Design Research in Learning Loss Recovery Innovation to Prevent Dropout of Jiarawanon-utis 4th School

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ABSTRACT
Design research in learning loss recovery innovation to prevent dropout students of Jiarawanon-utis 4th school aims to 1) diagnoses the learning loss of school. 2) Design and develop an innovative prototype to revive students' learning loss. 3) Analyze the effect of using the innovative model to rehabilitate students' learning loss. The research results can be summarized as follows:
1) The results of the analysis of students' learning loss found that most of the students were in the promotion group followed by the recovery group, and risk dropout group respectively. Problems encountered: Some students had to help their parents with their work. Some students lacked motivation to study online. In addition, teaching and learning were not interesting.
2) Learning recession recovery innovation consists of 3 components: (1) Input consisted of learning recession analysis and analysis of student needs. (2) Process consisted of designing a short-term rehabilitation by providing additional instruction in core subjects before the semester, Long-term rehabilitation design using Thongkwaw planting, Mental health enhancement using music and sports, Coordination of networks and stakeholders, Strengthening teachers' potential through PLC. Monitoring and evaluation. (3) Output was to check the experimental results of implementing innovation with a reflection.
3) The results of rehabilitation of learning recession showed that students had developed more knowledge, skills and desirable characteristics which teachers and parents reflected from observing student behavior, such as being brave and like to answer teacher's questions, increasing homework assignments, students liked to come to school, absenteeism decreased, enjoyment of music and sports, no fighting behaviors, which showed increased readiness to study. Parents were satisfied with the implementation of the learning recession recovery. Moreover, there were no students risk dropout.

Keywords: Dropout, Learning Loss, Design Research

1. INTRODUCTION
In 2021, the epidemic situation of the COVID-19 virus spread widely in Thailand. It affects our lives a lot. And it also affects teaching and learning as well. School must be closed. Students cannot come to study together in class. Teachers have to change their teaching methods. Students have to change the way they learn. In order for the learning of students to continue, such as learning On hand, Online, On demand, etc. Although teachers and students have adapted to teaching and learning. But still there are students Some parts are not fully learned. This may be due to the lack of modern learning technology, or caused by restrictions on the spread of the COVID-19 infectious disease. Students can come to study in class. Schools need to rehabilitate the learning loss to be appropriate for each group of students.
2. **METHOD**
   
a. **Participants**
The target groups in this research were School administrators, teachers, school officer and students in the academic year 2022 by purposive random sampling were 1 school administrator, 7 teachers, 3 school officers and 94 students.

b. **Measures**
1.2.1 Assess students' reading and writing skills using a test.
1.2.2 Assess stress using the Department of Mental Health stress assessment form.
1.2.3 Assess learning development after recession recovery was assessed using observe record form.
1.3 **Procedure and design**
Phase 1 Analysis and survey
Teachers diagnose student learning loss based on OBEC's must-know indicators and group students and assess student stress and mental health.
Phase 2 Design and development of innovative prototypes to revive students' learning recession. Teacher use the design thinking process in 5 steps as follows:
1. Empathize: Understanding Emotions group problems and needs.
2. Define: Defining the problem by asking questions to lead to solutions.
3. Ideate: Generation of ideas by brainstorming solutions from related theories
4. Prototype: Prototyping and design the intervention
5. Test: Testing by bringing the prototype to trial.
Phase 3: Assessment and Reflection
Assessment and Reflection After completing the process, the teacher observes the student's learning development and combines the observations and reflections using the AAR process. After that, the satisfaction of teachers and parents is assessed. Finally, the result was developed as a prototype.

c. **Data Analysis**
The data from this research was a combination of quantitative and qualitative data. The quantitative data were analyzed using descriptive statistics consisted of frequency and percentage by a computer program. The content analysis was applied for qualitative data.

3. **RESULT AND DISCUSSION**
1. Diagnosing student learning recession.
1.1 Classification of students according to needs to learning loss recovery into 2 groups as follows: 1) An urgent group of 40 people, namely
   - Grade 1 - 3, 34 students
   - Children with special need, 6 students
2) Normal group, 60 people, namely
   - Elementary class, 14 students
   - Grade 4-6, 23 students
   - Grade 7-9, 23 students
3) No students were at risk of dropout.
1.2 Student stress assessment found that no students were stressed.
2. Design and development of innovative prototypes to revive students' learning loss.
The researcher uses a 5-step Design Thinking process. The school has devised a program to reverse the learning loss in two phases.
2.1 **Short term program.** Held one week before the start of the semester. Grade 1 - Grade 9 students review Thai language, mathematics, science and English. Kindergarten organizes activities for children to play games, sing songs, play together with friends.
2.2 Long term program.
2.2.1 Kindergarten organize experiences according to the concept of High Scope
2.2.2 Students in grade 1-grade 3 groups and children with special needs used to teach reading-writing reinforcement, after school
2.2.3 Students in grades 4-grade 6 provide integrated learning by using problem-based learning Units Rice and expose students to additional music and sports
2.2.4 Students in grades 7-grade 9 provide integrated learning by using problem-based learning Units Thongkwaw fence, Units Rice and expose students to additional music and sports

3. Result of using innovative prototypes to revive students' learning loss. According to the teachers' reflections, it was found that when organizing a learning loss rehabilitation program for students. All groups of students have knowledge and are ready to learn more. However, students in grade 1-grade 3 and students with low levels of reading and writing skills, teachers should arrange for students to practice reading. Written during lunch break and more free time than after school.

4. CONCLUSION
The problem-based learning approach is suitable for learning loss recovery. Because students can learn anytime, anywhere, students have developed all competencies, including communication, thinking, problem solving, ICT, and life skills. This is in line with the study of Kittisak Jai-on and Kattanyuta Bangtho, who studied learning management by using problem-based learning to promote the ability to design learning management in the 21st century. The study found The students were satisfied at the highest level about problem-based learning, using problems that were consistent with real situations, promoting student participation. And useful and can be adapted to use in their own profession. Problem Based Learning should be extended to other levels.

REFERENCES
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