Abstract

This research was aimed at: 1) studying students’ learning achievement using the project-based integrated learning process on “Ngoen-thong-khong-mee-kha” or “the Value of Money” with a target of 80% of the students achieving over 70%; 2) developing a project-based group process of 41 Prathom Suksa 2 students from Demonstration School of Khon Kaen University, Primary section (Modindang) in the second semester of 2012. The variables included: 1) achievement of Grade 2 students after the project-based teaching and learning process and 2) the project-based group working process. The research tools used were: 1) integrated teaching plans constructed by the teachers for mathematics, Thai, social sciences, and art work subjects under the topic, “Ngoen-thong-khong-mee-kha” or “the value of money” and 2) the students’ behavior record form. The method applied was classroom action research (CAR) comprising 1) stimulation, 2) planning, and 3) presentation. Quantitative data was collected and computed in percentages, means, and standard deviations. Qualitative data was obtained from observation of students’ behavior in group working, their work outcomes during and after research implementation, and from observation, interviewing and evaluation of work outcomes.

The findings are as follows:

1) As high as 82.60% of the students achieved 70% out of the total scores, which are considered higher than the set criterion.

2) The group work process involved cooperation of the students through the project-based learning. The first step was stimulation in which students consulted in group so as to form the topic of interest. Consensus agreement is very important in group work. All members had to accept the agreement since it was the beginning
of group unity. Then the learning process took place and developed during project implementation. Students gradually learned to work with their friends while interactions took place. Members discussed, shared ideas and obtained others’ opinions while learning took place.

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**Keyword:** Project-based Learning, Problem-solving, Critical Thinking

1. **Introduction**

The National Education Act 1999 and the Amendment (Second Issue) 2002 aimed at forming Thai citizens to be fully developed physically, mentally, and intellectually, and to have knowledge and moral. Education must be based on the principle that everybody is able to learn and develop oneself. Learners are also the most important component in education who should be promoted to grow naturally to their utmost potential. Curricular integration, education reform and usage of all learning resources, especially in the Fourth Section on curricular implementation and instruction are the major core leading to the target of educational reform. Learners will be fully developed as a mature human being. Teachers in this respect need to adjust the behaviors and instruction so that learners are centered and trained to think and be eager to learn. The foundation curriculum of 2001 also proposed an integrated learning process where targets are cooperatively set where learners are the important components.

2. **Problem Statement:**

The project approach is a learning process that enables learners to search information and do activities as they are interested in based on their aptitude and competency. Scientific processes or other systematic processes are used as a means to obtain an answer to a problem (Suwit Moonkham and Orathai Moonkham, 2002). The project approach meets students’ interest and curiosity. Students are able to plan, set the time frame, develop their thinking skill, group working skill, and self-research skill. Learning activities through the project approach decreases the teacher’s role to a manager. Teachers plan for learning to take place in an optimal facilitating environment. Additionally, the project approach meets the target of education reform where emphasis is on the integrated learning process in which knowledge elements are built. This correlates to Ladda Silanoi et al (2005) who mentioned a project-based instruction as a method enabling learners to choose and build their own in-depth learning from various methods and resources. Projects involve construct of knowledge, systematic, procedural and continuous learning. Students learn and draw conclusions on their own and are able to present the results appropriately.

Demonstration School of Khon Kaen University, Primary section (Modindang) has a policy to promote the learner-centered approach. Targeting academic quality and learning achievements of students, Grade 2 teachers were interested in conducting research on the project approach in which an integrated process was applied for teaching mathematics, Thai, social sciences, and art work. Participating teachers cooperated in setting the theme for this research and the learning topic of “Ngoen-thong-khong-mee-kha” or “the Value of Money”.

3. **Research Questions:**

1. How does the project approach used in teaching the topic of the value of money lead to students’ achievement?
2. How does the project approach used in teaching affect students’ group working?
4. Purpose of the Study

1. To study students’ learning achievement from the integrated learning process on “Ngoen-thong-khong-mee-kha” or “the Value of Money” through a project-based process aiming at 80% of the students achieving over 70%
2. To develop a group project-based process of Prathom Suksa 2 or Grade 2 students

5. Research Methods:

Methodology
1. The classroom action research (CAR) was applied in this research, which comprised 1) stimulating interest, 2) planning, and 3) presenting. The researchers collected quantitative data and analyzed it into means, percentages and standard deviations. Qualitative data was obtained from behavioral observation in group working and work outcomes of the students.
2. The target group consisted of 41 Grade 2 students of Demonstration School of Khon Kaen University, Primary section (Modindang) during the second semester of academic year 2012.
3. Variables included:
   3.1 Learning achievements of Grade 2 students after the learning activities based on the project approach
   3.2 Learning process in group work of Grade 2 students using the project approach

Research instruments
The following instruments were used in the research:
1. Integrated teaching plans constructed by the researchers for the subjects of mathematics, Thai, social sciences, and art work under the topic “Ngoen-thong-khong-mee-kha” or “the Value of Money”.
2. The behavioral observation form

Data collection
The researchers collected both quantitative data from the learning achievement test and qualitative data from observation of learning, group working behaviors, and students’ work outcomes.

Data analysis
Data analysis was done quantitatively and qualitatively on the studied variables:
1. Students’ achievements from the project-based integrated learning process on the value of money were analyzed into means (\( \bar{x} \)), percentages and standard deviations (S.D.).
2. Students’ learning skill in group working and students’ work outcomes during and after the research were observed, and students were interviewed and evaluated.

6. Findings:

The results of the study on the integrated learning process on the topic of the value of money using the project approach conducted with Grade 2 students of Demonstration School of Khon Kaen University, Primary section (Modindang) are discussed below:

1. Study of the learning achievements from a project-based integrated learning instruction on the value of money showed that 82.60 of the students achieved at least 70% of the total score, which was higher than the level expected.

2. The results of learning process in group working can be concluded as follows:
   2.1 The interest-stimulation step
   This research on development of project-based integrated learning on the topic of “the value of money” started with the stimulation step in which the researchers brought the students to a study trip at the Northeast National Bank to learn about the history of money from the past until the present. Students learned about savings, roles and function of money. The National Bank provided an officer to lecture this topic to the
students, who were excited in visiting the bank. After the lecture, many students asked the officer questions and noted down for planning their topic for the group work in the following step.

Following this visit at the National Bank, Northeastern branch, students were taken to Big C Super Center, Khon Kaen. This trip was made for the students to learn about money spending only on necessary things. Students also learned to choose the goods that are within the capacity they can afford to buy. They learned to manage changes, receipts and enjoyed surveying goods sold in the store. The department’s officer joined as a guest speaker who introduced quality goods to the students of each group. All returned with some goods of their choices agreed before the visit and paid at the cashier. Students were proud to be able to pay by themselves, for every time they visit a department store, their parents pay for the goods. Students also counted the changes at the cashier and checked the receipt and noted down in their notebook.

The researchers stimulated the students’ interest by showing the usefulness and the importance of the study trip. Knowledge and experiences from the trip were concluded for the students so that they had an idea to form a topic of interest in their group for the project. The topics the students decided to do are:

- Group 1 History of the National Bank
- Group 2 Process of Note (Money) Printing
- Group 3 Evolution of Thai Currency
- Group 4 Checking Note (Money) Fraud
- Group 5 Importance and Usefulness of ATM

2.2 Planning step

After joining into groups, group advisers gave instructions on the process of project approach starting from division of work, searching information for the topic, which was available at the National Bank or the internet in order to make the project chart.

In preparing for information finding, some group members took less responsibility. Some were able to retrieve a lot of information, some found little or information not relevant to the topic. The teachers had to explain and advise on the means to search direct information. Students who were not able to find enough information could ask their parents to help. However, they were told to be aware of their duty and responsibility for the work assigned to them by the group. During this stage, students spent a lot of time in data compilation. When they found adequate information, the group adviser advised them clearly how to place the content on the project chart until all groups understood and were ready to carry out their projects.

In laying out the outline before project implementation, the members began to understand their role and responsibility. Everyone was willing to participate in building their project chart. The advisers now gave advice, praised or commented on the neatness, details and beauty of the project chart. Each member helped in preparing the materials for their chart such as the content, scissors, glue, magic pens, glitters, colorful ribbons, etc. Some groups expected a very good outcome and so prepared good materials for the chart.

From observation of project implementation, we saw members of each group consulting each other how to place the content on the chart so that it looked appropriate and beautiful. All members shared their opinions and accepted the others’ ideas. Group working was smooth and everyone was happy. Nearly all participated and no one blamed the others. They only helped one another. If someone lacked capacity in art work, he or she was assigned other jobs like cutting paper or pasting the glue.

2.3 Presentation step

During the presentation step, students were found to be proud of themselves when their work became successful from evaluation. Many groups made a very good job. They also commented on their own work and the friends’. Although some group was not successful in making the chart because of little information obtained, resulting in a lot of blank space, they did not feel sorry about it. On the contrary, all were proud of their own work and appreciated their friends’ work.
7. Conclusions and Discussions

This classroom action research (CAR) was conducted with an aim to study Grade 2 students’ learning achievement from project-based integrated process on the topic of “Ngoen-thong-khong-mee-kha” or “the Value of Money” expecting 80% of the students achieving over 70%. Learning skill in group working was also investigated using the project approach. The following is the conclusion:

1. From assigning the project to the students for integrated learning process developed by the researchers, we found that 34 students or 82.60% achieved 70 out of the total of 100 scores, which was higher than expected. This was because learning took place from the learning resources close to the students. Learning from what the students were familiar with in their daily life, various activities, and learning from places outside classrooms enabled students to acquire knowledge from real practice. When confronting a problem, they were able to tackle it through the project approach. Learning from real practice helped the students to obtain a body of knowledge that could be used in their real life.

2. From observation of group process from the project approach, the following was found:
   2.1 The role and duty of each member of the group was in participatory characteristic based on the assignment of jobs. Students helped each other without distinguishing leaders or secretaries from other members. Those who were able to do art work were assigned to do the job according to their competence. Those who had no specific capacity were assigned easier jobs and all accepted the others’ roles.
   2.2 Working and being together showed that the students could join and work in group with happiness and pride, notwithstanding the fact that some students were clever or weak. No one showed that they were bored or did not want to do the work. From sampling some students for interviewing, some students said they felt good and did not have any tension. They said their friends participated well. It showed that this project approach greatly developed students’ group working skill.

8. References:

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