Development of the Ability in Creative Problem Solving of Early Childhood Education major Students by Using Group Process Activities

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Abstract
Development students in early childhood education, especially for teaching children ages 0-6 years need skills in problem-solving which is an important skill. The idea of creative problem solving helps students to understand and adapt to the rapid changes of society better.
This research was studied and compared the development of the ability in creative problem solving of early childhood major students by using group process activities.
The researcher collected data from the tests, the ability to solve problems creatively with 1-4 year students Department of Early Childhood Education, Faculty of Education, Lampang Rajabhat University Relations group prior to the event and have targeted 40 peoples. The researcher provided group activities prior 1 event per week, four times the number of weeks were evaluated using prospective assessment of group activities. And tested for their ability to solve problems creatively after each event group. The data was collected by testing the ability to solve problems creatively. After the events group the data were analyzed for mean ($\bar{x}$) and standard deviation (S.D.). the research presented that 1) Behavior of the early childhood education students after attaining in the activities was overall in a good level. 2) The ability of the early childhood education students in creative problem solving was overall higher under the mean $\bar{x}$=14.92 (before) and $\bar{x}$=27.4 (after)
Students involved in the commentary, expression, faith in themselves, skills in problem solving the problem. The atmosphere in the activities was not boring. The group found that students are happy and skills to work with others have a responsibility to themselves and as a whole. These was supposed that the activities to promote the creative problem-solving.

Keywords: Creative Problem Solving, Group Process Activities, Early Childhood Education major Students

Introduction

Due to The Office of the Higher Education Commission has a determination of Thailand Qualifications Framework for Higher Education, which consist of 3 criteria to develop abilities for Higher Education thus Student standards, Education standards and Creating and developing the environment of education society standards. As they said about Student standards that graduate students who consisted of knowledge, morality and self-studied and developed to adapt this knowledge for living peacefully in our society, including responsibility as citizens. The indicators of student standards compares with 3 of them as follows. 1) Graduate students should have specialized in area of study or type of work which were their majority, created and adapted their specialty into developing our society in the case of internationally challenges. 2) Graduate students should have a morality and manner for daily life. 3) Graduate students should have a peaceful mind and healthy in conditional on taking good care of their health with suitable situation. Regarding to the student standards includes knowledge, occupation, skill, experience and morality which all these are major abilities, involve in creating and developing the environment of education society standards. Accordingly, this situation, the University should have been revised methodology of education more accurately field.

The development of students in early childhood education, who are promptly abilities for rapid change society and internationally challenges, involve their abilities in independent of human manners, namely; self-thinking, self-doing, self-solving and creating knowledge adapted in daily life. Advanced knowledge is enlightened about brain process and understood the relation of thought and brain, moreover human can practice thinking with fullest ability of the human brain. (Sirikan Kosum and Daranee Khamwajanang, 2001) Then Sombat Ganjanarakpong (2011) and Usanee Anuruthwong (2011) said that the necessity of corresponding thinking composed of Higher-order thinking skills, which were given first priority to develop our country by students and society, namely; creative thinking, decision making, problem solving and especially critical thinking. This critical thinking is a main idea for self-guiding, self-disciplined thinking which attempt to reason in the highest level of quality in a peaceful mind. People who think critical have consistently attempted to live rationally, reasonable and empathically. Moreover they can apply the critical thinking, initiate creation, performance and production the new things.

Guilford (1967) suggested that the nature of the creative aspects of personality is a matter of those patterns of traits that are characteristic of creative persons. A creative pattern is manifest in creative behavior which includes such activities as investing, designing, contriving, composing and planning. People who exhibit these types of behavior to a marked degree are recognized as being creative. When we confront the problem, we normally avoid it, instead of solving a problem. So we should develop our creative problem solving and apply for our joyful daily life. The conception of creative problem solving can be divided into 4 steps. 1) Knowledge, at first we would have identified and recalled of information which referred to the problem. This step will lead us to the valuation of creative problem solving. 2) Comprehension, in this step will be described what knowledge means, finding the main ideas, summarizing, explaining trends and significance. According to self-approval, we should have knowledge acquisition by reading, investigating and cooperating with others. 3) Analysis, examining the reasons for theories, finding evidence and seeing relationships between parts of something. 4) Creating, synthesizing ideas from

different sources or materials to create new perspectives or a new original product. Many have got a creative thinking, but they always have failure in synthesizing process. It depends on awful and lacking of self-confidence. Then we would have concentrated on synthesizing ideas into actions.

The creative problem solving skill is the ability to think clearly and rationally, understanding the logical connection between ideas with creativity which differ from usual, namely; the creative problem solving skill is the effective method for the current situation. The creative problem solving person should always be a diligent personality, who has got this ability, corresponding with Educational reform policy in the twenty-first century. This educational reform encourages the better relationships of study activities between process and method to collaborate activities such as specification about an interesting topic, participation processes. In case of students are able to analyze and integrate with other subjects on their own. The educational reform in the twenty-first century has got flexible, creative, challenging and complex education, which is an influential reason of rapid changes worldwide. This situation will not only be caused by obstacles and problems, but also opportunities and creative productivities. Students should promptly be Thai citizen, Asean citizen and Global citizen with good manners. A good quality of the citizen requires major of abilities for living joyful and morality, who have got these abilities, they become an Ethical person. Then the major of abilities as following 2 groups of related ability, particularly 1) Group of ability 4R consists of 3 abilities; (1)Literacy, (2)Numeracy and (3)Reasoning. 2) Group of 7C consists of 7 abilities; (1) Creative Problem Solving Skills, (2) Critical Thinking Skill, (3) Collaborative Skills, (4) Communicative Skills, (5) Computering Skills, (6) Career and Life Skills and (7) Cross-Cultural Skills. (Pimpun Dechakup, 2014)

Creative Problem Solving: CPS as a conceptual fundamental study creative thinking ability. (VanGundy, 1987 and Treffinger and Isakson, 2005) A plenty of instructor who interested in this method, researched the effective process of Creative Problem Solving and finally developed synthesizing creative production. Creative problem solving exhibits as a kind of process, method or system, provides solving problem by logical imagination as long as its result can be approved by action. (Mitchell & Kowalik, 1999) Besides Treffinger and others (2006) mentioned as a definition of Creative Problem Solving that this is a kind of developed method for creative ability by self-study in development and analysis solving problem method. Arbesman & Puccio (2001) emphasized that Creative Problem Solving combines creative thinking with critical thinking. Some work of Lewin & Reed (1998) and Kriengsak Charoenwongsak (2008) suggested that Creative Problem Solving equate with creative thinking in term of many assorted creative thinking, which supports extended framework of thinking. Then critical thinking as a connector of rationality, which has compared their effect and selected the most appropriate problem solving. Lewin & Reed (1998) applied creative thinking and critical thinking in each of the Creative Problem Solving process into 2 phases. We call Generation Phase and Focusing Phase. Generating Phase allows divergent thinking tools generate many ideas and speculate about possibilities related to a given topic. Focusing Phase allows convergent thinking tools enable to select from the possibilities generated ideas and to formulate a focused research topic and generate an appropriate problem solving. Creative Problem Solving ability should be improved by students. Usage of this ability will be advantaged of their daily life.

By using group process activities with higher education students, should be arranged creative problem solving activities, which develop their ability. As regards emotional crisis of teenage, students always encounter tough situation. Normally they attend to disorder behavior which is commonly seen in adolescents. Their activities include inattention, apparent listening problems and difficulty following instructions, avoidance or dislike of tasks that require mental effort. Some of them encounter depression and become depressive disorder. These matters will be the primary cause of disorder behavior such as drug or attempted suicide. (Likit Kanchanaporn, 2005) For that reason students will be supported by improvement their creative problem solving. To avoid disorder behavior and wrong decisions, students should collaborate with the development of creative problem solving activities. In each activity, students will practice and try to solve their problem by using this method, including improved critical thinking both of convergent and divergent thinking. The curriculum will be consisted of more challenging and encouraged development of thinking ability and conceptual collection becoming a good manner of society. (Surang Kow-trakul 2009) Group Process Activities are configuration of learning by collaborating with students who are responsible for studying by themselves and share their experiences with others. The effective learning will be acquired by analyzed their learning behavior together. This kind of configuration learning by using group process activities will be improved their knowledge acquisition, self-studying, group collaboration and developed their thinking, doing and solving problem with better coordination between instructor and students. This is a perfect opportunity to express students' opinion and recognize the value in this configuration by applying in real life situation. These activities encourage students to increase their self-sufficiency and self-studying abilities with lively and joyful. (Chanitsiree Suphapimol 2002) The configuration of learning by using group process activities is an environmental management and instructional climate relating problem situations effective encouragement of knowledge accessibility. Namely; instructor may lead students encounter the real problem situation or create a situation to practice their analytical procedures and problem solving process as a group. These activities will be effective clearly understanding about the problem to find many resolutions and solving problem, including encouraging of knowledge, intellectual and solving problem abilities. (Tisana Khammanee 2010)

The General Conference of Department of Early Childhood Education, Faculty of Education, Lampang Rajabhat University about Desired Characteristics of Students found that most of them lack of solving problem skills in case of affected their studying and daily life such as pregnancy among students, poor academic performance, accident and depression. The solving problem skills development is the most important to avoid, especially unsuccessfully in criteria of Education. Including Creative Problem Solving encourage their understanding and adapting themselves to the rapid changes of society as well. Examination of the content about creative problem solving tests with students in early childhood education revealed some of them were below the benchmark, that means the encouragement of Creative Problem Solving is so important to make them stable life, self-development with any circumstance surrounding and keep up to date.

Following the causes and important as was said above, the researcher interested in study the development of Creative Problem Solving in Early Childhood Education Students by using Group Process Activities. The aim of this research is development

students in early childhood education, especially for Creative Problem Solving skills in academic life and daily life promptly into specialist in teaching.

Significance of the Research

1. Development of the ability in Creative Problem Solving of early childhood education students by using Group Process Activities.
2. Comparison of the ability on Creative Problem Solving of early childhood education students' pre and post-experience by using Group Process Activities.

Research Hypothesis

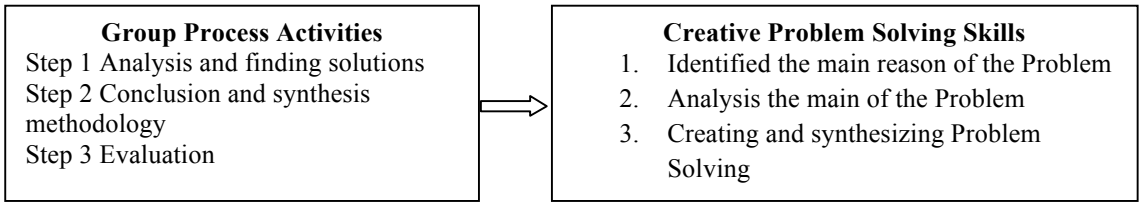
I believe that the students in early childhood education will improve their creative problem solving ability when they have got post-experience by using group process activities, are overall higher.

Scope of Research

1. A variation of the research
The independent variable is the investigated variable which is configured learning by using group process activities.
The dependent variable is the investigated variable which is creative problem solving ability.
2. Population of research
The 1st-4th year students Department of Early Childhood Education, Faculty of Education, Lampang Rajabhat University in 2015; amount 40 peoples by specifying sampling

Research Methodology

1. Developed conceptual Framework of Research using identify the problem and research objectives by studying some documents and related research, as a Conceptual Framework namely;



2. Target Population
Target population as the 1^{st}-4^{th} year students Department of Early Childhood Education, Faculty of Education, Lampang Rajabhat University in 2015; amount 40 peoples by specifying sampling and pre-test score of creative problem solving below 50 percentages.

3. Research tools Development as followed by the conceptual framework namely;
3.1 Proposal of Group Process Activities
3.2 Evaluation of Group Process Activities
3.3 Creative Problem Solving ability test

4. Data Collection, researcher collects data as follows below
4.1 Researcher collects data from creative problem solving test in pre-group process activities.
4.2 Researcher configures group process activities as 1 a week. Totally 4 weeks with 4 main activities. In each main activity consists of sub-activities following group process activities 3 steps, namely; Step 1 Analysis and finding solutions, Step 2 Conclusion and synthesis methodology, Step 3 Evaluation, while configures group process activities, researcher evaluates target population by using an evaluation form of group process activities and tests them in creative problem solving as post-group process activities every times.
4.3 Researcher collects data from creative problem solving test in post-group process activities.

5. Analysis of Data, researcher analyzes data by using statistics of evaluation group process activities form for the mean score ($\bar{x}$), standard deviation ($S.D.$) and a score of creative problem solving test.

6. Conclusion and reporting the result of the research.

Conclusions

1. Development of ability in creative problem solving of early childhood education students by using group process activities, which will be concluded that

1.1 Behavior of group process activities will be divided into
1.1.1 Analysis and finding solution step of students in early childhood education behavior of group process activities at in 1st week was average ($\bar{x} = 2.4, S.D. = 0.54$). In the 2nd week was average ($\bar{x} = 3.2, S.D. = 0.44$). In the 3rd week was high ($\bar{x} = 3.8, S.D. = 0.4.4$). In the 4th week was high ($\bar{x} = 4.1, S.D. = 0.14$). After they attained in the activities their behavior was overall higher.
1.1.2 Conclusion and synthesis methodology step of students in early childhood education behavior of group process activities in the 1st week was low ($\bar{x} = 2.4, S.D. = 0.54$). In the 2nd week was average ($\bar{x} = 3.2, S.D. = 0.44$). In the 3rd week was high ($\bar{x} = 4.2, S.D. = 0.44$). In the 4th week was high ($\bar{x} = 4.25, S.D. = 0.54$). After they attained in the activities their behavior was overall higher.
1.1.3 Evaluation step of students in early childhood education behavior of group process activities in the 1st week was average ($\bar{x} = 2.8, S.D. = 0.44$). In the 2nd week was average ($\bar{x} = 3.4, S.D. = 0.89$). In the 3rd week was high ($\bar{x} = 4.4, S.D. = 0.54$). In the 4th week was high ($\bar{x} = 4.45, S.D. = 0.44$). After they attained in the activities their behavior was overall higher.

1.2 As a consequence of students in early childhood education in creative problem solving skills by using group process activities which will be concluded that
1.2.1 Creative Problem Solving skills of students in early childhood education while attaining in the activities was shown that at the 1st attempt was ($\bar{x} = 5.09, S.D. = 0.13$). At the 2nd attempt was ($\bar{x} = 7.09, S.D. = 0.05$). At the 3rd attempt was ($\bar{x} = 8.32, S.D. = 0.11$). Their mean score was higher.

1.2.2 As conceptual Framework of the Creative Problem Solving ability will be divided into

1.2.2.1 Identified the main reason of the Problem namely; the 1st attempt was ($\bar{x} = 1.72, S.D. = 0.59$). The 2nd attempt was ($\bar{x} = 2.35, S.D. = 0.53$). The 3rd attempt was ($\bar{x} = 2.65, S.D. = 0.57$). Their ability was improved higher.

1.2.2.2 Analysis the main of the Problem namely; the 1st attempt was ($\bar{x} = 1.55, S.D. = 0.50$). The 2nd attempt was ($\bar{x} = 2.32, S.D. = 0.61$). The 3rd attempt was ($\bar{x} = 2.8, S.D. = 0.4$). Their ability was improved higher.

1.2.2.3 Creative and synthesizing the best problem solving namely; the 1st attempt was ($\bar{x} = 1.82, S.D. = 0.38$). The 2nd attempt was ($\bar{x} = 2.42, S.D. = 0.50$). The 3rd attempt was ($\bar{x} = 2.87, S.D. = 0.33$). Their ability was improved higher.

2. Creative Problem Solving ability of students in early childhood education in pre and post-experience by using group process activities. Researcher found that the pre-experience has got mean score and standard deviation which were ($\bar{x} = 14.92, S.D. = 1.68$). Then the post-experience has got ($\bar{x} = 27.4, S.D. = 1.89$) which were significantly higher than pre-experience namely;

2.1 Identified the main reason of the problem showed that the pre-experience was ($\bar{x} = 4.8, S.D. = 0.96$) and the post-experience was ($\bar{x} = 8.97, S.D. = 0.86$). After students attained in the activities, they were able to identify the main reason of the problem which was a mean score higher than pre-experience.

2.2 Analysis the main of the Problem showed that the pre-experience was ($\bar{x} = 4.77, S.D. = 1.2$) and the post-experience was ($\bar{x} = 9.02, S.D. = 0.8$). After students attained in the activities, they were able to analyze the main reason of the problem which was a mean score higher than pre-experience.

2.3 Creating and synthesizing the best problem solving showed that the pre-experience was ($\bar{x} = 5.35, S.D. = 1.2$) and the post-experience was ($\bar{x} = 9.05, S.D. = 0.67$). After students attained in the activities, they were able to creative and synthesize the best problem solving which was a mean score higher than pre-experience.

Discussions

1. Regarding to this research found that the creative problem solving ability of students in early childhood education, after attaining in the activities was overall higher related with the research hypothesis. As a consequence of group process activities are able to encourage Creative Problem Solving ability in students, especially creating and synthesizing the best problem solving step which has got a mean score in the pre and post-experience higher than Identified the main reason of the problem step and analysis the main problem step as same as Bruner (1969) reported that Problem Solving Process is a thinking process which occurs in encountered challenged situations and react to it in appropriated solution. The fact of this ability is in Human brain, which has an adaptable unspecified problem solving into specified problem solving. When Human brain compiles uncompleted

information, it will refer or recall related information, experiences, evaluated conclusion. Then it is able to adapt and combine the old information into the new different way to solve problem creatively. Guilford and others (1971) said that Creative Problem Solving consists of knowledge diversity namely; multi-optional problem solving and adaptation of thinking process with promptly and suitably skills, which is improved by students using critical thinking step by step. Then the students should apply it for consideration and additional related facts. As following conditions, Problem Solving Skills are still the most important activity in daily life which should be completed for living joyfully. Also the students should learn how to Creative Problem Solving. Normally we always avoid to encounter with the problem, but if we know how to Creative Problem Solving, we will live for more hopefully and happily. Moreover Torrance (1995) supported that Problem Solving Process is a kind of creative strategy which begin with recognizable problem, realized the problem, found what was missing or gap in information. Then it will be caused by assumption, approval of thinking, review and revision of the settlement. Finally reported the result.

2. This research showed that group process activities lead students to the development of creative problem solving, especially evaluation process which has got the highest mean score in high level. And are all describable that some of the students can criticize the work of their member and the other group. Most of them cooperate together well as long as Thanawut Ladwong (2005) said that individual problem solving skill differs from maturity, I.Q., experiences, interest, emotion, motivation and environment of each other, therefore the development of students critical thinking skills will be improved higher and change their thinking behavior on diversified problem solving that instructor should have been suitable curriculum planning which encourage their development of critical thinking skills. Moreover Usanee Anuruthwong (2011) described that the methods of developing students creative problem solving consists of following below.

1) Practicing to think that the problem is not badness and trying to find the good aspects of the problem.
2) Categorizing and allocating the problem which related purpose of daily life. But if not, should consider what the effect of uncategorized problem is.
3) Considering which is main of the problem and minor problem, separate them and solve the problem as step by step.
4) Many difficulties of the students are not able to separate the real problem out of imaginary problem. The instructor should suggest the students that the imaginary problem consideration is a waste of time.
5) Reversing process of problem solving is another option to solve the problem too.
6) Listing the unsolvable problem and must-do first.
7) Searching for more information about needing information, experiences, solutions and assisting the students express their opinion before it's too late.
8) Having a back-up plan always, if the problem cannot be solved. Students should practice multi-optional critical thinking.
9) Changing the methods of problem solving in multi-options when we encounter with the same old one.
10) Don't be hesitating to self-talk if it's necessary. Because someone can solve the problem by only listing on the paper or stand still with self-thinking, but some of them need partners to help them solving problem.

Group process activities encourage the students' expression their opinion and help each other. According to the curriculum planning, especially group process activities

in research of Tisana Khammanee (2010) said that Group Process Activities are the most actively collaboration of students, which encourage their entire learning system spread higher and wider. The activities are always a kind of subgroup which cooperate and exchange their information or experience easier by students. Instructor facilitates an educational environment for their learning, try to avoid transferring directly knowledge or information to them. These activities still consist of the analysis process and expression about related processes such as procedure, communication, solving problems, decision which all those affect their confidence and performance. As same as reported in Sirintra Puntasri research (2540) about study in group process activities effect of creative thinking development in students of secondary school year 12^{th}, Bankhoknagamplasiem School, T. Sumran A. Muang Khonkaen that the students who collaborated in the activities, have got creative thinking significantly higher than other counterpart at the 0.05 level. Also furthermore, Bang-on Punusi (2001) researched the effects on group process activities in science study, especially "Food" of the secondary school students' year 2^{nd}. Investigating of learning and coordinating behaviors, including academic achievement found that their learning behavior are well coordinated with each other, well express their opinion, self-confidence, problem solving skill, enthusiasm, understand and remember their lesson, good environmental of study. And task group behavior encourages their coordinated, more responsibilities to themselves and the other. Including their academic achievement higher than the standard, which support that development of creative problem solving by using group process activities is effectively higher.

Suggestions

Regarding to specific period of the research and limit budget. The researcher believes that if this will be extended, the creative problem solving by using group process activities is significantly better than this result.

Suggestions for further research

1. Should extend the period of group process activities.
2. Should provide the group process activities to develop other skill such as communication skill, time management skill.

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