## CHAPTER 2
THEORETICAL PERSPECTIVE AND REVIEW OF THE PAST STUDIES.

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CHAPTER 2
THEORETICAL PERSPECTIVE AND REVIEW
OF THE PAST STUDIES

The research has an objective to study about level in perception of the value of instructional innovation in different subjects of teachers who teach in primary and secondary schools. In addition, another study has been made as to whether or not teachers who have different characteristics in bio-sociology and background will have different level in perception of instructional innovative values. This research, will be mentioned separately on educational innovation, category of educational innovation, instructional innovation, category of instructional innovation, value of instructional innovation, perception of innovation, variables in characteristics aspect of bio-sociology and background as well as relevant research work. Here in this chapter the researcher has tried to clear the construct on the basis of researches. The past researches in Thailand and abroad in the last caption 2.1 EDUCATIONAL INNOVATION

According to Rogers (1983: 11) innovation in a thought, a method or practical method which general individual person perceives that it is a new thing or seems to be a new thinking, but it is not necessary to be a new knowledge as some people may have known about it but it has not yet developed into a good or bad attitude towards such knowledge and has no sign of acceptance or refusal apart from the fact that such knowledge is able to be improved or changed so that working performance is more efficient than the present one.
Prueng Kumut (1975: 25) gave a suggestion guideline relevant to characteristics of educational innovation by classifying it into 5 characteristics summarily as follows:-

1. Whether or not a thought or educational deed has been done in the past or we do not know about it in spite of the fact that it exists long ago, but that it has just been used in our society.

2. A thought or performance according to the new education may be due to altering or improving the existing one.

3. The performance has been in existence, but that it is not suitable to that era, later when the society changes, they have revived the old thing and has become successful.

4. There happens to be new event where different components form together into a new system or because there are new things coming up at the same time as there is a thought to do a certain thing and can foresee that such method will help to attain the required target.

5. The thought or such deed is really new because nobody has ever thought about it before.

Samlee Tongthiew (1983: 1-2) mentioned that educational innovation means new things in education either it be suggestion guideline, educational system, technological method including hardware (technological equipment) and books or software, but the things mentioned above must be new for those who are using them. These things may have happened long ago, but if they are new things and have just been known, they can be regarded as innovation.

In addition, Boonkua Kuanhavej (1987 : 5) and Ubolpong Wattanaseri (1984: 9-10) have given meaning in educational innovation that it means application of new things, which may be in the form of thought, principle for performing, process of deed including invention,
to the educational system by aiming at changing educational system to a more efficient one through various methods, such as, arranging system to make a research in order to verify efficiency of such educational system, etc.

Yupin Pipitkul and Orapan Tanbanchong (1988:14) have given meaning of educational innovation that it means new suggestion guideline, new method or new thing which is applied for use in changing educational circle or applied for use in order that educational aspect of work would be more efficient.

According to the technologists' opinions as have been mentioned above, it may be concluded that educational innovation means application of method, principle for performing and new suggestion guideline in education, which have passed through experiment and have developed in steps, for use in changing or improving performance guideline in education, by having an aim to increase educational efficiency to a higher one.

2.2 CATEGORY OF EDUCATIONAL INNOVATION

Sunan Pattamakan (1985 : 1-2) has mentioned about educational innovation as follows:-

1. Innovation in education system, i.e. individual education, long distance teaching system, informal teaching system, out-of-school education system.

2. Curriculum innovation, i.e. continuous curriculum integrative technique curriculum, adult education curriculum.

3. Instructional innovation, i.e. programme teaching pattern, module, micro teaching, repeated teaching.

4. Technological and educational media innovation, i.e. computer to help teaching, programmed instruction, teaching kit,
educational broadcast and television.

5. Measurement and evaluation innovation, i.e. norm referenced measurement, criterion referenced measurement, multi-summary measurement, analysis.

6. Educational administration innovation, i.e. use of theory in arranging administrative system, use of computer in arranging data system, etc

Urai Thavorn-ngamyingsakul (1985: 8-9) has classified educational innovation into 5 categories:

1) **Curriculum innovation** means suggestion guideline or new process including new inventions which apply for use in changing curriculum, such as, integrated curriculum, individualized curriculum, activity or experience curriculum.

2) **Instructional innovation** means suggestion guideline or new process including new inventions which will apply for use in learning and teaching, i.e. peer tutoring, individualized instruction, role play, group process, mastery learning, remedial teaching, learning center, simulation, micro teaching, integrative techniques, inquiry method, reduced instruction time, instructional package, project technique.

3. **Educational media innovation** means suggestion guideline or new process including new inventions which is applied for use in teaching media totalling 3 subjects which are educational television, school broadcast, programmed instruction.

4. **Measurement innovation** means suggestion guideline or new process including new inventions which will be implemented in measuring result and evaluating result of study totalling 7 subjects, i.e. norm referenced measurement, criterion referenced measurement,
pretest, formative evaluation, automatic promotion, summative promotion, diagnostic evaluation.

5. Administration innovation means suggestion guideline or new process including new method or the thing which was used in the past but is brought up for re-use in order to create a change in administrative work as well as in educational service totalling 9 subjects, i.e. non-graded school, school within school, preparing joint education amongst 9 schools, use of bicycles in order to extend compulsory education in branch schools, flexible scheduling, student council, integrate schools together and arrange in branch school, educational spelling as well as improving classrooms by collecting two age groups of students.

Pramuan Puttanon (1986: 137-163) has classified teaching innovation into 17 categories, that is, party instruction, programmed teaching, skill relation instruction, Gayey’s 9 steps of instruction, individualized instruction, learning center teaching, simulation teaching, group process, inquiry method teaching, peer tutoring, dividing groups of students according to skill, micro teaching, flexible 16 scheduling, project for promoting ability in teaching.

However from the total above mentioned educational innovation, instructional innovation of teachers is considered one of the important educational innovations. This is because teachers are the ones who teach and apply the curriculum for use in arranging various experiences to the students in order that the students can learn to the best of their capability.

2.3 INSTRUCTIONAL INNOVATION

Ladda Sookpridi (1979: 19-20) has given meaning of instructional innovation that instructional innovation means a thought
and new performance method in learning and teaching wherein the said thought and new performance method has scope up to the thought and new performance method which arises from the existing thought and can get along well together with new things. In addition, it still includes the thought and performance method which is old from another place or which has been done in the past, but in the new situation or in the present time, it is suitable to apply for use in learning and teaching which is quite similar to Urai Thavorn-ngarmyingsakul (1985: 8-9) who has given meaning of learning and teaching that it means suggestion guideline or new process as well as new inventions which is implemented for use in learning and teaching.

Boonkua Kuanhavej (1978: 1), Nipon Sookpridi (1990 :15) commented that educational innovation and teaching is a thought and new deed in educational system which has been verified that it is the best in the present time in order to promote learning and teaching to a more efficient one.

Regarding the characteristics of instructional innovation, there are many characteristics. Herein 3 items will be mentioned, i.e.
1) Qualification and characteristics of instructional innovation;
2) Role of instructional innovation, and 3) Implementing the innovation for use in learning and teaching.

1. Qualification and characteristics of instructional innovation

Samlee Tongtiew (1983 : 28-30) has mentioned about qualification and characteristics of instructional innovation which can be summarized as follows:-

1) Expenses in providing and using such innovation must not be too expensive. Maintenance of educational innovation which is
too expensive is more difficult than other innovations.

2) Facility in using innovation is the thing to specify how much it is accepted by the society. If the innovation which has been provided is unable to use conveniently in learning and teaching, such innovation is difficult to be accepted.

3) Innovation which is ready-made in sets with complete equipment will be accepted in society better and faster than innovation which is split up into pieces.

4) The difficulty and easiness in using the innovation is another important factor. If the innovation which is applied for use is difficult and needs time to train, acceptance to it is naturally decreased.

5) Innovation which is created in the society which is different from the society which used such innovation will result in not accepting such innovation.

2. Role of instructional innovation.

Ladda Sookpridi (1979: 22) has mentioned about the role of instructional innovation summarizing as follows:-

1) It promotes individualized instruction.

2) It save time in teaching and labour-saving of teachers.

3) It helps to change idea between teacher and students in a more rapid way.

4) It helps the learner to have wider experience.

5) It promotes the learner to learn how to think and remedy problems better.

6) It changes the role of teacher from feeder of
knowledge into the one who indicates guideline and arranges learning programme to the learners.

7) It promotes learning to a more efficient one because teaching does not aim at content alone but it is method of learning and seeking for knowledge by oneself.

3. Implementing the innovation for use in learning and teaching

When innovation is implemented for use in learning and teaching, it ought to be used correctly and suitably with various groups as Ladda Sookpridi (1979: 21-22) has mentioned about applying the innovation for use in learning and teaching that implementing the innovation for use in learning and teaching can be done in 2 characteristics summarily as follows:-

1) Large group instruction is to teach a great number of pupils. Learning in large group must use suitable equipment and system. The aim of using the innovation in this characteristics is to teach a great number of students by using a few teachers and make it efficient in teaching too, such as, instruction given by television and broadcast, etc.

2) Small group or individual instruction is to implement the innovation for use in teaching individual student, such as using programmed instruction, instructional set, teaching kit, learning centre, etc.

In addition, Ladda Sookpridi (1979: 22) has further commented that whatever characteristics this innovation is used, the thing which has to be considered is suitable situation and environment, In applying the innovation for use, one must consider about important things summarized as follow:-
1. Efficiency of teaching is the aim of learning and teaching. Select the instructional innovation to harmonize with the aim.

2. Be economical is to try to use learning resource in an economical way either it be human, tools, equipment, time or place.

3. In implementing the innovation for use in learning and teaching, accomplishment in learning and teaching must be higher than the resource used.

2.4 CATEGORY OF INSTRUCTIONAL INNOVATION

Prayat Jiravorapong (1977: 16) has classified category of instructional innovation into 2 aspects, i.e. method innovation and media instructional innovation.

(1) **Method innovation** is the innovation which concerns new method used for changing the existing learning and teaching in order to create efficiency in learning and teaching wherein the method relevant to learning and teaching comprised of method of teaching and teaching technique which Yupin Pipitkul (1983: 201-287) has mentioned about method of teaching summarily as follow:-

1.1 Demonstration teaching method is the teaching method which the teacher shows and gives knowledge to the students by using instructional media which is in specific shape and the learners obtain direct experience.

1.2 Teaching method by using questions is the teaching method which aims at giving knowledge to students by asking questions and obtaining response. In using this type of questioning, the teacher may inquire by using questions to interrupt with other methods of teaching.
1.3 Experiment method of teaching is teaching method which aims at letting the students learn by performing a deed or by observing. It is to bring specific shape to explain abstract concept. The students will search for conclusion form such experiment by themselves. This experiment method of teaching may be done in a group or individually.

1.4 Controversial teaching method is teaching method which aims at letting the pupils learn how to work in a group by proposing opinion in order to find a conclusion together.

1.5 Project techniques teaching method is teaching method where a teacher instructs the students to perform an activity which the students are interested and make a proposal by themselves. In this case, the students implement independently. The teacher is a mere assistant and gives advice when necessary.

1.6 Programmed instruction is a teaching method where the students study by themselves. The teacher brings the lesson to the students to use and follows up until the students are able to make a conclusion from such programmed instruction and there is also an evaluation form.

1.7 Teaching method by using individual instruction set is learning and teaching set which the students study by themselves. In that learning and teaching set, it comprises of instruction card, activity card, content card, exercise card or working card with answers as well as test card with answers. In that learning and teaching set, there will be media for learning and teaching fully so that the students could use in learning such subject.
1.8 Teaching method by using document as guideline is a tool which lets students learn by themselves, for filling in words, but it does not give answers to the questions, in order to let the students work independently without worrying about the answers given by the teacher. In giving answers, the teacher may let the students do for certain parts, then there is answer or let the students finish all the lessons and then give answers.

1.9 Teaching method by remedying problem is the teaching method which the teacher encourages the students to use their effort in remedying problem in a reasonable way by using mental resolution, criteria, conclusion, knowledge and experiences relevant to that subject.

1.10 Teaching method in analytical pattern is teaching method which classify such problems from what we do not know into what we know through reasoning.

1.11 Synthesis teaching method is teaching method which brings minor conclusions together by depending on various mental solutions, criteria, formula, definitions until total conclusion is obtained.

1.12 Teaching method in lecture pattern is teaching method where teacher raises many examples and lets the students observe, consider, discover for pattern in order to conclude.

1.13 Non-significant teaching method is teaching method which depends on rule or formula which used to be learnt, to help verify or remedy problem in finding another conclusion.

1.14 Discovery teaching method is teaching method which the teacher encourages or persuades the students to meet with
problem or an event and lets the students try to seek method for remedying that problem until they are able to summarize formula, definition, etc. as required by the teacher.

1.15 Integrated teaching method is teaching method wherein many methods are used together in order to find a conclusion or remedy a problem on any matter, such as, teach by demonstrating method with question which brings towards teaching in lecture pattern.

As regards teaching technique which is method for inserting while reinforced teaching is being implemented, It will enable learning to be more efficient wherein Yupin Pipitkul (1983: 304-333) has mentioned as follows:-

1. Technique in raising example where there are strange from the book is the thing to encourage the learners to become interested. This is regarded as a technique which needs to be trained, prepare (the lesson) in advance and the existing experience because while the teacher is teaching continuously, he will be able to raise question immediately.

2. Procurement technique or use teaching kit by letting the learners help to do by using teaching kit which is easy to find and economical in order to enlighten the burden of the teacher and will enable the learners to have initiative thinking.

3. Technique in creating and reinforcing incentive is one of the important things. The teacher will have to find mechanism to create incentive to enable the learners to meet with success and reinforce the incentive in order to enable the learners to learn that behaviour which they show out are accepted which will create encouragement in continuing study.
(2) **Media instruction innovation** is the innovation which will help the students to understand the lessons more clearly. It is used for teaching things which are in specific shape towards the thing which is an abstract concept and saves time in teaching wherein Yupin Pipitkul and Orapan Tanbanchong (1989: 18-19) have mentioned about learning and teaching media which can be concluded that learning and teaching media comprises of:

2.1 Material is classified into:

1) Teaching material in printed matter, i.e. teacher's manual, teaching project, periodical, pamphlet, reading book.

2) Invented material is the thing which the teacher can do by themselves. One may use paper, wood, plastic and other things which the teacher has invented in order to use it as learning and teaching component.

3) Permanent materials, i.e. lecture board, graph board, genuine thing, model, etc.

4) Waste material, i.e. chalk, etc.

2.2 Equipment is instructional media, such as, tool category, i.e. overhead projector, television, slide projector and filmstrips, etc.

2.3 Activity. Arranging activities is regarded as learning and teaching media, i.e. arranging exhibition, singing, guessing a riddle, cartoon.

2.4 Learning and teaching media from environment is learning and teaching media which can easily be found because it is surrounding us. When entering a classroom, the teacher may use rubber floor tile to find a square area or the blackboard, door window, copy-book, book which are rectangular. Teachers ought to use things
surrounding the students to use as media for learning and teaching.

In this study, instructional innovation was specified in 20 innovations by adhering to arranging category of innovation of Prayat Jiravorapong (1977: 16) and teaching method as well as technique in teaching of Yupin Pinitkul (1983: 201–289, 304–333), Yupin Pipitkul and Orapan Tanbanchong (1989: 18–19) and Petchara Petchkaew (1992: 100–101) compared about arranging current learning and teaching by arranging groups and classifying instructional innovation as follows:-

1. Innovation in method aspect comprises of:-

1.1 Innovation in teaching aspect. Normally, the teacher will teach by lecturing or explaining and showing reason as a major part, therefore, any teacher choosing new and different teaching method other than normal teaching it is regarded as that person’s innovation. Frames of study herein are:-

1.1.1 Demonstration teaching method. It is teaching method where the teacher shows and gives knowledge to the pupils by using media of learning and teaching in specific shape and the students will obtain direct experience.

1.1.2 Teaching method in a party. This is teaching method where more than 2 teachers jointly prepare lessons. Teaching and evaluating on the result of study of students is done in the same group which enables the students to gain knowledge in test and participate in learning activities widely, have independence in thinking and in making decision very well.

1.1.3 Experiment teaching method is teaching method which aims at letting the students learn by performing or by observing. It is to bring specific shape to explain abstract concept. The students will search for conclusion from such experiment by themselves. It may
be taught either in group or individually.

1.1.4 Group teaching method. It is teaching method which adheres to group as a principle point in implementing learning activity in order to train students to work in a group, have their mind widely opened, dare to show out, learn to adjust oneself, learn the role, duties and responsibilities of a good leader and good follower.

1.1.5 Teaching method by using programmed instruction. It is teaching method which enables the learner to perceive experience which has been arranged in series according to steps which the person who prepares the lessons believes that it will lead the students to the required level. The students will be able to learn by themselves, the teacher gives advice. There is an evaluation when lessons finalise. There are both characteristics which is used with teaching-aid kit and self-study type.

1.1.6 Teaching method by using individual learning and teaching kit. It is learning and teaching kit which the students are able to study by themselves. In that teaching kit, it comprises of instruction card, activity card, content card, exercise card or working card with answers as well as test-card with answers by having learning and teaching media in order that the students would use as component to such study.

1.1.7 Teaching method by using computer. It is teaching where students are able to study by themselves from the programme which the teacher has feeded in content according to steps of teaching in order to suit the students. It deputizes as teacher who is conversing with students. The students are able to study and revise lessons throughout the time and there is an immediate response in the form of result of study.
1.1.8 Teaching method for developing human capability according to suggestion guideline of Gayey. It is a teaching which adheres to the specified objectives as a principle point. It is arrangement of learning and teaching which emphasizes on developing ability of students to contain capability, that is, the fact, skill, intellectual, thinking strategy, attitude and movement skill.

1.1.9 Inquiry method of teaching is teaching method which emphasizes on developing ability in thinking about how to remedy problem through scientific method. It is to put question and answer. At first, the teacher is the one who raises questions in order to make the students accustomed with this method of study, then the teacher will try to let the learners raise questions and find answers by themselves.

1.1.10 Teaching method in lecture pattern. It is teaching method where the teacher raises may examples and then let the students observe, consider, discover in order to find pattern so as to conclude or classify such problems from what one does not know into what one knows through reason.

1.1.11 Non-significant teaching method. It is teaching method which depends on rule or formula which has been learnt in full to help verify or remedy problem in trying to find a conclusion once more or to obtain the total required conclusion.

1.1.12 Integrate teaching method. It is teaching method where may methods are mixed together in order to find a conclusion or to remedy a problem, such as, teaching by demonstration method together with questions in order to lead it towards lecture teaching, etc.
1.2 Teaching technique innovation. Teaching technique is an art which is applied while teaching is being implemented wherein majority of teachers have used it but not in every method. Any method which is brought up for re-use is regarded as innovation of such person. In this research study, they are:-

1.2.1 Technique in arranging learning/teaching as learning centre. It is to arrange condition of classroom which emphasizes on learning activity by classifying students into groups called activity centre. Activity in each group will be different as specified in the teaching set. Each student will have to learn in every centre so that it is regarded as having learnt the text in each unit in full as specified.

1.2.2 Technique in raising example and question differently from the book means the teacher uses method in raising example with different questions and comedy problem in order to create good atmosphere in class.

1.2.3 Peer tutoring technique. It is the method of teacher after teaching the content. After that let the students teach among themselves by letting the student who is smart to teach the students who are slower.

2. Innovation media in learning and teaching

Innovation media in learning and teaching also includes materials, equipment, activity and other learning and teaching media. The teacher must select the use in learning and teaching in specific shape to correspond with the content. The teacher may have used it but not every content, therefore, the new thing which the teacher applies for use is regarded as innovation of such person, i.e.
2.1 Learning and teaching media in printed matter, i.e.
   1) Domestic and oversea journals relevant to learning and teaching
   2) Teacher's Manual
   3) Reading books

2.2 Learning and Teaching media in facility materials, i.e. media which is used for learning and teaching which is invented, such as, graph paper, magnetic board, nail board, invented material showing number of lines, chart showing value, etc.

2.3 Learning and teaching media in materials used for demonstration or experiment is learning and teaching media which has been invented for using in demonstration or experiment i.e. various media shapes, media showing formula, media material showing figures and amount system, media material showing area finding, media material showing feasibility, division/classification of component, trigonomety, cone-cutting, material media showing meaning in geometry or as well as programmed compute teaching media.

2.4 Equipment learning and teaching media, i.e. overhead projector, overlay transparent sheet in order to show the subject required to be seen according to steps, computer to help in learning and teaching, video and slides and sound.

2.5 Activity learning and teaching media, i.e. games for learning, cartoon for studying, arranging for exhibition board, and guess a riddle.

2.5 VALUE OF INSTRUCTIONAL INNOVATION

Instructional innovation has been discovered through
perserverence of educationists by depending on suggestive guideline in psychological learning in order to remedy problem or to develop learning and teaching to a more efficient and effective one, therefore, it is considered that instructional innovation is most valuable towards arrangement in learning and teaching of teachers, that is:-

1. It responds to difference between people. From study research in psychology, it enables us to learn that human beings are different in various aspects, i.e. physical aspect, interest, requirement, mentality, capability, emotion and social aspect. Arrangement in education has, therefore, emphasized on this suggestive guideline in this matter throughout the time by aiming at preparing learning and teaching according to experience, interest, ability of individual person. Hence, learning and teaching is divided into groups by using criteria, by using ability and intellectual as a criteria. But since number of students in class is still great, therefore, it is unable to promote suggestive guideline about difference of people in full. Hence, in the present time people have thought about instructional innovation in order to give opportunity to the learners to use the difference between people to be most beneficial in learning by self-study from programme, learning and teaching set, learning centre, learning without dividing into classrooms, etc.

2. It helps in reinforcing the students. In learning theory of Skinner which specifies that giving reinforcement is able to create learning and responsive behaviour in giving a reward or admiration, It is capable of changing responsive behaviour and learning will arise or will have a better benefit when using many
reinforcement. This shows the importance of reinforcement in the form of satisfactory response which enables a suggestive guideline in creating programme lesson and may categories of instructional innovation which helps the learner to learn about the result of his own deed immediately, i.e. teaching kit, etc.

3. According to Ladda Sookpridi (1979: 20-21) it helps in getting ready. Result of psychological research indicates that the students will study well when they are ready to learn and learning in what he is ready will naturally cause satisfaction also. Readiness in learning is the thing which is able to arrange, if we arranged lesson to suit the level of ability and physical development as well as arranging facilities which will help to learn well. From this suggestive guideline, it enables thinking of many instructional innovations, such as, self-study lessons, self-study set, learning centre, etc.

4. It helps about the use of time in studying. Previously, arranging time for teaching or time-table was normally arranged by using convenience as a criteria, such as, regarding hourly unit every for every subject every day. Learning in school is arranged precisely in semester or in a year. In the present time, there is a suggestive guideline in arranging teaching time to harmonize with characteristics of each subject which will spend unequal time for each subject. Certain subjects may use short interval but more often. Learning is not necessary to limit oneself in a narrow room only. The innovation which responds to this thinking is flexible scheduling, open university, ready-made lessons, postal study, etc.
5. According to Boonkua Kuanhavej (1979: 13-14) it helps to solve problems on expansion of technology and growth rate of population by using instructional innovation, such as, open university, learning by television and broadcast, postal study, ready-made lesson, learning set, etc.

Every category of instructional innovation is valuable towards helping to promote effectiveness in learning and teaching but in applying it for use one must consider about a suitable situation and environment. Each type of innovation is valuable in itself, such as, learning and teaching by using programmed lessons is valuable in giving opportunity to the learners to study by themselves in order to respond to the difference between people, etc. Therefore, in selecting to use instructional innovation to harmonize with the specified aim is very necessary to the teachers. If the teacher who teaches perceived the value of instructional innovation, in implementing the said innovation for use, it will certainly create benefit in arranging learning and teaching arithmetics more increasingly.

In making research study on acknowledging the value of instructional innovation, not much research study was made, i.e., Person (Person 1985: 67-75) had made a research on popularity in using innovation and perception value of teaching method of 60 primary class teachers in Fordworth, Texas wherein these teaching methods are individualized instruction, group instruction, programmed instruction, prescriptive-diagnostic instruction, continuous progress, computer instruction, competency-based instruction, outcome-based instruction, erudite instruction. It was found that the primary teachers use 9 methods of teaching wherein group instruction was evaluated that there
is least value in using because it has to receive exhorbitant cooperation from the group of teachers and more preparation time is used than normal teaching. But it is also valuable teaching method. As regards teaching method which is most valuable in using it is individualized instruction while teachers in the group who like and accept the innovation faster than other groups perceived in the value of computer instruction most of all.

In Thailand, we have not much found the researcher on perception of instructional innovative values, therefore, data for making an assumption of research is the thing which the researcher had set an assumption on research. Hence, the perception of instructional innovative values is interesting subject for study in order to learn how such teacher has the stage in perception of instructional innovative values so as to implement such data for beneficial use accordingly.

2.6 PERCEPTION AND ACCEPTION OF INSTRUCTIONAL INNOVATIVE VALUES

Innovation arises in the society from human effort in solving the problem in performing work to a more efficient one. Therefore, the perception of instructional innovative values is being aware of the importance in implementing it for use in preparing teaching of several subjects to a more efficient and efficacious one. After the perception of instructional innovative values, the teachers would be accepted the innovation. It means that the fact that a person brings in knowledge, thinking, performance method or new things to apply in improving working performance to a more efficient one.
In accepting the innovation of a person, it is one of the mental processes. A person may respond to the innovation at the first stage which is mental level. A person will develop like or dislike attitude to accept it or will refuse such innovation that until finally he may develop into making a decision to accept or refuse such innovation at practical stage or at behavioural stage wherein Rogers and Shoemaker (1971:76-120) have proposed process in accepting the innovation that it is the process that can arise in stages into 5 stages, i.e.

1) awareness stage;  
2) interested stage;  
3) evaluation stage;  
4) experimental stage;  
5) acceptance stage;

This suggestive guideline relevant to acceptance of the innovation of Rogers was at one time very popular amongst the researchers but later on somebody found out many defective parts, which are :-

1) Pattern of acceptance process ended in making decision to accept which, in fact, one may refuse or may not accept the innovation, therefore, acceptance process ought to change into a new name so as to give meaning to also cover the opportunity where there is unacceptance. Owing to the reason mentioned above, acceptance process of the innovation of Rogers (1983: 163-169) has, therefore, changed the name to "decision process relevant to acceptance of the innovation".

2) Various stages in acceptance process may not be arranged in continuous line and sometimes it may skip the stage, specifically experimental stage, there are many innovations which have been accepted
without experimenting. In addition, evaluation according to the fact exists in every stage throughout the process more than in the third stage only. Rogers has, therefore, cut out this stage by regarding that it is an evaluation throughout the process and avoided to use the part which concerns the change of persuasion function.

3) Normally, this process is not necessary to end up with acceptance always, there is equal opportunity in not accepting as well. Hence, Rogers has changed the work 'accept' to relate decision-making. Moreover, this process hardly ends at accepting or not accepting because people normally search for additional data to ascertain the rightness in making decision wherein such deed may result in changing from "acceptance" to "discontinuance" or from "not accepting" to "acceptance" later on.

Decision process which concerns innovation of Rogers (1983: 163-169) comprises of 5 stages, as follow:

1. **Knowledge stage** is the first stage of decision process in accepting the innovation. A person learns about innovation for the first time and has sought for knowledge, understanding relevant to such innovation. Some said that this acknowledgment happens accidentally without having intention to search for it or wanting to acknowledge, but some people, such as, Hassingers (Samlee Tongtiew, 1983: 135; reference from Hassingers, 1959) who argued that this type of acknowledgment is selective exposure. However, Rogers mentioned that one is unable to conclude which comes first, which comes after. (Rogers, 1983: 167). This stage of knowledge is classified into 3 characteristics, i.e.
1) **Awareness knowledge.** It is perception that there is an innovation and perceives about the necessity to change. This stage of knowledge is not profound.

2) **How-to-use knowledge.** It is knowledge of how to use the innovation. How to use such innovation so that it is suitable and right. One must know each step thoroughly in performing method so as to enable one to implement it. Therefore, the more such innovation is complicated, the more we have to have knowledge of such innovation.

3) **It is principle knowledge.** It is knowledge about the fact, principle or theory which is behind the performance, such as, knowledge about microbe which is behind the use of vaccine, theory in increasing population which is behind family planning. Knowledge in this characteristics will help a person to understand the innovation and method of use more increasingly which will enable the acceptance of innovation more reasonably.

Rogers (1983: 165) mentioned that characteristics of a person will send an impact to period of time in accepting the innovation whether faster or more rapid which classifies into 3 aspects, i.e.

1) Socio-economic status. Those who have high education, have good economic status, have high social status or have high hope in order to promote social status to a higher one and the innovation harmonizes with life, will have a higher chance and more rapidity in accepting than those who have low education and poor socio-economic status.
2) Personality. Those who are fast in accepting the innovation and can accept in high volume are normally those who do not adhere to the old things, is capable of putting his heart into our own heart, has good reason and has good attitude towards education, is able to think and can understand abstract concept better, being a person who likes to risk as well as having good attitude towards the change.

3) Behaviour in communicating. Acceptance of innovation will have more chance to arise and will arise more rapidly if the innovation in communicating of such person has the following characteristics, i.e. such person participates in the society and acts well as part of social system, takes a field trip often and does not stick to one location, has the chance of contacting with leaders in making propaganda of the innovation, has the chance to welcome mass media people, personal media, is the person who has great knowledge in innovation because he has more opportunity to search for news and is a person who has high level of being leader in thinking.

2. Persuasion stage. A person will being to create liking or disliking the innovation which is the result after he has learnt about the innovation moderately well from the first stage, that is, he will want to learn more about such innovation and wants to know more details about the innovation in the aspect of benefit which he will receive, feasibility in applying it for performing, difficulty and easiness in implementing it for use as well as integration and harmony of the innovation in such community is very effective at this stage, that is, it will give result towards liking or disliking such
innovation which will result in making decision to accept the
innovation in the next stage.

Rogers and Shoemaker (1971: 22-23) has concluded
classifications of the innovation which sends a result to stage in
accepting the innovation into 5 characteristics, i.e. :-

1) Relative advantage means the person who accepts the
innovation thinks that the innovation is better and is more beneficial
than the old thing which used to be performed. The more one thinks that
it is very beneficial, the more there is an opportunity to accept it,
at the same time, rapidity in accepting it is more.

2) Compatibility means the person who accepts the innovation
feels or thinks that he can get along well with such innovation or can
harmonize together with the value, the past experience as well as his
own requirement. Such innovation will be accepted faster and more than
other innovations.

3) Complexity means that the person who accepts the
innovation finds that such innovation is difficult to understand and in
using it, it will take a long time to accept. But if any innovation is
not complexed, easy to use, convenient to apply for use, it will be
accepted faster and higher than other innovations.

4) Trialability means innovation which can be experimented
for use will receive acceptance faster than the innovation which cannot
be experimented for use.

5) Observability. If the receive can observe the result of
such innovation, he will accept it easily and rapidly.
3. Decision stage. In making decision as to whether one should receive such innovation or not, in fact, there is from the first stage onwards, such as, the part relevant with knowledge, a person must decide to select certain innovations. One cannot acknowledge the total past innovations or the part of feeling at the stage which changes the attitude. A person must acknowledge certain necessary thing for evaluating, will cut out or will not be interested in other knowledges. This judgement is to decide whether he will try to use such innovation or not. If such innovation is able to experiment, majority people normally will not accept the innovation before experimenting it.

The problem which arises after making decision to accept the innovation is changing one's mind not to accept the innovation any further if such innovation is the result from cancellation of the old performance guideline before using such innovation. In changing one's mind not to accept the innovation shows that trying to cancel the old performance guideline does not create full result which enables the people to return to the old thing. Shoemaker (Samlee Tongtiew, 1983: 40-41, reference from Shoemaker 1971) commented that in changing one's mind not to accept the innovation it can arise in 2 patterns, the first type is called replacement discontinuance and another type is called disenchantment discontinuance wherein such disenchantment arises because the innovation used does not suit the situation of the user of result from using the innovation is not better than before using. Disenchantment may be due to using the innovation in an incorrect way which results in not getting full benefit wherein this characteristics will arise greatly amongst late adopters. Those who accept the
innovation later than others are majority those who have low education or have no education at all. They are old headed people who will not change easily. The reason why these people accept the innovation at the first stage is because they are persuaded or are forced from those who have power. When forcing decreases, acceptance will also decrease.

4. Implementation stage. When a person decides to accept such innovation, that person will implement it for use wherein sometimes using such innovation will be very time-consuming. This is dependent on characteristics in the use of such innovation including acceptance on the use of the innovation and regular use, hence there is preparation in finding data for this implementation stage in order to enable those people to be able to begin to use such innovation.

5. Confirmation stage. A person will have to receive reinforcement and encouragement in order to create confidence in making his decision. If it is found that the content or the thing obtained relevant to such innovation is contradictory with one another, such person will try to avoid the conflict in order to ascertain the decision, that is, when a person receives additional data, it may emphasize on him to make a decision. The unharmony between the old data and the new thing may help to encourage one to accept the innovation continuously and permanently or it may also reduce.

In changing the pattern, number of stages and name of process in accepting the innovation in order to remedy such defective parts, it will be seen that acceptance of innovation is mental change which arises according to step and which pushes in order to create behaviour in using or not using. If the result of such deed of the said behaviour
was ascertained that it is good according to what one has learnt, or according to what one shapes, behaviour in accepting the innovation will continue to exist until there is a new and better innovation, but if what has been ascertained does not give a fruitful result as expected, behaviour in accepting the innovation will finalise.

From suggestion guideline on the subject of decision process in relation to acceptance of the innovation of Rogers in 5 stages, i.e. knowledge stage, persuasion stage, decision stage, implementation stage and confirmation stage, the researcher will use the said suggestive guideline as frame of thought in this study by studying about the level of perception of instructional innovative values and the acceptance of the innovation of teachers. As for variable which related with perception of the instructional innovative values in this study research, they are variables in bio-sociology and background of teachers in primary and secondary schools.

2.7 VARIABLES IN CHARACTERISTICS ASPECT OF BIO-SOCIOLOGY AND BACKGROUND

From compilation of research work in relation to perception of instructional innovative values, it was found that in the characteristics of those who percept the innovation, there are certain bio-social characteristics which are variables classifying characteristics of sample group which has relationship with the acceptance of innovation. Therefore, in order to enable this study to obtain result in sub-groups, improtant variable in bio-social has also been brought up for study, i.e.
1. **Sex and perception of innovation.** Sex is one of the factors which enables the people to have different aspects of behaviour. In the aspect of accepting the innovation, there are people who made a research by using variable in sex to make a study also, i.e.

Suthisri Sari (1981: 84) has studied in relation with the requirement of teaching media of primary class teachers in Nonthaburi and Samutprakarn Provinces and found that male teachers realize more about bringing teaching-aid kits for use more than female teachers.

Jaruek Chookittikul (1981:176-178) has made a study research relevant to analysis of behaviour which is supportive to developing by teacher student and research on encouragement of behaviour by using sample group who are teacher students studying in teacher's training college, the result appears that male teacher students have characteristics in searching for perceiving new things more than female teacher students.

Roongfa Rakvichien (1983: 64-69) has studied about the perception of instructional innovative values of Thai language teachers in secondary schools in Educational Zones 7 and 8 and found that Thai language teachers who have difference in sex percept instructional innovation differently at significant level 0.05.

Demos (1978: 7408-A) has studied about perception of teachers towards the innovation and the change, it was found that male teachers open wide in thinking about perception in educational innovation more than female teachers. Petchara Petchkaew (1992:76) made comparative study on stage of perception of instructional innovation in arithmetics of mathematics teachers of secondary class level in Educational Zone 11, who have different backgrounds and found that male
and female mathematics teachers perceive the instructional innovation in arithmetics not differently from one another at significant level 0.05.

From result of the research, it is assumed that sex ought to have relationship in perceiving the innovation of teachers. Male and female teachers ought to perceive the innovation differently.

2. **Age and perception of innovation.** Age of a person is able to use for explaining and forecasting events. In the aspect of perceiving the innovation, there is a person who made a research by using age as variable in forecasting the perception of innovation, i.e. Powell (1982) has made an analytical study in evaluating the performance of undergraduated in relation to the perception of innovation from sample group who are undergraduates numbering 40 persons and found that undergraduates who are younger have made movement in using the innovation to a high volume of success more than undergraduates who are older wherein the result of this research harmonizes with Rogers' and others (1994) who have made a research publicizing new thinking in education at secondary level in Thailand who found that teachers who learn about new educational thinking at preliminary stage are normally teachers who are younger than others in the same school.

Teachers who are older normally learn about new thinking slower than teachers who are younger (Pannee Boonprakob 1985: 30-31). Nittayakorn Sangpan (1983) has studied about teaching innovation of mathematics teachers at junior high school level and the result appears that relationship between the use of teaching innovation and component which concerns age, education, teaching experience or
orientation course on new curriculum of teachers are different.

From the above mentioned research, it is assumed that age of teachers ought to have relationship in perceiving the innovation. Teachers who are of younger age and older age ought to accept the instructional innovation differently.

3. **Level of education and perception of innovation.**

There is a person who has made a study, such as, Wanvilai Poonsawat (1980: 197-198) has made a research on problem in teaching science at junior high school level according to the guideline of Scientific Promotion Institute of private school teachers in Educational Zone 6 and the result of research appeared that teachers who have high qualification realize about the importance and benefit of teaching-aid kits as well as the value of knowledge relevant to maintenance of the teaching-aid kits more than teachers who have low qualification.

Paradee Kiriburi (1982: 88-89) has studied about the component which has relationship with the use of teaching innovation of Teachers' Training College lecturers and the result appeared that lecturers who have higher qualification are the ones who perceived about the change and progress in education more than lecturers who have lower qualification.

Somboon Laksananukit (1984: 167-174) has studied about stages in perceiving educational innovation of District Educational Lecturer and Technological teachers of school group in Educational Zone 3 and found that technological teachers of school group who have various educational qualification, by majority, perceive the innovation in various aspects equally, but in certain innovations, it was found
that technological teachers of school group who have Bachelor of arts degree upward have a stage of perception higher than technological teachers of school group who have lower qualification than Bachelor of Arts degree.

Burin Burat (1984: 132-138) has studied about the stages of perception of educational innovation of District Educational lecturer and technological teachers of school group in Educational Zone 10 and found that technological teachers of school group who have different qualification and economic status perceive educational innovation in each aspect at the same level.

Nitayaporn Sangpan (1984: 99-113) has studied about the use of teaching innovation of mathematics teacher of junior high school level, Sakol Nakorn Province and found that teachers who have difference in sex, age, education, teaching period and training experience or used to receive training in new curriculum use instructional innovation differently.

Apinya Sookakul (1984: 108-110) has studied about requirement of mathematics teachers in applying educational innovation for use in learning and teaching mathematics in secondary schools in Bangkok Metropolis and found that mathematics teachers who have different qualification require to implement educational innovation for use in learning and teaching differently.

Utorn Niyomchat (1990 : 140-148) has made a study on stage of perception of instructional innovation of teachers in creating experience in life group in primary school and found that teachers in creating experience in life group have qualification lower than Bachelor of Arts degree and Bachelor of Arts degree upward perception
of instructional innovation differently.

From the compilation on the result of this research study, it can be concluded that qualification or level of education do relate with perception of new things. Those who have higher education and teachers who have lower education ought to perceive new things differently.

4. **Period of teaching and perception of innovation** means period of time which the teacher first started to teach up until the present time wherein each teacher will have different teaching period. In making research study relevant to teaching period of teacher and acceptance of the innovation, research study has already been made, i.e.

Rogers and others have made a research study in relation to publication of new educational thinking in secondary school of the Government in Thailand wherein at that period both Thai and American undergraduates have tried to apply new educational thinking for use in schools in Thailand, part of the research study was found that teachers who learnt about new educational thinking at the preliminary stage are normally the teachers who are younger than other teachers in the same school.

Sermsak Visalaporn (1987: 3-19) has made a research on problem of teachers in educational innovation, relationship between suggestive guideline towards teacher's occupation and behavioural pattern by using sample groups who are teachers or educational officials in Educational Zone 7 numbering 281 persons. The result appeared that teachers who have taught for a long period will be teachers who perceive the innovation lesser than teachers who have taught for a shorter period and they have constraints at the highest
level in applying the innovation for use in school.

Boonnit Waiscosuch (1979:147-148) has made a study research on interest of primary class teachers who applied educational innovation for use in teaching by using sample groups who are school administrators, teachers who teach and pupils under the jurisdiction of Bangkok Metropolis, the result appeared that teachers who have just joined government service and have lesser teaching period realize about the importance and benefit of the innovation more than teachers who have been teaching for a longer period.

Petchara Petchkaes (1992:76) has made a comparative study about stage of instructional innovation in arithmetics of arithmetics teachers at secondary level who have different background in Educational Zone 11. It was found that mathematics teachers who have lesser experience in teaching and have more experience in teaching percept the instructional innovative values not differently at significance level 0.05.

From the above compilation of research, it can be assumed that period of teaching of teachers ought to have relationship in perception of instructional innovative values. Teachers who have lesser teaching period and teachers who have more teaching period will percept the innovation differently.

In addition, another aspect of background of teachers which ought to have relationship with the perception of instructional innovative values of teachers in training.

5. **Training experience and perception of innovation** means the teachers who teach have received training course or seminar or participated at performance meeting which have curriculum in relation
with learning and teaching and instructional innovation wherein each teacher will have the opportunity to pass learning and teaching and instructional innovation and wherein each teacher will pass about the training differently. Research work which relates with variable in training is not much, i.e. Nittayaporn Sangpan studied about the use of teaching innovation of mathematics teachers at secondary level, Sakolnakorn Province and found that teaching experience or participation in new curriculum training course use teaching innovation differently while Demos (1978: 7108-A) has studied about perception of teachers towards the innovation and change found that teachers who used to visit changing project in other schools will have good attitude towards the innovation by trying to apply such innovation for use and also introduce others. Petchara Petchkaew (1992 : 76) found that mathematics instruction and those who never received training in instructional media in arithmetics percept the instructional innovative values in arithmetics not differently at significant level 0.05.

From the above data, it may be commented that teachers who pass and do not pass training course, seminar or participated at performance meeting in instructional innovation is likely to percept the innovation differently.

In summarizing, under the heading of variable in bio-social and background as compiled above, it can be concluded that sex, age, level of education, teaching period as well as training experience or relevant seminar are interesting variables and ought to study as to whether or not such variables send an impact to teachers to percept and accept the instructional innovative values differently.
2.8 REVIEW OF THE PAST STUDIES

Researches in Thailand

Technology Department, Ministry of Education (1975: 1-2) has made a survey about problem and attitude of teachers which they have towards the use of instructional innovation from sample groups of population who are teachers of primary 1-4 in Bangkok Metropolis numbering 497 persons classified into 55 males and 442 females wherein majority are between 31-40 years of age. Most of the teachers have 6-10 years of teaching experience. Result of the research relevant to attitude towards the innovation was found that out of 15 categories of instructional innovation, majority teachers like 13 categories of the instructional innovation, teaching by using programmed instruction, group instruction, simulation instruction, instruction where pupils have to pass behavioural objective in each lesson before proceeding to next lesson, instruction by classifying students into group according to skill, ability and interest, television instruction, television for increasing educational experience, peer tutoring, that is, let smart students teach those who are the slow learners, use of instruction kit, broadcast instruction, flexible scheduling, individualized instruction by specifying teaching method to suit each student, integrative techniques and the range of percentage of teachers who like innovation which is between 45.70-55.73 % and 47.48 % of the teachers show dislike to innovation (unclassified system) and 28.57 % shows 'not understanding' the innovation in ready-made lessons by using computer.
Uarjit Lorburana (1976: 136-137) has studied about survey of educational innovation in Faculty of Science of a university in Thailand. Sample population used were educational administrators, lecturers and undergraduates altogether totalling 898 persons and found that out of 8 categories of the instructional innovation, i.e. group instruction, experiment instruction, seminar instruction, sub-group discussion, Keller's instruction method, instruction by using self-study centre, television instruction and instruction by using ready-made lessons, every college teaches in a group by using experiment teaching and seminar instruction. It was further found that how successful it would be to use educational innovation, is dependent upon policy for supporting the use of innovation. Such innovation is capable of remedying educational problem if there were budget for use in innovation process. The lecturers find the importance of improving learning and teaching. The administrators, lecturers, undergraduates as well as officials who participate in using the innovation must understand the principle and innovation process, must give co-operation, help remedy the defective points as well as evaluating the use of innovation.

Sermsak Visalaporn (1978: 4-8) has studied about problem of educational innovation teachers, relationship between suggestive guideline towards teacher occupation and behavioural pattern by having an aim in order to learn about teachers' opinions on the subject of applying the innovation for use in school by studying about the person who ought to initiate using the innovation, the person who ought to be a constraint in applying the innovation for use, what is the important constraint in applying the innovation for use. Sample population group
used in such research were teachers and educational officials both male and female in Educational Zone 7 numbering 281 persons and found that the sample population was of the opinion that the headmaster or the superintendent ought to be the one who initiates it and applies the innovation for use in school. The persons who are the most constraint are teachers who have long been serving the government service. The persons who is secondary constraint is the headmaster or the superintendent. The thing which is the most constraint in applying the innovation for use in school is shortage of tools and equipment and the thing which is secondary constraint is administrative system in education in Thailand.

Suwanna Eamsookawat (1979: 52-53) has studied about acceptance of educational innovation of secondary class teachers in Bangkok Metropolis numbering 220 persons and concluded that sample population group accept the educational innovation at rather high criteria and accept educational innovation in learning/teaching more than educational innovation in curriculum aspect. In regard to educational innovation in learning/teaching, secondary teachers accept at the lowest rate. In regard to the use of new teaching media, the educational administrators hardly realize about the importance of teaching media and secondary class teachers accept it at the highest rate, in applying theory or suggestive guideline according to result of new research in relation to learning/teaching for altering for use in teaching method of teachers. In addition, it was found that acceptance of educational innovation in curriculum of teachers who have Bachelor of Arts degree onwards, is more valuable than teachers who have qualification lower than Bachelor of Arts degree. Secondary class
teachers who have difference in sex, age, occupational experience, qualification, participation in training of new curriculum as well as branch subject which one teaches, accept the educational innovation not differently.

Choochat Boonchu (1981:85-88) has studied about acceptance of educational innovation of primary class teachers in Lopburi Province by having an aim to survey and compare educational innovation of primary class teachers in Lopburi Province and compare about the difference of educational innovation of primary teachers in Lopburi Province by classifying into sex, occupational experience, qualification and size of school. Sample population groups were primary teachers in Lopburi Province numbering 408 persons. Result of research was found that sample population accept the educational innovation at rather high level. In accepting the educational innovation, it was found that there is acceptance of ready-made lessons at the highest rate. The innovations which have been accepted in high volume are teaching by writing stories from pictures of helping one another to make up a sentence continuously, role play. As for the innovations which have been accepted at the lowest criteria, i.e. self-evaluation and evaluation of friends from the specified criteria, pupils teach pupils, arranging the school in non-graded school. Primary teachers who are different in sex, qualification, occupational experience accept the general educational innovation and the innovation used in current educational circle not differently.

Paradee Kiriburi (1982: 85-88) has studied about component which has relationship with the use of teaching innovation of
lecturers in Teachers' College in Capital group. Sample population group used were lecturers from 6 places in Teachers' College in Capital group numbering 479 persons and found that qualifications which are different have no relation in the opinion of lecturers in attitude aspect which they have towards the innovation, requirement in the use of innovation, giving financial support, colleagues and difficulty and easiness of teaching innovation. Lecturers who have working experience from 15 years upward are of the opinion that supporting in various aspects do have relation towards teaching innovation. Teaching innovation which every group of lecturers uses most are inquiry method, group instruction, simulation, reflecting thought instruction and role play.

Roongfa Rakvichien (1983: 64-69) has studied about instructional innovation of Thai language teachers in secondary schools in Educational Zones 7 and 8 numbering 222 persons and found that Thai language teachers accept the instructional innovation in the category of skill process and learning centre at implementation stage and in making comparison on acceptance of instructional innovation of Thai language teachers, it was found that Thai language teachers who are different in sex accept the instructional innovation differently at significant level 0.05. Thai language teachers who are different in qualification accept the instructional innovation indifferently at significant level 0.05 and Thai language teachers who have difference in teaching experience accept the innovation differently at significant level 0.05. In terms of instructional innovation under category of group teaching and nongraded school, they are different at significant level 0.01 which concerns
instructional innovation under category of individualized instruction as well as micro teaching.

Vathy Chookittikul (1982:44) has studied about attitude and was confident about ability in the use or instructional innovation of regular teacher in Petchburi and Prachuabkirikan Provinces numbering 300 persons who participated at Training Course at Petchburi Teachers' Training College and found that regular teachers who were trained have not changed attitude to a better one towards the instructional innovation, than before receiving training. Regular teachers are confident in the ability in applying the instructional innovation differently in 3 types, i.e. nongraded learning, criterion referenced test and peer tutoring by having a trend to have confidence in the ability to use each type of instructional innovation higher, after half of the curriculum has been trained and reduce the course when curriculum finalises. Instructional innovations which the regular teachers apply for use most are behavioural objective, learning centre, integrative techniques, simulation, teaching pattern instruction criterion referenced test and peer tutoring.

Supaporn Tonqjerm (1984:213-217) has studied about stage of acceptance of educational innovation of District Educational officials and technological teachers of school group who have stages in accepting the educational innovation in 5 aspects, as follows: acceptance of instructional innovation and evaluation measurement are at acceptable stage, innovation in the aspect of teaching media is at evaluation stage, technological teachers group accept curriculum innovation at implementation stage while District Educational officials accept the curriculum innovation at evaluation stage. As for
Stage of acceptance of educational innovation in 37 types, it was found that District Educational officials and technological teachers of school groups accept remedial teaching and evaluation in order to improve learning and teaching at implementation stage. District Educational officials who have working experience from 1-10 years and more than 10 years accept the innovation in 5 aspects in the same stage except curriculum innovation and administrative aspect as well as service aspect.

Somboon Laksananukit (1984: 167-174) has studied about the stage of acceptance of educational innovation of District Educational officials and technological teachers of school group in Educational Zone 3 and found that the stage of acceptance in various aspects of educational innovation is totally at the same stage, i.e. implementation stage, except administrative and service innovations wherein the District Educational officials have the stage of acceptance at evaluation stage while the technological teachers of school groups have the stage of acceptance at interested stage. As for stage of acceptance in 37 types of educational innovations, majorily, the District Educational officials have stage of acceptance in every official type of innovation at equal stage of higher. Stage of acceptance of technological teachers of school groups in experience aspect of work as District Educational officials who have 1-10 years and more than 10 years of working experience have stage of acceptance in various innovations at the same stage except instructional innovation. As for technological teachers of school group who have working experience from 1-10 years and 10 years upward they have acceptance stage in 5 aspects of innovation totally at equal stage,
i.e. evaluation stage, except innovation in evaluation measurement which was found that technological teachers of school group who have various qualifications by majority, will have stage of acceptance of innovation in various aspects at equal level, but in some innovations, it was found that technological teachers of school group who have Bachelor of Arts degree onwards have stage of acceptance higher than technological teachers of school group who have qualification lower than Bachelor of Arts degree.

Burin Burat (1984 : 132-138) has studied about stage of acceptance in educational innovation of District Educational officials and technological teachers of school group in Educational Zone 10 and found that the District Educational officials have stage of acceptance in educational innovation in measurement and evaluation aspects at implementation stage. As regards other aspects, the acceptance is at evaluation stage while technological teachers of school group have stage of acceptance in educational innovation in curriculum aspect and in measurement and evaluation aspect at implementation stage, instructional innovation and innovation in teaching media at evaluation stage. District Educational officials who have long working experience will have stage of acceptance of educational innovation lower than District Educational officials who have shorter working experience and technological teachers of school group who have different working experiences, different qualifications and different economic status accept the educational innovation in each aspect at the same stage.

Chanaporn Yaowarat (1987: 127-132) has studied about requirement of sociology teachers in using educational innovation in
learning and teaching sociology in secondary school, Bangkok Metropolis and found that sociology teachers require a lot of educational innovation, both in preparing learning and teaching aspect in learning and teaching media and educational technology. In comparing the requirement in using educational innovation of sociology teachers who teach at junior secondary level and sociology teachers who teach at senior secondary level, the result appeared that requirement in using instructional innovation is different, but there is no difference in learning and teaching media and educational technology and in comparing the requirement in the use of educational innovation of sociology teachers who have different working experience both in preparing learning and teaching, learning and teaching media and educational technology, it appears that there is no difference.

Utorn Niyomchat (1990: 140-148) has made a research of studying the stage of acceptance of instructional innovation of teachers in creating experience in life in primary schools under the jurisdiction of Primary Education Board and it was found that teachers accept instructional innovation in group process, simulation, individualized instruction, instructional package, peer tutoring, learning centre, project techniques and inquiry method at evaluation stage. Teachers accept instructional innovation in discussion on morals, mastering learning, group teaching, skill process teaching, teaching kit instruction and micro teaching at interested stage and role play is at implementation stage. Male and female teachers accept the innovation differently relevant to teaching. Individualized instruction, simulation teaching, skill instruction, instructional package and group teaching, for teachers who have qualification lower than Bachelor of
Arts degree and Bachelor of Arts degree upward accept the instructional innovation differently in regard to inquiry method and teachers who have long period in teaching experience and shorter period of teaching experience accept the instructional innovation differently where it concerns micro teaching, learning centre and skill process teaching.

Panalai Yoosamkan (1992: Abbreviation) has studied about variable in mental sociology which relates with the acceptance of teaching innovation of teachers who teach sociology in secondary schools in Educational Zone 1 and found that older female teachers accept the innovation at mental stage, that is, they have intention to teach by emphasizing that students are learning centre in learning higher than other groups of teachers, specifically, older male teachers. Male teachers who teach in medium-scale school accept the innovation at behavioural stage, that is, teaching behaviour by emphasizing that students are learning centre higher than other groups of teachers, specifically, male teachers who teach in big-scale school. In addition, it was found that female teachers who have long teaching experience have teaching behaviour by emphasizing on students as learning centre longer than teachers in other groups and was found that volume of knowledge relevant to teaching innovation by emphasizing on pupils as learning centre in learning does have relation in accepting teaching innovation at mental stage and behavioural stage. It may be commented that teachers who have high volume of knowledge relevant to teaching innovation will highly accept the teaching innovation both at mental stage and behavioural stage.

Nitayakorn Sangpan (1984: 99-103) has studied about teaching innovation of mathematics teachers at junior secondary level,
Sakolnakorn Province and found that opinion of teachers relevant to mathematics curriculum will by majority have harmonized opinion according to the guideline of curriculum. Practice relevant to the use of teaching innovation has been performed in relation to preparation of teaching, using teaching method by inquiry-answer in remedying problem, use of books, curriculum and teaching manual, collecting marks from Questionnaire and examining exercise books. Relationship between the use of teaching innovation and component which relates to teaching innovation and component which concerns the teachers was found that teachers who have difference in age, education, teaching experience or used to participate at new training curriculum use teaching innovation differently.

Apinya Sukakul (1984: 108-110) has studied about requirement of mathematics teachers in implementing educational innovation for use in learning and teaching mathematics in secondary school, Bangkok Metropolis District and found that requirement of mathematics teachers in implementing the educational innovation for use at medium stage in preparing teaching and at the highest stage of requirement, that is, training skill in using inquiry, requirement of mathematics teachers in applying educational innovation relevant to instruction media and educational technology for use in learning and teaching at medium stage and the highest requirement stage is using learning and teaching set for teachers to use as manual for teaching. Mathematics teachers who have different teaching experience, require to apply educational innovation for use in learning and teaching indifferently and mathematics teachers who have different qualifications require to apply the educational innovation for use in learning and teaching
Sanan Khunprasert (1992: 111-113) has made a research study on persuasion in accepting educational innovation of mathematics teachers in secondary schools and found that teachers who used to apply innovation formerly are teachers who are less than 38 years old who have the intention of using the innovation on next opportunity more than teachers who are opposite type.

Petchara Petchkaew (1992: 75-76) has made a comparative study on the stage in accepting the instructional innovation in arithmetic of arithmetic teachers in secondary level who have different backgrounds in Educational District 11 and found that mathematics teachers accept the instructional innovation at evaluation stage and accept the innovation at implementation stage in using various shapes in arithmetic, using music as component of lessons, example technique, technique in creating and reinforcing encouragement, teaching method in analogy pattern, teaching method in pattern, the use of printed matter which is teacher's manual, using graph paper, use of teaching media from environment, using device to experiment feasibility. Moreover, the teachers accept instructional innovation at interested stage and evaluation stage.

Overseas research.

Noble (1974: 7006-A) has studied about acceptance of educational innovation and protest on the innovation of teachers in 2 community colleges in America and found that teachers have a trend to experiment the use of innovation and apply the innovation for use in a group more than using it individually. The situation which helps to
reinforce the teachers to experiment the use of teaching innovation is giving budget to help budget aspect as first priority. Second to it was assistance must be given in providing experts for such subject. As for component which made the teachers willing to experiment or applying various patterns of innovation for use is dependent upon policy guideline of the administrator, giving independence to teachers in experimenting the use of various innovations both in thinking and in actual performance as well as having his own office or his own experiment place.

O'Reily and Fish (1976: 68-70) have studied about teachers' period of teaching and protest on the acceptance of educational innovation wherein such protest in accepting the educational innovation has been measured by attitude towards the acceptance of educational innovation wherein the result obtained was that teachers who are narrow-minded protest the acceptance on educational innovation higher than broad-minded teachers. Teachers who worked more than 3 years protest towards the acceptance of innovation higher than teachers who worked less than 3 years.

Arbuckle (1977: 7-A) as studied about component which has result towards support on change in education and found that factor which promotes the use of educational innovation to a successful one is that teacher who uses such innovation must understand about the objectives of such project very well. The administrator must give assistance and support training course, follow up the result of new project which substitutes the old one or the project which has been improved must have actual performance. There must be improvement of teachers and practice according to the project. Amount of Targeted
population must be limited. There must be necessary equipment and must be given assistance from the local area as well as having the atmosphere supportive to developing education.

Demos (1978: 7108-A) has studied about acknowledgment of teachers towards innovation and change wherein sample population were 250 teachers. Tool used was Questionnaire. Result of the research was found that teachers who were supported in principle aspect will have good acknowledgment towards the innovation and change. Teachers who have the part in planning and developing curriculum will have acknowledgment in accepting the innovation and change. Male teachers open wide in thinking in accepting the educational innovation more than female teachers. Teachers who teach compulsory subjects will acknowledge the innovation and change similarly to the teachers who teach selective subjects and teachers who used to visit changing project in other schools will have good attitude towards the innovation by trying to apply such innovation for use as well as introducing it to other people.

Henderson (1978: 5160-A) has studied about structural organization and acceptance of educational innovation. Sample population groups were 1,246 teachers. Tool used was created by Rogers' stage of acceptance in innovation for use in measuring 24 categories of innovation. Result of research was found that stage of the organization has resulted in being accepted and progress of teachers was learnt by passing through process of decision stage to accept the innovation. Twelve innovations out of the 24 categories are very much at acceptance stage while the innovations which concern technology and individual person has hardly been accepted.
Dangharn (1979: 4587-A) has studied about accepting the educational innovation of teachers and attitude of teachers which they have towards the curriculum. Sample population were teachers at primary and secondary levels of government schools in Southwestern Region of U.S.A. numbering 251 persons. Tool used was Questionnaire. Result of research was found that acceptance in educational innovation of teachers do have relation which attitude of teachers towards participating in preparing curriculum and applying the curriculum for use. But variables which relate with teachers are qualification and classroom which such teacher is teaching has no relationship towards the acceptance in educational innovation of teachers. But period of experience as teacher and teaching period of the present school do have relationship in accepting the educational innovation.

Burford (1980: 992-A) has studied about changes of teachers in the status of indicator of steps in supporting the innovation in primary schools. Sample population were teachers in Texas. Tool used was Questionnaire, interview and measurement of attitude of teachers. Result of research was found that teachers who have recently been teaching will have interest in the innovation higher than teachers who have long period of teaching experience.

Lewis (1987: 295-A) has studied about factor which sends an impact to the use of curriculum innovation continuously. Sample population were teachers who teach in junior secondary class and senior secondary class numbering 21 persons from 5 schools who used to apply curriculum innovation for 3 years. Tool used was Questionnaire which was in rating scale pattern and interview pattern. Result of research was found that 81% of the teachers still continue to use
curriculum innovation because they think that curriculum innovation is important, efficient and suitable with each subject taught. Nineteen percent of teachers do not any more use curriculum innovation because they think that such innovation is not suitable with each subject taught.

2.9 RESUME

From the above mentioned document and research work, it will be seen that those residing overseas have realized about the importance of educational innovation and have long been taking interest in making discovery study and research in relation to educational innovation. As for domestic research, research has been made in relation to educational innovation both at primary level, secondary level and college level. Moreover, research has been made in relation to requirement in applying the educational innovation for use in learning and teaching mathematics and sociology. Therefore, the researcher is interested to study about the perception and the stage in accepting the instructional innovative values of primary and secondary schools in relation to the certain variables i.e. sex, age, level of education, teaching period and experience in training. the researcher hoped that the result of study on the instructional innovative values of primary and secondary would be beneficial towards applying instructional innovative values in different subjects, that is, it acts as data in promoting and supporting the propaganda as well as the use of instructional innovative values to a more efficient and efficacious one.