balcony view, 2) cultivating a culture of the 4 C's, 3) shifting paradigms, 4) having assessments for learning, 5) mastering communication, 6) developing collaboration and empathy, and 7) continuously improving and having a growth mindset.

Recognizing the importance of teachers in societal development has led to various challenges faced by educators in the current era. Expectations for the roles, characteristics, and skills of 21st-century teachers have been established by scholars and experts. There have been diverse proposals and recommendations focusing on the development of Teacher Skills. Thus, the research team was inspired to initiate the project of "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School", which aimed at broadening and deepening the understanding of effective teaching practices. Therefore, the research team began their study by selecting articles that were related to teacher development, including those written by reputable scholars, such as Cox (2019) on the qualities of teachers in the 21st Century, Amuno (2022) on the quality of teachers in the 21st Century, Haranaka (2018) on the skills of teachers in the 21st Century, as well as articles by Wade (2014) on the top 10 tips for being a teacher in the 21st Century and Banga (2020) on the origins of teachers in the 21st Century. These articles were analyzed and summarized in order to generate ideas that could be used to develop teachers in the project of "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School." The objectives were to discover information that would be the most appropriate and the most effective for teacher development in this local community within the context of Society 4.0 and to prepare for the future of Thailand. For educational development and instructional improvement, conducting a review of the literature was of great importance in order to enhance teacher effectiveness. Such literature was utilized to benefit the practical applications in the project of "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School", in which the researcher (identified as Number 1) serves as the school administrator. In particular, the literature review was essential for the development of teaching skills among educators in order to appropriately improve the students' learning outcomes. Participatory Action Research (PAR) methodology is a suitable research approach for educational development because it involves collaborative efforts between the researchers and co-researchers in the execution of the study. This research

methodology promotes the democratic participation and involvement of stakeholders in the decision-making processes and in the generation of knowledge and teaching techniques that are effective for learners. It also facilitates the possibility of enhancing the potential of educational personnel in the long term by adhering to the PAOR process, which places emphasis on consistent implementation and feedback. Therefore, the significance and impact that this study will have on educational development in the future are substantial.

2. The Objective of the Research

The objective of this research was to implement the project of "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School", which is one of the research plans or projects related to education in the 21st Century under the Doctoral Program in Educational Administration at the Isan Campus of Mahamakut Buddhist University and which employed the methodology of Participatory Action Research (PAR). For researchers, studying academic literature is an essential aspect of gaining explicit knowledge regarding effective teaching practices. Conducting a preliminary investigation into relevant research studies and academic articles enables researchers to comprehend and to apply accurate data analysis and research interpretation techniques. Additionally, integrating the findings of academic literature with the tacit knowledge gained from the experience of co-researchers can help the researchers to better understand and analyze the research topic in detail, and can facilitate the improvement of teacher training programs. Therefore, effectively linking explicit and tacit knowledge together can enhance the practical applicability and usefulness of the research findings in real-life settings, such as developing teaching skills for teachers or improving the learning environment of classrooms. The study involved six teachers, who were both the research participants and the target group for development. The following were the expected outcomes: 1) improved performance and teacher skills; 2) learning from actions at the individual, group, and school levels; and 3) the knowledge, gained from practical contexts in the school setting, could be used as a model for continuous development in the future.

3. The Literature Review

As stated in the research objectives, this study placed importance on exploring the literature related to the subject matter in order to gain explicit knowledge about Enhancing Effective Teacher Skills from a diverse range of issues and perspectives. Thus, the research team examined "articles" presented on the internet by academics, developers, researchers, or renowned figures involved in teacher development, in the six following areas: 1) the definition of Effective Teacher Skills by DeLuca (2016), Georgetown University. (2018), Good, Wiley and Florez (2009), and Loachapoka High School. (2021); 2) the definition of Effective Teacher Skills by Contributor (2020), DeLuca (2016), Melissa (2019), Quizalize Blog (2018), and Wilson (n.d.); 3) the characteristics of Effective Teacher Skills by Clark (2015), College (2020), Dennison (2019), DeLuca (2016), Loveless (n.d.), Meer (2022), Lancaster (n.d.), Guide (2020), Cox (2019), Impelman (2017), and Saini (2013); 4) the developmental approaches to Enhance Effective Teacher Skills by Alber (2015), Anilkumar (2020), Contributor C, (2020), Dean (2019a), Dean (2019b), Edsy Pvt Ltd. (2020), Gill (2020), Kampen (2019), Quizalize (2018), Sherbill (2012), Teach Thought (n.d.), The Graide Network (2018), The Tuition Teacher (2017), and Weimer (2009); 5) the developmental steps to Enhance Effective Teacher Skills by Brigham Young University (2020), K12 Teacher Leadership (2016), Mohammed (2017), Moore (2018), and Sun (2015); and 6) the evaluation of Effective Teacher Skills by Ethiopian Development Research Institute (n.d.), Online Learning Insights (2015), and QuestionPro (n.d.).

Based on the literature review of the 6 aforementioned topics, it can be concluded that the perspectives on developmental principles, ideas, techniques, methods, or activities (Item 4) represent crucial knowledge. For this reason, the participating teachers were enabled and were able to observe the new developmental approaches that incorporate diverse international perspectives. Therefore, from the literature review, 38 developmental strategies to enhance effective teaching Skills were derived. These are summarized below:

- Collaborating with other teachers#
- Being respectful of students, as well as parents
- Being aware of themselves as moral philosophers and facilitators of moral growth
- Having a deep knowledge and passion for their subject matter
- Being prepared and having organizational skills
- Demonstrating confidence

- Effectively setting goals
- Having emotional intelligence
- Having strong personal standards and continuing to be a learner throughout life
- Being firm and in control
- Accepting individual differences
- Staying organized
- Having an understanding of technology
- Having a professional attitude
- Having a warm personality and a genuine consideration for others
- Having the ability to develop relationships with their students
- Being patient and caring and having a kind personality
- Developing relationships with parents
- Communicating that they know what they are doing and why they are doing it
- Being friendly and approachable
- Having expertise in the subject matter
- Promoting school and community relations
- Understanding the students' motivations
- Being dedicated to teaching
- Engaging students in learning
- Supporting others and having concern for them
- Having expert communication skills
- Having the ability to develop strong relationships with students
- Being technologically capable
- Exhibiting adaptability and flexibility
- Having the desire to improve
- Learning something new every day
- Employing an effective delivery
- Creating a sense of fun with the learning tasks
- Filling the classroom with positivity
- Providing field trips and other activities
- Working as a part of a Team
- Using a variety of learning activities

4. Research Methodology

4.1 The Level of Experimental Research and Research Design Used in the Study

Carr and Kemmis (1992) classified action research into three levels: (1) Technical Action Research, which involves the researcher as an outside expert, who provides the idea, plan, or project for the participants to implement; (2) Practical Action Research, which involves the researcher in a more collaborative role as a consultant, catalyst, problem-setter, and facilitator; and (3) Emancipatory Action Research (also known as Participatory Action Research), which involves the researcher as an equal collaborator with the participants throughout the research process.

This research utilized the Participatory Action Research (PAR) methodology. Based on the analytical and synthetic studies of Sanrattana (2018), and the literature published by Arhar, Holly, and Kasten (2001), Carr and Kemmis (1992), Coghlan and Brannick (2007), Creswell (2008), James et al. (2008), Kemmis and McTaggart (1992),

McTaggart (1991), McTaggart (2010), and Mills (2007), it has been recognized that the Participatory Action Research (PAR) methodology is a process of research that the research participants are involved in every step of the process, including decision-making, implementation, and receiving the results of the research. In addition, the role of the researcher also changes from being an outside expert to a collaborative member of the research team. Furthermore, research is not only aimed at understanding or acquiring knowledge of various phenomena but also involves practical implementation to bring about desirable changes that are expected to be sustainable due to the commitment of the research participants in every step of the process.

4.2 Principles, Ethics, and Roles

The PAR methodology, used in this research, adheres to the 10 following principles: 1) having a specific context; 2) having diverse skills; 3) aiming for change; 4) being action-oriented; 5) listening to all participants' opinions; 6) analyzing, interpreting, and reflecting on one's self; 7) having an awareness of the potential, expertise, and the roles of the individuals within the community; 8) learning from both successful and unsuccessful actions to foster systemic learning; 9) making sure that all participants keep records; and 10) translating into sustainable practices or development.

Adhering to the following 10 principles of ethics is crucial in research: 1) taking responsibility for maintaining confidentiality; 2) ensuring access to information and making sure that it is shared equitably among all researchers; 3) collectively deciding on the research direction and the expected outcomes; 4) promoting the maximum participation of all researchers in the research design; 5) consulting and seeking approval from all parties regarding any suggestions and recommendations; 6) obtaining permission before observing or reviewing documents for purposes other than the intended purposes; 7) continually displaying results and remaining open to feedback and suggestions from others; 8) avoiding the infringement of copyright or other people's views and opinions; 9) informing all researchers about the nature of the research process from the outset; and 10) recognizing and respecting the rights of privacy for those, who choose not to participate in the research.

The following are the ten roles to which a researcher should adhere: 1) being a teacher, 2) being a leader, 3) being a good listener, 4) being a planner, 5) being a designer, 6) being an analyzer, 7) being a synthesizer, 8) being an observer, 9) being a reporter of findings, and 10) being a promoter and a facilitator.

4.3 Cycles, Steps, and Activities

Due to time constraints, which were imposed by the curriculum, the research team designated two cycles of continuous Planning, Acting, Observing, and Reflecting (PAOR) for this study, each consisting of one academic semester during the Academic Year of 2022. The research activities for each cycle and step are outlined below:

Cycle 1

Step 1: Preparation This step consisted of three activities.

1. The research methodology was clarified in order to ensure that the participating researchers could fully understand the process and make informed decisions about whether to join the research project based on ethical principles. This involved the following: (1) providing an initial explanation of the nature of the research process and the benefits of the research to the participating researchers, and (2) being accepting and respectful of the personal rights of those who chose not to participate.
2. A collaborative teamwork approach was established based on ethical principles. This involved the following: (1) engaging the participating researchers in the design of the research process and (2) participating in joint consultations and obtaining approval for proposals and suggestions from all parties.
3. The lessons learned were extracted in accordance with the following principles: (1) analyzing, interpreting, and evaluating one's self, and (2) learning from both successful and unsuccessful actions, which resulted in a systematic learning process.

Step 2: Planning This step consisted of four activities.

1. The research team collaborated to determine a development framework based on their previous experiences by following the principles of "consciousness of potential, expertise, and being a stakeholder of the research team." This was done to answer the question: "*What should be done to enhance effective Teacher Skills in Ban Nong Hua Wua School, based on previous experiences?*"
2. The research team presented an academic development framework consisting of 38 guidelines (as outlined in the literature review section) to ensure that all members of the team could have equal access to information. This was

carried out in order to provide the team with various contemporary options for implementation.

3. An action plan was developed by integrating the research team's academic development framework with the results from the brainstorming sessions in Activity 1 and Activity 2. This was done following the principle of "listening to feedback from all members of the team" and the ethical guideline of "consultation and approval of proposals from all parties." The resulting action plan provided a principled approach, conceptual ideas, techniques, and methods, as well as 45 activities, as shown in Table 1.

4. Lessons were extracted based on the aforementioned principles.

Step 3: Acting This step consisted of four activities.

1. By following the research orientation and expected outcomes that had resulted from joint decision-making, two sets of assessment tools were developed to evaluate three phases: the pre-implementation of Cycle 1, the post-implementation of Cycle 1, and the post-implementation of Cycle 2. The first assessment tool aimed at evaluating the teachers' levels of performance, which included theoretical principles, concepts, techniques, methods, or activities of the 45 practical guidelines. The second assessment tool aimed at evaluating the teachers' effective Teacher Skills.

2. Before the implementation of Cycle 1, both assessment tools were used to assess the teachers' levels of performance and their effective teaching skills.

3. The action plan was implemented utilizing the following principles: (1) having a specific context, (2) having diverse skills, (3) aiming to target change, (4) aiming to take action to achieve results, and (5) taking actions that would lead to sustainable development. Additionally, all research participants influenced the work in accordance with the research ethics.

4. The lessons were extracted following the aforementioned principles.

Step 4: Observing using an observation form, in-depth interviews, group discussions, and the examination of records. This was in accordance with the principle that "all researchers should keep records of activities and practices." Additionally, ethical considerations must be taken into account, such as obtaining permission before observing or examining documents for purposes other than their intended use, as stated in research ethics guidelines.

Step 5: Reflecting There were three activities in this step.

1. The evaluation of the post-practice performance within Cycle 1 was conducted through the utilization of a teacher performance rating assessment and the *Teachers' Effective Teacher Skills* evaluation forms

2. The reflection on work performance was accomplished through collective brainstorming aimed at reflecting on the progress made throughout all the stages of Cycle 1. The process was conducted in accordance with the principles of (1) "listening to feedback from all research participants," (2) conducting "self-analysis, interpretation, and evaluation," and (3) participating in "collaborative systemic learning through both successful and unsuccessful actions." Additionally, this process adhered to ethical guidelines that emphasized the ongoing visibility and openness of the progress of the work by providing opportunities for others to offer suggestions and feedback. In this reflection activity on work performance, the research team utilized Kurt Lewin's Force-Field Analysis technique (Lunenburg & Ornstein, 2000) to determine the driving forces that could bring about change, what these driving forces were, and how much change they would likely bring about. Additionally, the technique was used to identify factors that act as resistance to change. From these identified resistances, the following question was asked: "What suggestions can be made to increase the effectiveness of driving forces and reduce or eliminate these barriers?" These suggestions were used to plan for the next step, Step 6, which involved the following: 1) improving the existing driving forces to make them more effective, 2) seeking out new and more effective driving forces, or 3) utilizing a combination of both.

3. The lessons were extracted under the aforementioned principles.

Cycle 2

Step 6: Planning consisted of two activities: 1) developing an action plan and 2) extracting the lessons that had been learned

Step 7: Acting consisted of two activities: 1) implementing the action plan and 2) extracting the lessons that had been learned.

Step 8: Observing involved collecting data from the various activities by using observation forms, in-depth interviews, group interviews, checklists, or recordings (This was similar to what was done in Cycle 1.).

Step 9: Reflecting consisted of 3 activities: 1) evaluating their performance after completing Cycle 2 by using teacher assessment forms and the Teachers' Effective Teacher Skills assessment; 2) reflecting on the work performance by gathering collective input from all the stages of Cycle 2; and 3) extracting the lessons that had been learned.

Step 10: Summarizing the research findings was conducted by combining the results of observations, interviews, checks, assessments, and lesson extractions, as well as the reflection from Steps 5 and 9. The researcher and research participants then engaged in member checks, which are a form of validation, to ensure the research findings were accurate and reliable and were in accordance with the perspectives of Creswell (2008), Willis (2007), Locke (2001), and Leedy and Ormrod (2001). Member checks involved the following: (1) specific contexts; (2) listening to feedback from all the research participants; (3) self-analysis, interpretation, and evaluation; and (4) collective learning and the systemic process. In addition, the ethical considerations required consultation and approval from all the involved parties, and the opportunity for feedback and suggestions from others remained open and visible throughout the research process.

4.4 The Research Site and Research Participants

The research site refers to Ban Nong Hua Wua School, which was selected through purposive sampling with consideration given to the convenience and willingness of the research participants to collaborate. The school was both a research site and the target group for development, with six teachers participating both as research participants and as targets for development.

4.5 Research Tools

1) The tools for collecting high-quality data from activities at different stages. The research team considered using various tools to collect high-quality data from the different stages of activities, based on the appropriateness and situational factors. The tools were drawn from approaches proposed by Mills (2007) and were comprised of: 1) an observation form, 2) in-depth interviews & group discussions, and 3) examinations & recordings or journals, maps, audiotapes & videotapes, artifacts, and field notes, etc.

2) A self-assessment tool to evaluate the professional development of teachers. The research team and co-researchers developed a self-assessment tool to evaluate the professional development of teachers. The tool allowed the co-researchers to assess themselves at three different stages: before engaging in Cycle 1, after engaging in Cycle 1, and after engaging in Cycle 2. The tool was based on a 5-point rating scale: 'the most,' 'very,' 'neutral,' 'a little,' and 'the least.' The content validity was not examined, and the tool was not piloted with a sample group to establish the Alpha Coefficient of Reliability. This was because the questions in the assessment tool had reflected the shared values and goals of the research team and co-researchers, as identified during the planning phase for Cycle 1.

3) The Teachers' Effective Teacher Skills assessment was developed collaboratively by the research team and the researchers based on the characteristics of Effective Teacher Skills as identified by Clark (2015), College (2020), Dennison (2019), DeLuca (2016), Loveless (n.d.), Meer (2022), Lancaster (n.d.), Guide (2020), Cox (2019), Impelman (2017), and Saini (2013), as well as the evaluation concepts of Effective Teacher Skills from the perspectives of the Ethiopian Development Research Institute (n.d.), Online Learning Insights (2015), and QuestionPro (n.d.). The assessment consisted of 34 questions and utilized a 5-point rating scale: 'the most,' 'very,' 'neutral,' 'a little,' and 'the least.' The content validity of this assessment was examined by using the Indices of the Item-Objective Congruence (IOC) method according to the perspective of Rovinelli and Hambleton (1977). Five experts in the fields of Educational Administration and Educational Measurement & Assessment found that all items in the questionnaire had exceeded the required IOC value of 0.50, indicating that the questionnaire items were consistent with the developmental objectives as proposed by Chaichanawirote & Vantum (2017). After that, this assessment was subjected to a trial with 30 teachers in another school that was not part of the research setting in order to determine Cronbach's alpha or the coefficient alpha, which is a reliability coefficient that measures the internal consistency of tests. The overall reliability coefficient was found to be 0.96. When examining the reliability coefficients for each dimension, the Teaching Skills for the 21st Century dimension had shown a coefficient of 0.82, the Classroom Management Skills for the 21st Century dimension had shown a coefficient of 0.80, the Subject Matter Expertise dimension had had a coefficient of 0.82, the Enhancing 21st- century Skills for Teachers dimension had shown a coefficient of 0.87, and the Learning Assessment Skills for the 21st Century dimension had had a coefficient of 0.91. Comparing the reliability coefficients with the standard criterion of 0.70 or higher (UCLA: Statistical Consulting Group, 2016), it was found that they had been higher than the criterion, indicating that the items had demonstrated relatively high internal consistency.

4.6 Data Collection and Data Analysis

Quantitative data from both versions of the self-assessment surveys were analyzed using descriptive statistics, consisting of means (\bar{x}) and standard deviations (S.D.). Regarding the qualitative data, the data analysis process involved three steps: 1) checking for the completeness of the data with respect to the research objectives; 2) checking for the credibility of the data concerning the actual situation by comparing the recorded results for each person and comparing the results obtained by using different data collection methods; and 3) presenting the data in the form of a detailed analytical narrative that reflected the reality of the situation and consisted of supporting evidence, such as numerical values, statistics, tables, graphics, photographs, direct quotations, and unedited transcripts of interviews that demonstrate diverse thoughts and feelings regarding the same issue, which may either support or contradict each other.

5. The Research Results

The research team would like to present the findings of their study in accordance with the following research objectives: 1) the changes that had occurred, both expected and unexpected, in cases in which the expected changes were evaluated based on the researchers' assessments of the levels of developmental approaches, concepts, techniques, methods, or activities in 45 practical directions, and from the evaluation of the Teachers' Effective Teacher Skills compared across 3 periods: before practice in the first cycle, after practice in the first cycle, and after practice in the second cycle; 2) the learning gleaned from the practices that had occurred among the research team, co-researchers, and school; and 3) the knowledge that had been gained from the practices.

5.1 The Expected Changes

-The research team expected that the 45 developmental approaches, which had been identified, would be utilized by the research participants to improve their abilities, and bring them to a higher level than before. Based on the self-assessment results of the researchers at three different stages (before the first cycle of implementation, after the first cycle of implementation, and after the second cycle of implementation), it was found that some improvements had been observed. This was inferred from the increasing mean values, which had been 2.33, 2.70, and 4.23, respectively, and the corresponding low standard deviation values of 0.67, 0.65, and 0.39. These results, which were obtained from an overall data analysis and by examining individual items, are presented in Table 1.

Table 1. A Comparison of the Self-evaluation Results of the Research Participants Regarding the Level of Professional Teacher Development across Three Phases: before Cycle 1, after Cycle 1, and after Cycle 2

The expected implementation of the developmental approaches	Before Cycle 1		After Cycle 1		After Cycle 2	
	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.
• Having a good attitude towards the teaching profession and loving the profession of teaching	2.67	0.82	2.83	0.75	4.50	0.58
• Having the ability to provide a variety of teaching and learning activities for learners to learn	2.17	0.98	2.83	0.75	4.25	0.50
• Being responsible and attentive to teaching tasks, as well as the other assigned tasks	2.67	1.03	2.67	0.82	4.25	0.50
• Having morality and ethics, and behaving in accordance with professional ethics	2.17	0.75	2.50	0.54	4.50	0.58
• Setting clear goals for your professional development	2.33	0.82	2.67	1.03	4.25	0.50
• Being well-versed in the subjects taught and the tasks to be performed; and learning new things and improving one's self all the time	2.33	0.52	2.67	0.52	4.00	0.00
• Having a good personality	2.17	0.75	2.83	0.75	4.50	0.58
• Collaborating with other teachers	2.33	0.52	2.83	0.75	4.00	0.00
• Being respectful of students, as well as Parents	2.67	0.52	2.50	0.55	4.00	0.00
• Being aware of their roles as moral philosophers and facilitators of moral growth	2.67	0.82	2.67	1.03	4.00	0.82
• Having a deep knowledge and passion for their subject matter	2.50	0.55	2.50	0.55	4.25	0.50
• Having preparation and organizational skills	2.00	0.63	2.67	0.52	4.00	0.00
• Demonstrating confidence	2.17	0.41	2.67	0.52	4.25	0.50

The expected implementation of the developmental approaches	Before Cycle 1		After Cycle 1		After Cycle 2	
	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.
• Being effective at setting goals	2.33	0.52	2.67	0.52	4.50	0.58
• Having Emotional Intelligence	2.33	0.52	2.67	0.52	4.50	0.58
• Having strong personal standards and continuing to be a learner throughout life	2.67	0.52	2.50	0.55	4.50	0.58
• Being firm and being in control	2.33	0.52	2.83	0.75	4.25	0.50
• Accepting individual differences	2.17	0.75	3.00	0.89	4.25	0.50
• Staying organized	2.00	0.89	2.50	0.84	4.50	0.58
• Understanding technology	2.83	0.41	2.67	0.55	3.75	0.50
• Having a professional attitude	2.67	0.52	2.83	0.75	4.25	0.50
• Having a warm personality and a genuine consideration for others	2.33	0.82	2.67	0.52	4.50	0.58
• Having the ability to develop relationships with the students	2.67	0.82	2.83	0.75	4.75	0.50
• Being patient and caring, and having a kind personality	2.00	0.89	2.67	0.52	4.50	0.58
• Developing relationships with parents	2.50	0.52	2.67	0.52	4.25	0.50
• Communicating their thoughts (What they know, What they are doing, and Why they are doing it)	2.00	0.89	2.83	0.75	4.25	0.50
• Being friendly and approachable	2.17	0.75	2.50	0.55	4.25	0.50
• Having expertise with respect to the subject matter	2.50	0.55	2.83	0.75	4.50	0.58
• Participating in school and community relations	2.50	0.55	2.67	0.52	4.50	0.58
• Understanding the students' motivations	2.33	0.52	2.33	0.55	4.25	0.50
• Being dedicated to teaching	2.00	0.63	2.83	0.75	4.25	0.50
• Engaging students in learning	2.00	0.89	2.67	0.52	4.25	0.50
• Supporting and showing concern for others	2.33	0.52	2.50	0.55	4.00	0.00
• Having expert communication skills	2.17	0.41	2.83	0.75	4.00	0.00
• Having the ability to develop strong relationships with students	2.50	0.84	2.83	0.75	4.25	0.50
• Being technologically capable	2.50	0.55	3.00	0.89	3.75	0.50
• Being adaptable and flexible	2.17	0.75	3.00	0.89	4.00	0.00
• Having the desire to improve	2.50	0.55	2.67	0.52	4.50	0.58
• Learning something new every day	2.67	0.52	2.83	0.75	4.00	0.00
• Employing an effective delivery	2.00	1.10	2.33	0.52	4.50	0.58
• Creating a sense of fun with the learning task	2.00	0.89	2.67	0.52	4.00	0.00
• Filling the classroom with positivity	2.50	0.55	2.50	0.55	4.00	0.00
• Providing field trips and other activities	2.33	0.52	2.83	0.75	4.00	0.00
• Placing focus on teamwork	2.33	0.52	2.67	0.52	4.00	0.00
• Using a variety of learning activities	2.17	0.75	2.67	0.52	4.00	0.00
Totals	2.33	0.67	2.70	0.65	4.23	0.39

-The expectation was that teachers would have higher levels of Effective Teacher Skills than before. Based on the evaluation results of the 3 aforementioned cycles, there had been significant improvement. The Mean values increased from 2.22 before practice in Cycle 1, to 2.60 after practice in Cycle 1, and further increased to 4.28 after practice in Cycle 2. The Standard Deviation values were consistently low, with values of 0.69, 0.64, and 0.47, respectively. These findings, which were based on the overall data analysis and the individual evaluation criteria, are presented in Table 2.

5.2 The Unexpected Changes

Not only did the results of this study result in expected changes, but the results also brought about unexpected positive changes for the participating teachers. These changes consisted of the following: 1) gaining knowledge and an understanding of the PAR Methodology and various research techniques that can be applied to their work, 2) realizing the importance of using internet research to benefit their professional development, 3) changing their work behaviors from individual efforts to more collaborative efforts, 4) recognizing the importance of working towards successful outcomes, and 5) being able to effectively manage teaching and learning, which resulted in improved student learning outcomes.

Table 2. A Comparison of the Teachers' Effective Teacher Skills Evaluations across Three Phases: Before Cycle 1, after Cycle 1, and after Cycle 2

The Expected Teacher Skills	Before Cycle 1		After Cycle 1		After Cycle 2	
	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.
Teaching Skills for the 21st Century	2.24	0.81	2.57	0.50	4.25	0.54
• Having a good plan and preparation for teaching every day.	2.00	0.89	2.50	0.55	4.75	0.50
• Systematically preparing for teaching and organizing	2.33	0.82	2.50	0.84	4.00	0.00
• Acting as a consultant, providing advice on teaching, giving encouragement, making suggestions, and making time for learners	2.17	0.75	2.33	0.52	4.00	0.82
• Arriving to and finishing class on time (punctuality)	2.33	0.82	2.67	0.52	4.00	0.82
• Assigning tasks effectively, applying teaching experience in and out of the classroom, and providing the appropriate tasks.	2.33	0.82	2.67	0.52	4.25	0.58
• Using a variety of teaching activities, using innovations and critical thinking, emphasizing group work, and conducting natural testing.	2.17	0.75	2.50	0.82	4.50	0.55
• Continuously modifying the teaching and learning management process to align with any changes in the curriculum, grade level, learners, and scientific progress	2.33	0.82	2.83	0.42	4.25	0.50
Classroom Management Skills for the 21st Century	2.22	0.81	2.60	0.77	4.13	0.48
• Creating a conducive learning environment in the classroom	2.00	0.89	2.67	0.82	3.75	0.50
• Assisting and accepting the individual differences among students	2.33	0.82	2.33	0.52	4.00	0.82
• Fostering positive relationships among parents, teachers, and students	2.33	0.82	2.83	0.98	4.00	0.00
• Showing empathy and support towards students	2.17	0.75	2.83	0.75	4.50	0.58
• Studying the emotional state of students using a consistent theoretical framework	2.17	0.75	2.67	1.00	4.25	0.50
• Creating a fun and creative atmosphere for teaching and learning	2.33	0.82	2.50	0.52	4.25	0.50
Expertise in the Subject Matter	2.27	0.65	2.59	0.73	4.21	0.39
• Having knowledge of the teaching subject and a love for the teaching profession	2.17	0.41	2.67	0.82	4.25	0.50
• Preparing one's self well and constantly participating in self-development	2.17	0.75	2.67	0.82	4.75	0.50
• Being dedicated to learning new things every day and always looking for better ways	2.00	0.89	2.67	0.82	4.25	0.50
• Having the ability to use modern teaching equipment and to constantly learn about new scientific developments	2.17	0.75	2.50	0.55	4.00	0.00
• Adapting to constantly changing knowledge	2.50	0.55	2.67	0.82	4.00	0.82
• Adapting and improving one's self, and adjusting one's knowledge in accordance with the subjects being taught	2.50	0.55	2.33	0.52	4.00	0.00
Enhancing 21st-century Skills for Teachers	2.17	0.55	2.73	0.65	4.32	0.38
• Being a lifelong learner, a good teacher, and a role model for learning	2.17	0.41	2.83	0.75	4.25	0.50
• Having good communication with administrators, teachers, students, and colleagues	2.00	0.00	2.67	0.82	3.75	0.50
• Encouraging students to use critical thinking skills and creativity to express their true feelings	2.17	0.75	2.83	0.42	4.00	0.00
• Having a good attitude towards students, respecting them, and allowing them to be themselves	2.33	0.82	2.67	0.52	4.25	0.50
• Listening to the opinions of students regularly	2.33	0.82	2.83	0.75	5.00	0.00
• Having high expectations for all students, understanding them, and asking about their problems and happiness in life	2.17	0.41	2.50	0.55	4.50	0.58
• Being passionate and encouraging, and caring for the students	2.00	0.63	2.83	0.75	4.50	0.58
Learning Assessment Skills for the 21st Century	2.23	0.66	2.50	0.52	4.44	0.54
• Using various assessment tools to effectively measure the true abilities of the learners.	2.17	0.98	2.67	0.52	4.25	0.50
• Providing comprehensive assessments covering the knowledge, skills, and attitudes of the learners	2.50	0.55	2.67	0.52	4.50	0.58

The Expected Teacher Skills	Before Cycle 1		After Cycle 1		After Cycle 2	
	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.
• Reflecting the assessment results to the learners	2.50	0.55	2.67	0.52	4.50	0.58
• Using assessment results to improve the learners' learning processes	2.33	0.52	2.67	0.52	4.25	0.50
• Encouraging learners to assess themselves and to reflect on their work	2.00	0.63	2.33	0.52	4.25	0.50
• Explaining the assessment criteria to the learners all the time	2.17	0.75	2.33	0.52	4.50	0.58
• Observing and immediately addressing any learner, who does not understand, and explaining until they do	2.00	0.89	2.33	0.52	4.50	0.58
• Providing scores and assessment results to learners every time	2.17	0.41	2.33	0.52	4.75	0.50
Totals	2.22	0.69	2.60	0.64	4.28	0.47

5.2.1 Learning from Practice

After completing the project "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School," the researcher, the research participants, and the school realized the importance of the saying: *"Teachers and schools must never stop learning, never stop developing themselves, and never stop developing teaching practices that affect student learning."* Teachers must be learners themselves, and schools must be organizations of learning. Teachers must aim at developing themselves so that they can keep up with a rapidly changing society, especially with regard to the advancements in digital technology. Teachers should, more than ever before, use the new and widely available insights on the internet to benefit their development and their work.

5.2.2 The Knowledge Gained from Practice

The knowledge gained from practice will be used as a model for the continuous self-development of teachers and schools in the future, and as a case study for other schools, in which the knowledge can be applied in developing their teachers. It is a prototype that demonstrates the cause-and-effect relationship that exists between the driving forces that are used to bring about change, the obstacles to change, and the methods that can be used to overcome those obstacles, which will ultimately lead to achievements. This is called the "Collaborative Actions to Enhance Effective Teacher Skills in the Ban Nong Hua Wua School Model," as shown in the accompanying Figure 1.

6. Discussion and Suggestions

The roles of teachers in schools have expanded beyond simply teaching since they are also expected to fulfill other roles, such as being advisors, mentors, coaches, facilitators, leaders, and administrators, as well as participating in community relations. Teachers are considered to be the backbone of a school, and without them, the success of the school would be compromised. However, the multitude of responsibilities assigned to teachers has led to concerns about their ability to teach effectively, while also fulfilling their other roles.

The project of the "Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School" was implemented using the PAR methodology, in a context in which the teachers were expected to perform in multiple roles. The research was conducted over two cycles, each in one semester of the Academic Year of 2022. The use of the PAR methodology resulted in positive changes, both expected and unexpected, and led to various learning experiences, particularly regarding the importance of being a lifelong learner and keeping up with the rapid changes in technology.

Not only was the success of the research operation the result of using the principles, concepts, ethics, and practices of the PAR methodology as outlined in the 10-step research methodology, but it was also dependent upon the application of the driving force used to bring about change. In other words, "the 45 developmental approaches were derived from the integration of the previous developmental practices of the research team along with academic developmental approaches from various studies." This developmental approach took into account the concept of Knowledge Management (KM), which emphasizes the importance of both tacit knowledge (knowledge from previous experiences) and the importance of explicit knowledge (academic knowledge acquired from various sources).

The Driving Force Used to Bring About Change

The main driving force that had been used since Cycle 1. The 45 self-development approaches that teachers were expected to apply. The goal was to achieve efficiency by setting "principles" to make teamwork effective by accomplishing the following: (a) identifying what unites us, (b) working together on how to achieve a shared vision, (c) building team potency, (d) being clear on roles and responsibilities, and (e) creating a culture of learning and psychological safety, along with setting "strategies" as guidelines for effective teamwork, as follows: (a) setting goals, (b) narrowing them down, (c) making them hands-on, (d) fostering collaboration, (e) developing something usable, (f) providing coaching and mentoring, (g) re-visiting goals, and (h) being realistic.

The driving force was further strengthened in Cycle 2. These were the following driving forces that aimed at addressing weaknesses in Cycle 1: (1) motivating teachers to behave ethically; (2) promoting coordination between teachers, parents, and students; (3) encouraging teachers to recognize the importance of being creative and participating in innovative self-development and thinking outside the box, as well as being lifelong learners; (4) stimulating effective classroom management that fosters student learning; and (5) emphasizing the importance of enhancing 21st-century skills for both teachers and students.

Resistance and Overcoming Resistance to Change

Resistance to change arose from the following: (1) the mindset and behavior of the teachers, who had previously been researchers and who were accustomed to working individually, but had to adapt to working collaboratively using the PAR Methodology, which emphasizes participation and democracy, especially by incorporating brainstorming techniques, lesson analysis, and reflection; and (2) the lack of confidence shown by the teacher-researchers in themselves to adopt the developmental ideas from the perspectives of various academics to use as a developmental strategy, which was due to the following: a) their familiarity with working in accordance with their past knowledge and past experiences and b) their feeling that the research had placed a greater work burden on them.

Actions were taken to help the teacher-researchers to overcome the resistance to making changes. Firstly, information was presented to the teacher-researchers to make them aware of the benefits of working in accordance with democratic principles, being open to listening to opinions, respecting each other, honoring each other, thinking creatively, and thinking outside the box. Secondly, the teacher-researchers were encouraged to realize the importance of the saying: *"Teachers must never stop learning, never stop developing themselves, and never stop developing teaching methods that impact student learning."* Moreover, they were also encouraged to be individuals of learning, who aim at developing themselves to keep pace with a rapidly changing society, especially in terms of digital technology. Finally, teachers should use the new and widespread knowledge on the internet to benefit their self-development and their teaching practices.

The changes that occurred in the Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School project

were as follows: Firstly, there was an increase in teaching abilities among the participating teachers, and the development of Teacher Skills with an average value that increased from a mean of 2.33 before the first cycle to 2.70 after the first cycle and then to 4.23 after the second cycle. It can be said that the project had achieved better outcomes than expected. Secondly, the project created a learning and knowledge-sharing environment among the research team, participating teachers, and the school. They received a model to guide the development of acquiring effective Teacher Skills in the future. Therefore, the project of Collaborative Actions to Enhance Effective Teacher Skills in Ban Nong Hua Wua School serves a good example for developing teaching abilities and can be used as a guide for developing teachers in other schools in the future.

Figure 1. The Prototype Model of Collaborative Actions to Enhance Effective Teacher Skills at Ban Nong Hua Wua School

Additionally, explicit knowledge refers to academic knowledge gleaned from various sources, and this research focused on studying the "articles" presented on the internet by authors from various countries, which express their perspectives in line with the intended purpose of the research. These perspectives provide new, up-to-date, and diverse insights on the definitions, importance, characteristics, developmental approaches, developmental process steps, and evaluation. These perspectives are difficult to find in documents, textbooks, or even in research.

Therefore, based on the experiences and successful outcomes of this research, there are two recommendations. Firstly, in any development in schools, the PAR methodology, which is characterized as a democratic collaborative practice, should be used instead of Technical Action Research or Practical Action Research (as explained in the research methodology section), which are characterized as authoritarian. However, if there are difficulties in understanding the PAR methodology, which people often find complicated and technical, there are other management ideas that convey democratic management, which can be used. The other management ideas, which are commonly employed in non-research contexts; which are used for development, problem-solving, or normal work; and which could be applied, consist of the Y theory, Maturity Organization theory, the System 4 theory, and leadership theories, such as Practitioner Centered, Participating, Delegating, Colleague, or Employee Centered (Sanrattana, 2018). Alternatively, the ideas of the PDCA Cycle, commonly known as the Deming Cycle, Deming Wheel, Shewhart Cycle, or the Continuous Improvement Spiral, which resemble the PAR methodology, could also be used (Tang, 2016). Secondly, in any development within a school, teachers should prioritize educating themselves on knowledge that is related to the internet and digital technology advancements since research has shown that there are many up-to-date and innovative perspectives presented in "articles" by various authors, who are experts or practitioners in their fields. These perspectives can be used to create a system that incorporates both the new knowledge and the experiences that teachers already possess in order to enhance their effectiveness. Since teaching is a profession that naturally requires continuous self-development and learning, teachers must not stop learning and should serve as role models for learning. If they do not learn and develop themselves, their thoughts and actions will be limited to the same old practices. This would be unfortunate because we are currently in a period of transition from the old education processes of the 20th Century to the new processes of the 21st Century, which are vastly different. If the teachers' thoughts and actions continue to be limited by the old educational processes of the 20th Century, students will miss opportunities to learn and keep up with these new changes.

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