# CHAPTER 3

## REVIEW OF THE PAST STUDIES

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CHAPTER 3

REVIEW OF THE PAST STUDIES

3.1 INTRODUCTION

The review of related literature is needed for the research work as it link between the research proposed and the past studies. There is hardly any research project which is totally unrelated with research that has been already taken place. The review of literature is very important aspect of any research both for the work planning as well as to show its relevance and significance.

3.2 IMPORTANCE OF REVIEW OF THE PAST STUDIES

The effective literature review helps the researcher to understand the existing body of knowledge including where excess research exists. It provides a solid theoretical foundation for the proposed study. The effective literature review also help to substantiate the presence of the research problem, justify the proposed study as one that contributes something new to the body of knowledge, and frame the valid research methodologies, approach, goals, and research questions for the proposed study. (Leedy and Ormrod, 2005)¹

Kumar, V. (2009)² states that a large part of review of literature actually needs to be done even before the research project is formalized. This is essential to make sure that the researches are not repeating the work that someone has already done earlier. Sometimes, if the research has already been undertaken earlier, then it provides an option of modifying the work by adding a new perspective or altering some of the methods of research to obtain a perspective that will be different from earlier works and thus more valuable. Occasionally, the work may be exact repetition of the work done earlier, but with a different set of data or sources of facts, and purpose of the research may just be seen if the results are similar to earlier works.

A good researcher usually goes through a lot more literature than is actually incorporated in the paper. This is because different literature may have differing relevance for the current project and all of it may not worth reporting in the end, but in the initial phase,
when the researcher is looking for all aspects of an issue that could be relevant one would like to extensively explore the literature and see if any relevant findings are already available. Some of the literature reviewed is directly relevant and hence used as a preface to explain the background of work. Then other reports may be relevant from the point of view of the project as they provide some clues to the puzzle by suggesting a hypothesis, which may be the subject matter of your research project.

The review of the related literature is necessary to show the available evidence to solve the problem adequately and thus the risk of duplication can also be avoided. It provides ideas, theories, explanations or hypotheses valuable in formulating the problem. It also suggests methods of research appropriate to the problem, to locate comparative data useful in the interpretation of results and to contribute to the general scholarship of the researcher. Review of literature is also important to highlight difference in opinions, contradictory findings or evidence, and the different explanations given for their conclusions and differences by different authors. Thus review of literature is a very important part of one’s research.

3.3 THE PAST RESEARCH STUDIES RELATED TO THE CHANGING ROLES OF TEACHERS IN THE CONTEXT OF GLOBALIZATION AND TECHNOLOGICAL CHANGES

This chapter has presented nine past researches related to the changing roles of teachers in the context of globalization and technological changes.

Study 1: A Study of Roles of University Teachers in a Digital Era (Phillip, A.I.: 2008)^3

Objectives of the study:

The objectives of this research were to find out the degree of roles of university teachers in a digital era and compare the mean scores of roles of university teachers in a digital era with regards to sex, age and teaching experience.

Sample of the study:

The sample who participated in the study was the university teachers in two subjects i.e. Science and business studies. Stratified random sampling was used for selection of sample. 75 university teachers were science subject teachers whereas the other
85 university teachers were business studies subject teachers. Out of 160, 40 university teachers (25%) were selected by simple random sampling for interview.

**Tool used in the study:**

There were two types of tools in this study. The first tool was the scale which measures the roles of university teachers in a digital era whereas the second tool was the interview questions which concerned to the roles of university teachers in a digital era. The scale which measures the roles of university teachers in a digital era consisted of 60 items and divided into four sections i.e. (a) to be the learning manager, (b) to be the mentor, (c) to be the ICT developer, and (d) to be the motivator.

**Research design:**

The study was conducted by quantitative analysis (descriptive research). In order to study the roles of university teachers in a digital era, the data which obtained from the scale to measure the roles of university teachers in a digital era was scored and analyzed for finding out mean, standard deviation. t-test (independent) and Analysis of Variance (ANOVA) were used to test the difference between mean scores of the roles of university teachers in a digital era with regards to different variables i.e. sex, age and teaching experience. The data obtained from the interview questions was analyzed by the content analysis.

**Major findings:**

The results of the study were found as follow:

1. The roles of university teachers in a digital era in total score and in different aspects of roles i.e. (a) to be the learning manager, (b) to be the mentor, (c) to be the ICT developer, and (d) to be the motivator were found at moderate level.

2. There was no significant difference between mean scores of the roles of university teachers in a digital era in total score and in different aspects of roles i.e. (a) to be the learning manager, (b) to be the mentor, (c) to be the ICT developer, and (d) to be the motivator rated by male and female university teachers.

3. There was the significant difference between mean scores of the roles of university teachers in a digital era in total score and in different aspects of roles i.e. (a) to be
the learning manager, (b) to be the mentor, (c) to be the ICT developer, and (d) to be the motivator rated by university teachers belonging to different groups of age and teaching experience.

(4) According to the content analysis of the interview questions, 9 roles of university teachers in a digital era should be performed:

- Teachers should provide ICT tools which is capable of increasing students’ motivation for being more receptive, more engaged, and more likely to learn.
- Teachers should promote cooperation and collaboration among students and teachers for increasing or ICT skills.
- Teachers should promote a deeper, richer, and more probing communication between teacher and student and among student themselves regarding the use of ICT in teaching – learning activities.
- Teachers should afford more varied and individualized methods of assessment based on ICT.
- Teachers should provide contexts for authentic assessment, real-time feedback, tracking and ongoing support for improvement.
- Teachers should provide an effective ICT learning platform for diverse learners with diverse interests, talents and intelligences.
- Teachers should enable opportunities for more depth of understanding, experience, and integrate ICT into curriculum.
- Teachers should allow students to develop and create new types of learning using ICT.
- Teachers should provide real-world simulations including experience in professional and career readiness skills.

academics and departmental level and to find out solutions for an effective application of globalization and technologies. Based on the research problem, there were four research questions as follow:

(1) What are possible domains of application of globalization and technologies in curriculum development in higher education level?

(2) What are the main barriers of application of globalization and technologies in curriculum development of higher education level?

(3) Which kinds of essential supports are needed for application of globalization and technologies in curriculum development of higher education level?

(4) What are advantages and disadvantages of application of globalization and technologies for curricular activities in higher education level?

Sample of the study:

The 240 university staff members have been requested to be the sample of the study. These university staff members were the representative of the three major groups: 95 respondents were the representative of university academics section, 64 respondents were the representative of university curriculum planners and 81 respondents were the representative of university ICT’s professional centres.

Tool used in the study:

The tool was designed through a documentary study on literature of application of globalization and technologies in curriculum of higher education level. The first draft of a researcher-made questionnaire has been developed based on some outstanding works in literature and designed in 4 aspects with 50 items in Likert scale system. The first section with 10 items were about the possible domain application of globalization and technologies in curriculum development of higher education, second section with 15 items were about the barriers of application of globalization and technologies curriculum development of higher education level. In the third section 10 items were about the essential and need supporting factors of application of globalization and technologies in curriculum development of higher education level. The last section, advantages and disadvantages of application of globalization and technologies in curriculum development of higher education level with 15
items were considered. Validity of the instrument reviewed by employing a specialist
dominated focus group with participation of 10 experts and the validity & reliability has been
calculated through two methods: Alpha coefficient (0.90) and Split-half (0.91) respectively
and the results confirm that the instrument has reliability.

Research design:
The research employed a survey research method. The research has been
conducted at 19 universities, during the 2008-2009 academic year. In order to study the
application of globalization and technologies in curriculum development of higher education
level, the data which obtained from the scale to measure the application of globalization and
technologies in curriculum development of higher education was scored and analyzed for
finding out mean, standard deviation and the comparison of the mean scores of the
application of globalization and technologies in curriculum development of higher education
with regards to different variables i.e. sex, age and educational qualification.

Major findings:
The main results are reported as follow:

(1) There were 9 possible domains of application of globalization and
technologies in curriculum development of higher education level:
   ❖ Using of digital libraries and internet-based information for enrichment of
curriculum content and process,
   ❖ Sharing and exchanging of leanings and experiences among university
professors working inside and outside of the university,
   ❖ Encouraging of students' interests and needs in curriculum decision-
making through web based needs assessment,
   ❖ Providing of web-based presentation of curriculum before and during the
semester,
   ❖ Using of email in teaching and learning activities,
   ❖ Web-based diagnostic, formative and summative assessments,
   ❖ Using of supplementary soft wares for effective teaching and learning,
designing a dynamic feedback system,
Producing of digital unlimited leaning materials such as e-books

(2) There are some obstacles for application of globalization and technologies in curriculum development at higher education level i.e.

- Inadequate familiarity of professors with computers hardware and the supplementary equipments,
- Lack of orientation /training program on computer literacy or low rate of academic participation,
- University teachers increase their average of age and their reluctance to use computers in education,
- Unfamiliarity of academics with software which can be used in their teaching, unfamiliarity of academics with world wide web environment and the way of using it,
- Inadequate access of faculty members to personal computers (pc) in their homes or offices,
- Inadequate access of academics to enough budget,
- Common beliefs of academics that new ICT’s possibilities have no effect on improving of quality of higher education,
- Missing of a proper working place and labs or equipped classes with PC’s, video projectors and other equipments,
- Lack of budget in faculties to equip the classes and preparing equipments of hardware,
- Absence of moods, cooperative motivations and enough coordination in university staff for entering to new atmosphere,
- Absence of digitalized copy equipments like CD copiers in faculties, budget weakness and the lack of financial possibility for students, absence of students' access to personal computers (PC), and
- Students' illiteracy in computer knowledge

(3) There were facilitating factors and essential supports needed for application of globalization and technologies in curriculum development of higher education level i.e.

- Providing computer literacy training for university academics,
Providing academics’ familiarity with computer software that can help them in teaching and learning activities,

Providing academic familiarity with internet and the way of using it,

Providing academics access to personal computers in their homes or offices,

keeping academics informed on new and effective ICT’s instruments and equipments,

Improving academics beliefs and views on the positive impacts of ICT’s features on improving the higher education,

Providing availability of a well designed website or even an equipped class with PC’s, video projectors and the other necessary equipments,

Providing possibility of having enough budget in faculty to equip the classes and prepare necessary equipments,

Motivating presence of moods, cooperative motivations and enough coordination in faculties staff for entering to new atmosphere,

Supporting students’ financial resources,

Encouraging students’ attention and participation in workplaces and labs to use ICT features,

Motivating students’ access to personal computers in their homes or dormitories,

Improving students’ abilities on computer literacy,

Increasing students’ interest in digital features like e-Books, slides and electronic pamphlets.

(4) There were advantages and disadvantages of application of globalization and technologies in curriculum development of higher education level i.e. Viruses attacks to data and academic records, sabotages, intended manipulations and information stealing, computers’ frauds in doing the examinations and exercises, destructive effects of missing the culture of using ICT in education, missing of technical substructures which are necessary for the education and evaluation based on ICT, interruption of electricity and computers network in time of teaching, examinations or transmission of educational matters, disappearing the all
information of faculty, professors and the educational course at once, missing of enough security in computer systems and weakness to control them, absence of transmitting positive values and also teacher–student interaction, more attention to quantity and more speed in education instead of quality and training.

(5) There was no significant difference between mean scores of the application of globalization and technologies in curriculum development of higher education level in total score and in different aspects of roles rated by male and female university teachers.

(6) There was the significant difference between mean scores of the application of globalization and technologies in curriculum development of higher education level in total score and in different aspects of roles rated by university teachers belonging to different groups of age and teaching experience.

**Study 3: A Study of the Teachers’ Roles and Adoption of Educational Technology in The Chinese Context.** (Zhu Chang, 2010)

**Objectives of the study:**

This study centers on the following objectives:

(1) To study the level of perception of Chinese teachers on their roles and adoption of educational technology in the Chinese context

(2) To test the difference between mean scores of perception of Chinese teachers on their roles and adoption of educational technology in the Chinese context with regards to gender and age.

(3) To study the relationship between teacher profiles (perception of teachers’ roles) and their adoption of educational technology

**Sample of the study:** This study was conducted in 2009 to address the above objectives. Sample of the study consisted of 125 teachers from a Chinese comprehensive school (primary and secondary) in Beijing. The questionnaires were delivered to 175 teachers. The response rate was 72%. Teachers of five different subjects (Chinese language, Mathematics, English language, Science including chemistry, physics and biology,
as well as politics) were randomly selected. However, an attempt was made to select a representative sample in terms of gender and age.

**Tools used in the study:**

There were three tools used in the study.

For teachers’ roles, the teachers’ roles survey was administered based on instrument develop by Grasha and Riechmann-Hruska (1990)\(^6\) reflecting five scales that centre on specific teachers’ roles: expert, formal authority, personal model, facilitator and delegator. When filling out the instruments, teachers were asked to reply to the items by reflecting on their experiences with a particular teaching course. A questionnaire with 40 items required respondents to indicate on a five-point scale to which extent they agree/disagree with the item. By Cronbach method, reliability of the questionnaire was ranging between 0.74 and 0.83.

For measurement of willingness to adopt educational technology, the five points scale which measures teachers’ willingness to adopt educational technology was used. They are divided into four parts i.e. willingness to invest time, willingness to learn, willingness to use ICT for teaching in classroom, willingness to adopt online instruction and learning, willingness to use ICT for preparation of lessons and assessment of students. This questionnaire was self-developed and was composed of 20 questions. It was tested with a pilot study with 15 participants. The internal consistency of the scale was sufficiently acceptable (\(\alpha\) between 0.75 and 0.85).

Next to questionnaires, interviews with focus-groups (6 teachers per group) interviews were conducted with a random selection of 60 teachers. Each interview took about 45 to 50 minutes. Teachers were interviewed with semi-structured questions about their perceptions of teachers’ roles, perception on educational innovation and adoption of educational technologies. All interviews were recorded and the transcripts were coded for analysis.
Research design:

This study is descriptive research which aims to investigate the teachers’ roles and adoption of educational technology in the Chinese context. The response of teachers on the scale which measures the teachers’ roles and adoption of educational technology was calculated for determining of mean, standard deviation and percentage (%). In order to find out the difference between mean scores of teachers’ roles and adoption of educational technology rated by teachers belonging to different groups of sex and age, t-test (independent) and MANOVA) were applied. For testing the relationship between teacher profiles (perception of teachers’ roles) and their adoption of educational technology, Pearson Product Moment Correlation Co-efficient ($r_{xy}$) was used.

Major findings:

The results of the study are as follow:

(1) The mean scores of Chinese teachers’ perception of the teachers’ roles seemed to be more in favour of the teacher as expert, authority and model compare to the roles as facilitator and delegator.

(2) Some differences MANOVA tests showed that the younger group of teachers (20-30 years old) was less likely to adopt the role of expert and authority than other age group. The elder group (over 50 years old) of teachers was less likely to adopt the role of facilitator and delegator compared to the younger groups of teachers.

(3) t-test results show that there was no significant difference between female and male teachers in their perceptions of teachers’ role.

(4) Pearson Product Moment Correlation Co-efficient ($r_{xy}$) indicated the significant relationship between teacher profiles (perception of teachers’ roles) and their adoption of educational technology.

(5) In the cluster analysis were conducted to understand teacher profiles based on their dominant perceptions of teachers’ roles. The results show that 35% of the teachers preferred the expert/authority profile; 24% of them belonged to the expert/authority model profile; about 18% of the teachers supported the facilities/delegator profile; and 23% of the teachers supported both the facilitator and expert roles.
Study 4: A Study of the Success of Changing Roles of Teachers in the age of Globalization and Technological Changes: Evidence from Secondary Schools in Bangkok, Thailand (Watthanapong Sirisakul.: 2010)¹

Objectives of the study:

This study has four objectives, as follows:

(1) To evaluate the degree of success of changing roles of teachers in the age of globalization and technological changes in secondary schools.

(2) To compare the mean scores of the degree of success of changing roles of teachers in the age of globalization and technological changes in secondary schools classified by size, type and area.

Sample of the study:

In this research, the unit of analysis is the teachers in secondary schools in Bangkok with a total number of 2,736. The sample was selected by stratified random sampling from 12 secondary schools which were located in Bangkok, Thailand. Applying the size of sample suggested by Krejcie and Morgan, the sample size is 338 secondary school teachers.

Tool used in the study:

In order to collect the data, the scale which measure success of changing roles of teachers in the age of globalization and technological changes was used. This scale is arranged into four parts. First it dealt with general data, including demographics of the respondents and school characteristics, such as school size (number of students), type and area. Second, it covered the roles of teachers in the age of globalization and technological changes. Third, it dealt with the obstacle of teachers to perform the effective roles of teachers in the age of globalization and technological changes. Fourth, it concerned to the teachers’ opinion regarding the future roles of teachers in the age of globalization and technological changes.
Research design:

This study is descriptive research which aims to seek new knowledge to a social phenomenon. In this circumstance, mean and standard deviation of the degree of success of changing roles of teachers in the age of globalization and technological changes in secondary school were investigated. In order to find out the difference between mean scores of the degree of success of changing roles of teachers in the age of globalization and technological changes in secondary school classified by size, type and area, t-test (independent) and Analysis of Variance (ANOVA) were applied.

Major findings:

It was found from the study that:

(1) The degree of success of changing roles of secondary school teachers in the age of globalization and technological changes was found at moderate level.

(2) The degree of obstacle of secondary school teachers to perform the effective roles in the age of globalization and technological changes was at high level.

(3) The teachers’ opinion regarding the future roles of teachers in the age of globalization and technological changes was at moderate level.

(4) There was the significant difference between mean scores of the degree of success of changing roles of teachers in the age of globalization and technological changes in secondary school classified by size, type and area.

(5) There was no significant difference between mean scores of the degree of obstacle of teachers to perform the effective roles of teachers in the age of globalization and technological changes classified by size, type and area.

(6) There was the significant difference between mean scores of the teachers’ opinion regarding the future roles of teachers in the age of globalization and technological changes classified by size, type and area.
Study 5: A Study of the Role of the Teacher in the Age of Technology (Tony, E.M.: 2010)

Objective of the study:
The present study aimed to study the role of the teacher in the age of technology. The study, therefore, aims as follow:

(1) To study the level of the role of the teacher in the age of technology
(2) To compare the mean scores of the role of the teacher in the age of technology classified by sex, subject of teaching (Mathematics, Science, English language and Social studies) and level of education (pre-primary, primary and secondary education).

Sample of the study:
Participants of the study consisted of 450 teachers in pre-primary, primary and secondary schools located in Bangkok. The stratified random sampling was used for selection of sample.

Tool used in the study:
The scale which measures the role of the teacher in the age of technology was used for data collection. It consisted of 80 statements and divided into four sections. The first dealt with the teachers' opinion regarding the changing roles of teachers in the age of technology. Second section concerned to teacher's competencies for using technology in education. Third section referred to problem of integrating technology in education. Forth section covered on the current practice of using technology in teaching and learning process.

Research design:
The survey research method was used for the study. Teachers were responded a scale dealing with the role of the teacher in the age of technology. Mean and standard deviation was used to determine the level of role of the teacher in the age of technology. Hypotheses were tested using t-test (independent) and analysis of variance (ANOVA).

Major findings:
It was found from the study that:
1. The role of the teacher in the age of technology in total score was found at moderate level. The teachers' opinion regarding the changing roles of teachers in the age of
technology was found at moderate level whereas the teacher’s competencies for using technology in education and the current practice of using technology in teaching and learning process was found at low level. The problem of integrating technology in education was found at high level.

2. There was no significant difference between mean scores of the role of the teacher in the age of technology in total score and in different section i.e. teachers’ opinion regarding the changing roles of teachers in the age of technology, teacher’s competencies for using technology in education, problem of integrating technology in education, and current practice of using technology in teaching and learning process classified by sex, subject of teaching and level of education.

**Study 6: A Study of the Role of Teachers in the 21st Century.** (Falus, I.V. (2010))

**Objectives of the study:**

This study attempted to examine the role of teachers in the 21st century which was emphasized on the teachers’ ICT skills. The objectives of the study were as follow:

(1) To study the level of role of teachers in the 21st century which was emphasized on the teachers’ ICT skills

(2) To compare the mean scores of role of teachers in the 21st century which was emphasized on the teachers’ ICT skills classified by sex, age and teaching experience

**Sample of the study:** The sample of the study consisted of 322 secondary school teachers. The stratified random sampling technique was used for selection of sample.

**Tools used in the study:**

The scale which measures the role of the teachers in the 21st century was used for data collection. It consisted of 60 statements and divided into four sections. The first section dealt with the role of teachers in improving of knowledge base on ICT in education. Second section concerned to the role of teacher in integrating ICT in teaching and learning process. Third section referred to the role of teachers in maximizing ICT in curriculum. Fourth section concerned to the barriers to adopt ICT for classroom learning.
Research design:

This study is descriptive research which aims to investigate the role of teachers in the 21st century which was emphasized on the teachers’ ICT skills. The response of secondary school teachers on the scale which measures the role of the teachers in the 21st century was calculated for determining of mean and standard deviation. In order to find out the difference between mean scores of the role of teachers in the 21st century rated by secondary school teachers belonging to different groups of sex, age and teaching experience, t-test (independent) and Analysis of variance (ANOVA) were applied.

Major findings:

The results of the study were as follow:

(1) The level of role of teachers in the 21st century which was emphasized on the teachers’ ICT skills in total score was at low level.

(2) The role of teachers in improving of knowledge base on ICT in education, the role of teacher in integrating ICT in teaching and learning process and the role of teachers in maximizing ICT in curriculum were at low level whereas the barriers to adopt ICT for classroom learning was at high level.

(3) There was no significant difference between mean scores of role of teachers in the 21st century in total score and in different sections i.e. the role of teachers in improving of knowledge base on ICT in education, the role of teacher in integrating ICT in teaching and learning process, the role of teachers in maximizing ICT in curriculum and the barriers to adopt ICT for classroom learning rated by secondary school teachers belonging to different groups of sex.

(4) There was the significant difference between mean scores of role of teachers in the 21st century in total score and in different sections i.e. the role of teachers in improving of knowledge base on ICT in education, the role of teacher in integrating ICT in teaching and learning process, the role of teachers in maximizing ICT in curriculum and the barriers to adopt ICT for classroom learning rated by secondary school teachers belonging to different groups of age and teaching experience.
Study 7: A Study of the Teachers’ Opinion Regarding to the Teachers’ New Role in the Technology-Supported Classroom (Hellinger, M.B.: 2010)\textsuperscript{10}

Objectives of the study:
This study aimed to explore the teachers’ opinion regarding to the new role of teachers in technology-supported classroom. The study, therefore, aims as follow:

(1) To determine the level of the teachers’ opinion regarding the new role of teachers in technology-supported classroom

(2) To determine the difference between mean scores of the teachers’ opinion regarding the new role of teachers in technology-supported classroom rated by teachers belonging to different groups of sex, age and teaching experience.

Sample of the study:
Participants of the study consisted of 315 teachers of primary schools. The stratified random sampling was used for selection of sample.

Tool used in the study:
The scale which measures the teachers’ opinion regarding the new role of teachers in technology-supported classroom was used for data collection. It consisted of 80 statements which were divided into three sections. The first deals with the teachers’ opinion regarding the traditional roles (i.e. class leader or director, lecturer, discussion leader) of teachers. Second section concerned to teacher’s opinion about the new role in classroom that utilized innovative technology-supported practices. Third, the new teachers’ roles were identified about the instructional designer, trainer, collaborator, team coordinator, advisor, monitoring and assessment specialist. Each role is associated with specific activities and is made possible by the use of technology in support of project based learning and inquiry based instructional methods.

Research design:
The survey research method was used for the study. Teachers were responded a scale dealing with the teachers’ opinion regarding the new role of teachers in technology-supported classroom. Mean and standard deviation was use to determine the level of
Major findings:

It was found from the study that:

(1) The teachers’ opinion regarding the new role of teachers in technology-supported classroom was found at moderate level. The teachers’ opinion regarding the traditional roles (i.e. class leader or director, lecturer, discussion leader) of teachers was found at high level. The teacher’s opinion about the new role in classroom that utilized innovative technology-supported practices and the new teachers’ role about the instructional designer, trainer, collaborator, team coordinator, advisor, monitoring and assessment specialist was found at moderate level.

(2) There was no significant difference between mean scores of the new role of teachers in technology-supported classroom (traditional roles i.e. class leader or director, lecturer, discussion leader), the new role in classroom that utilized innovative technology-supported practices and the new teachers’ role about the instructional designer, trainer, collaborator, team coordinator, advisor, monitoring and assessment specialist) rated by male and female teachers.

(3) There was the significant difference between mean scores of the new role of teachers in technology-supported classroom (traditional roles i.e. class leader or director, lecturer, discussion leader), the new role in classroom that utilized innovative technology-supported practices and the new teachers’ role about the instructional designer, trainer, collaborator, team coordinator, advisor, monitoring and assessment specialist) rated by teachers belonging to different groups of age and teaching experience. The younger and less teaching experience teachers obtained greater mean scores of teachers’ opinion regarding the new role of teachers in technology-supported classroom than the older and more teaching experience teachers.

Objectives of the study:

This study aimed to investigate the teachers’ roles in building leadership in the era of globalization and technology. The study, therefore, aims as follow:

(1) To compare the level of the teachers’ roles in building leadership in the era of globalization and technology in total score and in different aspects i.e. the teachers’ role in building instructional leadership, the teacher’s role in building leadership using ICT in teaching and learning practices, and the teachers’ roles in building leadership of creating ICT learning environment.

(2) To compare the mean scores of the teachers’ roles in building leadership in the era of globalization and technology in total score and in different aspects i.e. the teachers’ role in building instructional leadership, the teacher’s role in building leadership using ICT in teaching and learning practices, and the teachers’ roles in building leadership of creating ICT learning environment with regards to sex and age.

Sample of the study:

The subjects in this study were 453 teachers from 23 elementary schools in Northern part of Thailand. The stratified random sampling technique was used for selection of sample.

Tool used in the study:

The scale which measures the teachers’ roles in building leadership in the era of globalization and technology was used for data collection. It consisted of 60 statements and divided into three sections. The first dealt with the teachers’ role in building instructional leadership. Second section concerned to teacher’s role in building leadership using ICT in teaching and learning practices. Third section concerned to teachers’ roles in building leadership of creating ICT learning environment.

Research design:

The survey research method was used for the study. Teachers were responded a scale dealing with the teachers’ roles in building leadership in the era of
globalization and technology. Mean and standard deviation was used to determine the level of teachers’ roles in building leadership in the era of globalization and technology in total score and in different aspects i.e. the teachers’ role in building instructional leadership, the teacher’s role in building leadership using ICT in teaching and learning practices, and the teachers’ roles in building leadership of creating ICT learning environment. Hypotheses were tested using t-test (independent) and analysis of variance (ANOVA).

**Major findings:**

It was found from the study that:

1. The teachers’ roles in building leadership in the era of globalization and technology in total score were found at moderate level. The teachers’ roles in building instructional leadership were found at moderate level whereas the teachers’ roles in building leadership using ICT in teaching and learning practices as well as the teachers’ roles in building leadership of creating ICT learning environment were found at low level.

2. There was no significant difference between mean scores of the teachers’ roles in building leadership in the era of globalization and technology in total score and in different aspects i.e. the teachers’ role in building instructional leadership, the teacher’s role in building leadership using ICT in teaching and learning practices, and the teachers’ roles in building leadership of creating ICT learning environment rated by male and female teachers.

3. There was the significant difference between mean scores of the teachers’ roles in building leadership in the era of globalization and technology in total score and in different aspects i.e. the teachers’ role in building instructional leadership, the teacher’s role in building leadership using ICT in teaching and learning practices, and the teachers’ roles in building leadership of creating ICT learning environment rated by teachers belonging to different groups of age. The younger teachers obtained smaller mean scores of teachers’ roles in building instructional leadership than the older teachers. The older teachers obtained smaller mean scores of teachers’ roles in building leadership using ICT in teaching and learning practices and the teachers’ roles in building leadership of creating ICT learning environment than the younger teachers.
Study 9: A Study of the Strengthening Roles of Teachers in a Changing World (Shulmen, F.L.: 2011)\textsuperscript{12}

Objectives of the study:

The purposes of this study were to investigate the strengthening roles of teachers in changing world. The study, therefore, aims as follow:

(1) The level of the strengthening roles of teachers in changing world i.e.

\begin{itemize}
  \item The roles of teachers in improving learning management
  \item The roles of teachers in improving ICT literacy
  \item The roles of teachers in using technology as a means for delivering education service
  \item The roles of teachers in providing technological resources for teaching purpose
\end{itemize}

(2) To compare the difference between mean scores of the strengthening roles of teachers in changing world in total score and in different aspects i.e. roles teachers in improving learning management, roles teachers in improving ICT literacy, roles teachers in using technology as a means for delivering education service, and roles teachers in providing technological resources for teaching purpose rated by teachers belonging to different gender and age group.

Sample of the study:

This study was the descriptive research conducted in 2009-2010 to address the two objectives mentioned above. Sample of the study consisted of 564 teachers from 17 secondary schools. The scale which measures the strengthening roles of teachers in changing world was delivered to the teachers in different subjects (i.e. Mathematics, Science Social Studies, English language and Physical education). The study was also attempt to select a representative sample in terms of gender and age.

Tools used in the study:

The scale which measures the strengthening roles of teachers in changing world was the tool used in the study. It consisted of 70 items and divided into four sections i.e.:

\begin{itemize}
  \item The roles of teachers in improving learning management,
\end{itemize}
The roles of teachers in improving ICT literacy,

The roles of teachers in using technology as a means for delivering education service,

The roles of teachers in providing technological resources for teaching purpose

Test-retest method was used to establish the reliability of the scale. It was found that the $r_{xy}$ value was 0.81.

Research design:

This study is descriptive research which aims to investigate the strengthening roles of teachers in changing world. The response of teachers on the scale which measures the strengthening roles of teachers in changing world was calculated for determining of mean, standard deviation. In order to find out the difference between mean scores of strengthening roles of teachers in changing world rated by teachers belonging to different groups of gender and age, t-test (independent) and ANOVA were applied.

Major findings:

It was found from the study that:

(1) The strengthening roles of teachers in changing world in total score and in different aspects i.e. roles of teachers in improving learning management, roles of teachers in improving ICT literacy, roles of teachers in using technology as a means for delivering education service, and roles of teachers in providing technological resources for teaching purpose were found at moderate level.

(2) There was no significant difference between mean scores of the strengthening roles of teachers in changing world in total score and in different aspects i.e. roles of teachers in improving learning management, roles of teachers in improving ICT literacy, roles teachers in using technology as a means for delivering education service, and roles teachers in providing technological resources for teaching purpose rated by male and female teachers.

(3) There was the significant difference between mean scores of the strengthening roles of teachers in changing world in total score and in different aspects i.e. roles of teachers in improving learning management, roles of teachers in improving ICT
literacy, roles of teachers in using technology as a means for delivering education service, and roles of teachers in providing technological resources for teaching purpose rated by teachers belonging to different age group. The younger teachers obtained greater mean scores of strengthening roles of teachers in changing world in total score and in different aspects i.e. roles of teachers in improving learning management, roles of teachers in improving ICT literacy, roles of teachers in using technology as a means for delivering education service, and roles of teachers in providing technological resources for teaching purpose than the older teachers.

3.4 UNIQUENESS OF THE PRESENT STUDY

After the review of nine past researches and the documentary studies on literature related the globalization and technologies changes and the comparison with the present research, it was found the uniqueness of the present study as follow:

(1) It was found from the past studies that three major teachers’ roles in the context of globalization and technological changes were investigated i.e.

❖ Specific teachers’ roles: There were many specific teachers’ roles such as to be a manager, mentor, developer, motivator, expert, personal model, facilitator, class leader or director, discussion leader, delegator, instructional designer, trainer, collaborator, team coordinator, advisor, monitoring and assessment specialist.

❖ Teachers’ roles in building instructional leadership

❖ Teachers’ roles in building leadership using ICT in teaching and learning process i.e. Improving knowledge base on ICT in education, Integrating ICT in teaching and learning process, Maximizing ICT in curriculum, Creating and improving ICT learning environment, Improving ICT literacy, Using technology as a means for delivering education service, and Providing technological resources for teaching purpose

In the present study, the present investigator decided to define the changing roles of teachers in the context of globalization and technological changes into five aspects i.e.

❖ Improve the teaching-learning process for increasing the educational quality

❖ Integrate information communication technology in education
Infuse information communication technology into curriculum
- Improve the teacher’s competencies on ICT skills
- Develop ICT for enhancing the learning environment.

These five aspects of the teachers’ roles in the context of globalization and technological changes were not appeared in any research.

(2) It was found from the past studies that several tools were used for data collection i.e. scale which measures the roles of university teachers in a digital era, the teachers’ roles survey developed by Grasha and Riechmann-Hruska, scale which measures the role of teachers in the 21st century, the scale which measures the teachers’ roles in building leadership in the era of globalization and technology, and the scale which measures the strengthening roles of teachers in the changing world.

In the present study, the scale which measures the changing roles of teachers in the context of globalization and technological changes was used for data collection. It consisted of five parts i.e. Improve the teaching-learning process for increasing the educational quality, Integrate information communication technology in education, Infuse information communication technology into curriculum, Improve the teacher’s competencies on ICT skills, and Develop ICT for enhancing the learning environment. There were 100 statements in the scale which were differed from the past scale. Each statement has five levels of frequency i.e. “very frequently”, “frequently”, “occasionally”, “rarely”, and “very rarely”.

The tool used in the present study was constructed and standardized by the researcher. It was established for the item analysis (i.e. discrimination, reliability and validity).

For establishment of discrimination of the scale, the Phi-Coefficient correlation (\(\phi\)), Chi-square (\(\chi^2\)) and t-test value were applied. In order to establish the reliability of the scale, test-retest method, split-half method, Rulon formula, and Flanagan formula were applied. Construct validity was used for establishment of validity of the scale. Item-Test Correlation was applied to the data obtained from 100 physical education teachers. The Pearson Product Moment was calculated for the \(r_{xy}\) value from the total scores and the score of each item.
It can be said that this tool is the first construction and standardization. It was a unique tool which cannot be seen in any research before.

(3) It was found from this study that sex, age, educational qualification, teaching experience and monthly salary of physical education teachers were considered to be the independent variables of the study. Therefore, this research is a unique research or only one research which investigated five aspects of the changing roles of teachers in the context of globalization and technological changes, using teachers’ gender, age, educational qualification, teaching experience and monthly salary to be the independent variables.

(4) Sample of the past research was the pre-primary school teachers, primary school teachers, secondary school teachers and university lecturers but the sample of the present research was the physical education teachers. This is also the uniqueness of the present study.

3.5 SUMMARY

The second chapter discussed about the review of the past studies related to the changing roles of teachers in the context of globalization and technological changes.

There are 9 past studies presented in this chapter. All of 9 studies are related to the changing roles of teachers in the context of globalization and technological changes.

Some researches studied about the possible domains of application of globalization and technologies in curriculum development, the main barriers of application of globalization and technologies in curriculum development, the essential supports are needed for application of globalization and technologies in curriculum development, and the advantages and disadvantages of application of globalization and technologies for curricular activities.

One research studies about the perception of teachers on their roles and adoption of educational technology including the willingness to adopt educational technology i.e. willingness to invest time, willingness to learn, willingness to use ICT for teaching in
classroom, willingness to adopt online instruction and learning, willingness to use ICT for preparation of lessons and assessment of students.

It was found from the past studies that teachers’ gender did not effect on the teachers’ roles in the context of globalization and technological changes whereas age and teaching experience did effect on the teachers’ roles in the context of globalization and technological changes.

After the theoretical orientation and review of the past studies regarding changing roles of teachers in the context of globalization and technological changes, plan and procedure will be discussed in chapter 4.
REFERENCES


