A Study of Administrative Factors Affecting the Performance of Using Educational Technology of Basic Education Teachers in Ongkarak District, Thailand

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Abstract

This study aims to find out the administrative factors affecting attitude and actual performance on using technology for the learning management of Basic education teachers; the problems and best practices on administrative support to strengthen the using technology for the learning management. The sample of this research is 81 teachers using a cluster sampling method. The questionnaire contains 46 questions in three areas: the administrative support to use of technology, teachers' attitude, and the actual use. The tool was validated by three experts in the field. The statistical methods used in this research are frequency, percentage, mean, standard deviation, simple regression. This study shows that administrative factors in overall was at the agree level ($\bar{X}$ = 3.72, S.D.= .380); the overall attitude is at the agree level ($\bar{X}$ =3.80, S.D. =.807). This is basically due to teachers' awareness on the significance of use of technology in education. The actual performance is at the agree level ($\bar{X}$=3.53, S.D.=.211). The research also found that administrative factors affecting attitude toward education technology = 4.4% (R^2 = .044) and the administrative factors affecting actual performance in using education technology by 38% (R^2= .383). Therefore, administrators should assist, support, equipped, educate, and improve teachers and administrators of Ongkarak District, Nakhon Nayok, Province Thailand.

Keywords: Administrative factors; Performance; Basic education teachers

1. Introduction

Perhaps the most powerful force transforming today's educational landscape is technology. Many schools around the world are supporting increased levels of technology in the classroom by offering hardware including tablets and laptops, improving internet access, and introducing

computer literacy programs for administrators, teachers, and students. While most teachers recognize the value of educational technology, they frequently find the smooth and efficient introduction of new educational technologies difficult. Technology incorporation poses major challenges to educators at all levels, from the purchase of modern technology equipment to the modification of curriculum and teaching methods to integrate new instructional technologies.

Schools generally including all the primary and secondary schools in the district of Ongkarak in the province of Nakhon Nayok, in central region of Thailand are not left out in the challenges of migration to modern technologies in their policies, provision of facilities, and training of teachers in the use of technology, because whatever thing that affect other schools in Thailand the schools in Ongkarak district will not be left out.

2. Research Objectives:

2.1 To study the administrative factors affecting attitude and actual Performance on using technology for the learning management of Basic education teachers.

2.2 To study the problems and best practices on administrative support to strengthen the using technology for the learning management.

3. Review of Literature

Few previous research specifically related to "The Relationship between Administrative Support for Technology Use, Teachers' Attitude, and Actual Technology Use" were found in a study of the literature. Perhaps the most powerful influence on today's educational environment is technology. Many school district leaders around the world are supporting increased levels of technology in the classroom by offering hardware including tablets and laptops, improving internet access, and introducing computer literacy programs for both teachers and students.

As a result, this study attempted to gather literature support for its research objective of examining the relationship between administrative support for technology use, teachers' attitudes, and actual technology use.

3.1 Administrative Support to use of technology

ICT integration in the classroom relies heavily on administrative support from the school. In this study, Simin and Mohammed Sani (2015), created an instrument to tailor and measure school administrative support. Five metrics were used to assess teachers' perceptions of school administration's support for incorporating ICT into teaching and learning. The list includes topics like school administration's support, teaching allocation, expertise of ICT use, instructional design for teaching with ICT, and teachers' professional development. Developing ICT infrastructure in schools, providing high-speed internet access, updating and managing ICT assets, providing interactive teaching and learning sessions, teachers' mastery of the use of ICT in teaching and learning, providing teachers with ICT skills training to enhance ICT competence, and fostering an ICT community culture among students and school staff as advocates for ICT integration are just some of the challenges that school administrators face (Abdullah, Khalid, & Mohd Hamzah, 2015). According to Salehudin (2016), factors that influence school administrators' support for integrating ICT include establishing ICT competency, giving teacher training, providing a complete infrastructure to enhance computer literacy, and developing effective school evaluation planning.

3.2 Teachers' attitudes to use of technology

For a long time, technology has been recognized as a powerful tool for educational transformation (Chigona, 2015). However, there are significant drawbacks to employing technology in the classroom. One of the most frequently cited reasons for technology implementation failure is a lack of professional advancement (Ertmer, Ottenbreit-Leftwich, Sadk, Sendurur, & Sendurur, 2012). Teaching process autonomy and professional communication autonomy have a good impact on teacher attitudes about the use of technology in the classroom. Things are evolving at a dizzying pace in the field of education. However, there are still certain areas where nothing has changed. These areas involve teachers' rights to choose teaching methodologies, use technology, arrange and deliver materials, and select suitable assessment and evaluation systems (Gacoin, 2018).

It's vital to support teachers' autonomy in these areas. According to Froese-Germain et al. (2013), teachers say that using technology gives them autonomy. Thanks to the use of technology, teachers can direct the educational process as they see proper. Teachers who are self-sufficient, according to Sehrawat (2014), can teach more effectively. Autonomous educators argue pedagogical uses of technology in education, their decisions, and the best use of technology for students (Gacoin, 2018). According to the findings of this study, independent instructors had more positive attitudes toward using technology in the classroom. As a result, the employment of technology in the classroom and autonomy can be said to be mutually beneficial. As a result, the findings of this study show that teachers' levels of education, teaching process autonomy, and professional communication autonomy all play a role in internalizing positive attitudes regarding classroom technology use.

3.3 Administrative Support to actual use of technology

Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools by the Faculty of Education, University of Malaya, Malaysia shows that technology-based teaching and learning is more effective than traditional classroom teaching and learning, according to the findings of a study conducted by the Faculty of Education, University of Malaya, Malaysia. This is because using ICT tools and equipment will make teaching and learning more engaging and successful for both teachers and students (Simin Ghavifekr, Wan Athirah Wan Rosdy, et al., 2015).

Teachers have a positive attitude toward the use of the Internet in teaching and learning, according to Zhang (2013)'s study, Internet Use in EFL Teaching and Learning in Northwest China. Teachers have some knowledge of Internet use in teaching and learning, but they have not well integrated Internet into teaching and learning so far, and teachers' knowledge of ICT and network technology is very limited.

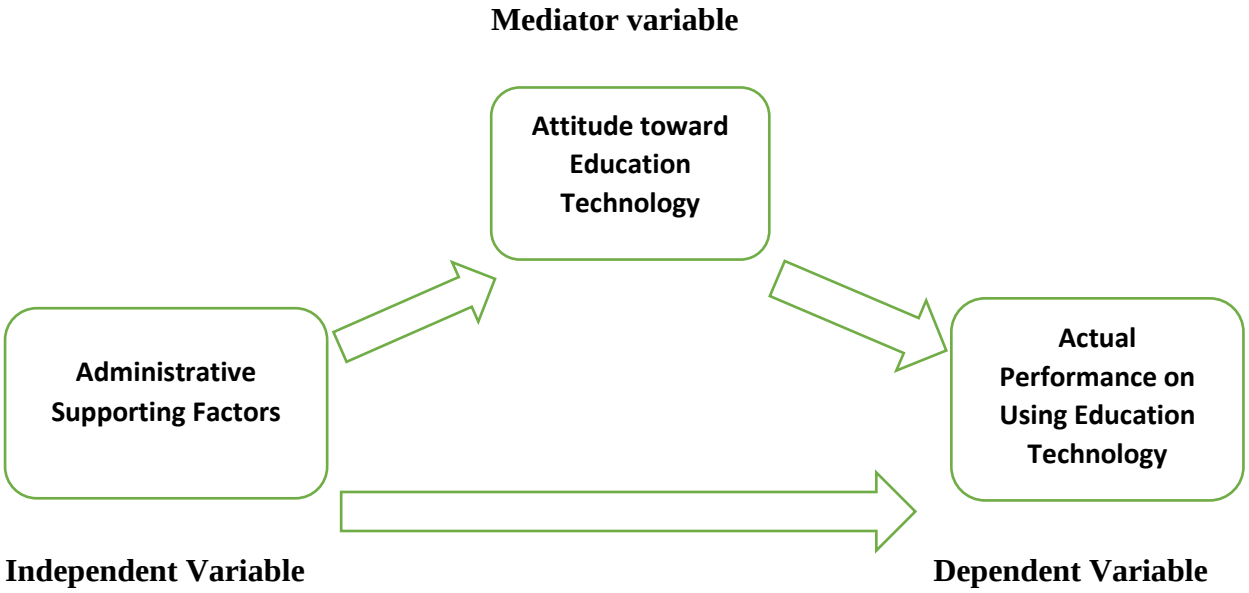
4. Theoretical Framework

The theoretical framework for this study is focused on the Concerns Based Adoption Model (CBAM), which was established in the 1970s by the Research and Development Center for Teacher Education in Austin, Texas (Hall & Hord, 1987), which is based on Fuller's (1969) seminal research on stages of teacher concerns about the development of their teaching skills and abilities. The CBAM model was chosen by the researcher because it offers a theoretical context as well as methods for conducting the analysis and interpreting the findings. However,

maybe most importantly, the CBAM model allows us to concentrate our research on the main players in the change process-the teachers (Donovan, Hartley & Struder, 2007).

5. Conceptual Framework

CONCEPTUAL FRAMEWORK



The administration decides the direction school teachers go in the use of technology in schools. Teachers' attitude is the teachers' unpleasant mental state when he or she uses technology or technology equipment, while the actual performance on using education technology is teachers' positive/negative utilization of technology or technological equipment in school.

6. Methodology

6.1 Research Design

The study used a descriptive method of research that sought to understand administrative factors affecting the performance of using Educational Technology of Basic Education Teachers in Ongkarak District, Thailand. Descriptive research used to identify the characteristics, attributes trends, and correlation in the research problem. It's aimed to explain the issues or problems through the process of data collection that enables to describe the situation (Bhat, 2018). In addition, descriptive studies can yield rich data that leads to important recommendation.

6.2 The Locale of the study

The study was conducted in primary and secondary schools in the district of Ongkarak in the province of Nakhon Nayok, in central region of Thailand. The province was created by the Act Establishing Changwat Samut Prakan, Changwat Nonthaburi, Changwat Samut Sakhon, Changwat Nakhon Nayok as a provinve, Buddhist Era 2489 (1946), which came into

force as of 9th March,1946. With this, the province of Nakhon Nayok is divided into four districts which are Mueang Nakhon Nayok, Pak Phli, Ban Na and Ongkarak.

6.3 Population and samples

Population in this study are 315 teachers (Administrators, Teachers, and Supporting staff) from all schools (primary and secondary) both public and private schools located in Ongkharak District, Nakhon Nayok Province in the academic year 2021-2022.

A sample size of this research is 101 teachers from 6 secondary and primary schools (private and government) in Ongkarak district of Nakhon Nayok province using cluster sampling technique. These teachers will be selected to provide answers to the questionnaire that would be issued to them.

6.4 Instrument for data collection

The instrument for data collection is the use of the questionnaire. The questionnaire was strictly submitted by hand for the respondents shortly after covid-19 restriction of face-to-face contact was relaxed in Thailand. The questionnaire is made for the responses of the teachers in the schools. It contains 46 questions in three areas: the administrative support to use of technology, teachers' attitude, and the actual use. The tool was translated into the Thai language and validated by three (3) experts in the field.

Respondents were re-requested to indicate their opinions in the appropriate spaces provided in the questionnaire by ticking in the appropriate places. The first section is for administrative support with 16 questions, the second section, teachers' attitude, and the third is the actual usage both having 15 and 15 questions respectively. Item structured in five-point scale of: Strongly disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA), about this study.

6.5 Statistics Methods

Statistics methods used in this research are: Frequency, Percentage, Mean, Standard Deviation, Simple Regression.

7. Result and Findings

This research is a study of administrative factors affecting the performance of using educational technology of basic education teachers in Ongkarak District, Thailand. It is quantitative research which objectives aims at:

7.1 To study the administrative factors affecting attitude and actual Performance on using technology for the learning management of Basic education teachers.

7.2 To study the problems and best practices on administrative support to strengthen the using technology for the learning management.

The instrument for data collection is the use of the questionnaire. The questionnaire strictly submitted by hand for the respondents due to the failure of respondence online. The questionnaire is made for the responses of the teachers in the schools. It contains 46 questions in three areas: the administrative support to use of technology, teachers' attitude, and the actual use. The tool was translated into the Thai language and validated by three (3) experts in the field. There were 81 respondents in this research, 21 are male (25.9 %) and 60 are female (74%).

Out of 101 samples, there are only 81 respondents used in this study due to time constraints, cultural biases, and availability of the respondents, location, or geographical area where the researcher had to do follow-ups to ensure that the return of the questionnaires was validated and accounted. They are teachers from primary and secondary schools (both private and government) within Ongkarak District of Nakhon Nayok Province using cluster sampling techniques. They were selected to answer the questionnaire handed to them. The survey questionnaire contains 46 questions in three (3) areas in connection with the objectives set in this research:

1. Administrative Support to Use of Technology
2. Teachers' Attitudes
3. Actual Use of Technology

Respondents' opinions towards the administrative support factors, attitudes toward education technology and actual performance on using education technology.

Table 1: The administrative support factors

Administrative support factors	$\bar{X}$	S.D	Interpretation
1.Use of technology to document personal personal/professional growth (e.g., electronic teaching portfolios)	3.43	.670	Moderate
2. The use of word processing is effective among teachers.	3.43	.611	Moderate
3. The administration communicates to teachers through e-mail.	3.30	.558	Moderate
4. Status of technology on the campus makes teachers feel more competent as educators.	3.95	.650	Agree
5. The administration rewards teachers using technology.	3.37	.601	Moderate
6. Use of technology to support various student learning styles (e.g., use of media for auditory and visual learners)	4.09	.453	Agree
7. The administration encourages teachers who are not using technology.	4.20	.401	Agree
8. The administration does often visit classrooms to see computer use.	3.44	.707	Moderate
9. The administration takes an active role in the use of technology.	5.00	.000	Strongly Agree
10. The school has opportunities for teachers training in use of technology.	4.12	.678	Agree
11. The school has sufficient up-to-date, workable computer equipment.	3.49	.654	Moderate

12. Administrators use technology to access electronic resources	3.40	.701	Moderate
13. Use technology to analyze student achievement/performance data (e.g., identify trend, provide remediation to learners	3.63	.749	Agree
14. The school has funds for computer improvements.	3.22	.548	Moderate
15. Administrators use technology for information presentation (e.g., PowerPoint, digital media)	3.31	.645	Moderate
16. Use of technology for administration and classroom management (e.g., gradebooks, attendance, seating charts)	4.21	.410	Agree
Total	**3.72**	**.380**	**Agree**

From Table 1, it shows that the administrative factors in overall was at the agree level ($\bar{X}$= 3.72, S.D.=.380).The administration takes an active role in the use of technology ($\bar{X}$=5.00, S.D.=.000) suggest that there is an active participation in the use of technology, and on the other hand funding for school computer is moderate ($\bar{X}$= 3.22, S.D.=.548), administrators use of technology for information presentation (E.g., PowerPoint, digital media), ($\bar{X}$ = 3.31, S.D.=.645) is also moderate**.**

Table 2: Attitudes toward education technology

Attitudes toward education technology	$\bar{X}$	**S.D**	**Interpretation**
1. Technology would help me organize my work.	3.95	.705	Agree
2. Computers are a fast means of getting information.	5.00	.000	Strongly Agree
3. Technology saves time and effort.	4.58	.567	Strongly Agree
4. Teaching with computers offers real advantages.	4.56	.548	Strongly Agree
5. Using computer would make subject matter more interesting	4.40	.492	Agree
6. Technology gives me opportunities to learn many new things.	4.99	.111	Strongly Agree
7. Teachers should be encouraged for using the computer	5.00	.000	Strongly Agree
8. Technology can be a useful instructional aid in almost all subject areas.	5.00	.000	Strongly Agree
9. Use of technology in education almost always reduces the personal treatment of students.	4.48	.503	Agree
10. Knowing how to use computers is a worthwhile skill.	4.98	.156	Strongly Agree

11. I don't use computer for supporting my lesson except obligation	2.51	.527	Moderate
12. I can't associate the computer and education	1.90	.663	Disagree
13. Students can't improve their creativity in computer supported learning.	1.77	.618	Disagree
14. I prefer lecture instead of computer supported learning.	2.44	.570	Disagree
15. Contribution of education with computer supporting cannot afford studying.	1.51	.503	Disagree
Total	**3.80**	**.807**	**Agree**

From Table 2, it shows that the overall attitude is at the agree level (X=3.80, S.D. =.807) This is basically due to teachers' awareness on the significance of use of technology in education. Answers gathered from the respondents of this study shows that the administrative factors have less affected the attitude. These are the emerging issues with regards to teachers' perceptions, attitudes on the incorporation of education technology, and the actual use of it. Specifically on Table 2 reveals the samples responses with questions about the use of technology on the following items on 2,7,13 and 15 of the questionnaires: Computers are a fast means of getting information ($\bar{X}$= 5.00, S.D.=.000); Teachers should be encouraged for using the computer ($\bar{X}$=5.00, S.D. =.000); Students can't improve their creativity in computer-supported learning. ($\bar{X}$=1.77, S.D. =.618); Contribution of education with computer support cannot afford to study. ($\bar{X}$=1.51, S.D. =.503).

Table 3: Actual performance on using education technology

Actual performance on using education technology	$\bar{X}$	**S.D**	**Interpretation**
1.The actual usage of technology in the school makes my work easy	4.38	.561	Agree
2.The willingness to use of email gives speed to communication.	3.09	.745	Moderate
3.Effectiveness of the school technology usage enhances skills.	4.05	.773	Agree
4.Use of technology intimidates and threatens me.	2.72	.530	Moderate
5.Computers break down too often to be of very much use.	2.74	.667	Moderate
6.Google chrome technology can help to learn many new things.	4.33	.612	Agree
7.I am very confident when it comes to working with computers at home/at school.	4.46	.613	Agree
8. The ICT facilities in my school are well-functioning and can be used.	4.15	.760	Agree

9. Little access to ICT prevents me from using it in teaching.	1.98	.570	Disagree
10. Teaching time is not enough for me to use ICT for teaching and learning purposes.	2.19	.527	Disagree
11. Using the Internet would improve my performance in doing my job.	4.33	.570	Agree
12. Using Google Classroom enhances my effectiveness in online study.	4.54	.501	Strongly Agree
13. Use of technology for communication with colleagues/parents/students (e.g., online chats, e-mail, newsletters, class websites	3.14	.440	Moderate
14. Use of technology to support activities that facilitates higher-order thinking (e.g., collaborative problem-based activities, activities that require analysis and synthesis of information)	3.58	.722	Agree
15. Discuss grades or assignments with electronic instructor	3.33	.652	Moderate
Total	**3.53**	**.211**	**Agree**

From Table 3, it shows that the actual performance is at the agree level ($\bar{X}$=3.53, S.D.=.211) on using educational technology that teachers are in need of training seminars on Basic Computer Literacy, the availability of ICT devices and facilities in the school to motivate educators to incorporate educational technology in teaching and learning. This is indicative of the finding which shows thus "little access to ICT prevents me from using it in teaching ($\bar{X}$=1.98, S.D.=.570). Using Google Classroom enhances my effectiveness in online study ($\bar{X}$=4.54, S.D.=.501) Some teachers couldn't associate the use of the computer with education. Some teachers prefer lecture-based teaching rather than computer-based.

Table 4: Administrative factors affecting attitude toward education technology

According to the objective 1, to study administrative factors affecting attitudes toward education technology and administrative factors affecting attitude toward education technology. The results are in tables 4&5 as follows: the administrative factors affecting attitude on using technology for the learning management of Basic education teachers; was that administrative Factors affecting attitude toward education technology is equivalent to 4.4% (R^2 = .044).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209[a]	.044	.032	.12952

a. Predictors: (Constant), TotalPart2

b. Administrative factors affecting attitude toward education technology = 4.4% (R^2= .044) with statistically significance at .05 level.

Regression equation from raw score

Y=3.534+.072

Table 5: Administrative factors affecting actual performance in using education technology

The finding here based on the objectives indicates that administrative factors affecting actual performance in using education technology by 38.3% (R^2=.383).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.619[a]	.383	.376	.16721

a. Predictors: (Constant), TotalPart2

b. Administrative factors affecting actual performance in using education technology by 38.3% (R^2=.383) with statistically significance at .01 level.

Regression equation from raw score

Y=2.249+.345

The gathered data from the respondents of this study shows that the administrative factors have affected the attitude and actual performance of using technology for the learning management of basic education teachers in Ongkarak District.

The emerging issues with regard to teachers' perceptions, attitudes on the incorporation of education technology, and the actual use of it. Teachers don't see the usefulness of computers and technology as part of their work as educators. In other word this research has fulfilled the 2 objectives of this study.

8. Summary, Discussion, and Recommendations

8.1 Summary

This research paper explores how administrative factors affect the use of technology by Basic education teachers in Ongkarak District, Thailand. It reviews some literature on the relationship between teachers' beliefs and attitudes and their technology integration practices. This study shows that administration takes an active role in the use of technology ($\bar{X}$ = 5.00) suggest that there is an active participation in the use of technology, there is also use of technology for administration and classroom management (e.g. gradebooks, attendance, seating charts) ($\bar{X}$ = 4.21) and on the other hand funding for school computer is moderate level ($\bar{X}$ =3.22), administrators use of technology for information presentation (e.g. PowerPoint, digital media) ($\bar{X}$ = 3.31) is also moderate **.** The overall result is on agree level ($\bar{X}$ = 3.72). Table 1 shows that the administrative factors in overall was at the agree level

($\bar{X}$ = 3.72,) The answers gathered from the respondents of this study shows that the administrative factors have less affected the attitude. These are the emerging issues with regards to teachers' perceptions, attitudes on the incorporation of education technology, and the actual use of it. Specifically on Table 2 reveals the samples responses with questions about the use of technology on the following items on 2,7,13 and 15 of the questionnaires: Computers are a fast means of getting information ($\bar{X}$ = 5.00), teachers should be encouraged for using the computer ($\bar{X}$ =5.00), students can't improve their creativity in computer-supported learning. ($\bar{X}$ = 1.77), contribution of education with computer support cannot afford to study. ($\bar{X}$ =1.51).

Table 2 shows that the overall attitude is at the agree level ($\bar{X}$=3.80). This study also shows the actual performance on using educational technology that teachers are in need of training seminars on Basic Computer Literacy, the availability of ICT devices and facilities in the school to motivate educators to incorporate educational technology in teaching and learning. For example: Nos. 4-5 issues were raised as follows: No. 4 - Use of technology intimidates and threatens me ($\bar{X}$=2.72) Teachers don't seem to know the usefulness of computers and technology as part of their work as educators to support teaching and learning needs besides they were only obliged to do so. No. 5 - Computers break down often to be of very much use ($\bar{X}$ =2.74) Some teachers couldn't associate the use of the computer with education. Some teachers prefer lecture-based teaching rather than computer-based. Table 3 shows that the actual performance is at the agree level ($\bar{X}$=3.53). Administrative factors affecting attitude toward education technology = 4.4% (R^2 = .044). Administrative factors affecting actual performance in using education technology by 38.3% (R^2=.383).

8.2 Discussion

The respondents are teachers from primary and secondary schools (both private and government) are working within Ongkarak District of Nakhon Nayok Province. The research method used was a cluster sampling technique because all samples are within the geographical area (Ongkarak Province). They were selected to do the survey questionnaire provided to them. The survey questionnaire was made up of 46 questions with three (3) main areas in connection with the objectives set in this research: 1.) Administrative Support to Incorporate Technology; 2.) Teachers' Attitudes; and 3.) Actual Use of Technology.

Administrative Factors affecting attitude toward education technology is equivalent to 4.4% (R^2 = .044). It means that Administrative Factors have affected less on education technology. Administrative Factors affecting actual performance in using education technology is equivalent to 38% (R^2= .383). It means that Administrative Factors have affected in actual performance in using education technology by 38.3%.

This research agrees that administrative factor has affected both teachers' attitude towards the use of technology and actual performance, partly because of administrative policy, transition to technology due to the covid-19 and other related issues.

In addition to all these issues discussed above, there is lackadaisical attitude to responding to research questions by teachers which is the reason why 234 samples were not retrieved from the respondents. This may be due to lack of awareness of the importance of research to improvement of school performance.

8.3 Conclusion

In conclusion, the objectives of this research study have been met as they have been outlined, the aims of this research study have been identified and focused on the relationship between administrative supporting factors that affect basic education teachers (Grades 1-9) to incorporate technology in teaching, learning, and the administrative works as mentioned in this study. This also includes teachers' skills, attitudes, and actual performance. The CBAM model has added a new supposition based on findings from research focusing on change facilitators: that change interventions would be more successful if they answer the issues that teachers share at the moment, they express them. Intervention is characterized as any action, event, or series of actions or events that influence the use of innovation, and change facilitators are those who carry out the interventions (Hord & Huling-Austin 1986). Principals, administrators, teacher-trainers/leaders, superintendents, program coordinators, and staff developers are examples of change facilitators. Interventions should answer teachers' concerns as they progress through the (predictable) stages. This research is bounded on the administrative supporting factors of Grade 1-9 teachers in private and government sectors within Ongkarak District, Thailand.

8.4 Recommendation

The following recommendations are made to assist, support, equipped, educate, and improve teachers and administrators of Ongkarak District, Nakhon Nayok, Province Thailand on the following:

1. Administrators should incorporate the use of ICT in teaching and learning by reviewing and evaluating the curriculum development plan. Supervision is needed to implement ICT in all subjects and encourage teachers to develop ICT skills to improve teaching and student learning.
2. ICT Training Seminar for Teachers in the Primary and Secondary Level. It could be an internal or external event. Identify ICT experts at school, who could be the resource speakers or trainers for those who are in need of proper training.
3. Properly maintaining and managing ICT Facilities in every school to be available to all teachers at school.
4. Budget allotment for ICT Facilities in every school and motivate teachers to use technology in teaching and learning by giving them small incentives.
5. There will be a schedule for each teacher where she or he could learn to develop new ICT skills or enhance it by exploring ways to improve him/herself.

8.5 Further Study

The researcher also would like to further research on to compare the attitudes of teachers in Ongkarak region with other regions and what can be done to improve on performance.

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