A Case Study of Problem-Based Learning Application Using Google Classroom: Focused on Learning Korean

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온라인상에서 구글 클래스룸을 활용한 문제중심학습 적용 사례 연구: 한국어 학습을 중심으로

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Abstract This paper applied to the Korean Lesson using PBL(Problem-Based Learning) based on Google Classroom for Mongolians. Recently, Mongolians trying to learn Korean because of Korean wave. This study aims to develop the online problem-based learning model as a way to develop the creative problem-solving ability of Mongolians who want to learn Korean. We applied 3 problems for 9 weeks. This study shows that the participants experienced the effectiveness of Google Classroom and PBL in many ways, 93% of the participants reported that Google Classroom and PBL helped them to learn Korean easily and interesting distance learning model, 90% of the participants prefer to explore Googlish programs and online learning, 85% of them said that increased interaction others in online environment easily. 100% of them said that thankful for learning Korean with Online tutor anytime on Google Classroom. Truly, 86% of them said PBL was hard to generate and understand it because very new instruction for them and working with team in online learning environment. The study showed that members of Korean Lesson experienced various effects such as understanding of learning contents, understanding of cooperative learning, practical experience, creative problem solving ability, presentation skill, communication ability, self - directed learning ability, self - confidence through Google Classroom based PBL.

요 약 본 논문은 몽골인들을 위한 구글 클래스룸을 기반 PBL(Problem Based Learning) 한국어 수업 모형을 개발하였다. 최근 몽골인들은 한류 때문에 한국어를 배우고자 노력하고 있다. 한국 텔레비전 드라마는 전체 방송 프로그램의 약 90%를 차지한다. 본 연구는 한국어를 배우려는 몽골인들의 창의적인 문제해결 능력을 개발하는 방법으로 온라인 문제 기반 학습 모델을 개발하는 것을 목표로 한다. 우리는 9주 동안 3가지 문제를 적용했다. 이 연구는 참가자들이 구글 클래스룸과 PBL의 여러 가지면에서 효과적임을 경험했으며, 93 %의 참가자가 구글 클래스룸과 PBL을 활용해서 한국어를 쉽고 재미있는 원격 학습 모델로 배울 수 있었다고 응답했으며, 90 %의 참가자가 Googlish 프로그램들을 더 배우고 싶다고 했으며, 85%는 온라인 환경에서 다른 사람들과의 상호 작용이 쉽게 증가했다고 말했다. 그들 중 100 %는 언제든지 구글 클래스룸에서 온라인 교사와 함께 한국어를 배우는 것이 좋다고 했다. 실제로 그들 중 86 %는 PBL이 온라인 학습 환경에서 새로운 지침을 제시했기 때문에 처음에는 PBL을 이해하기가 어렵게 느꼈다고 말했다. 이번 연구는 한국어 수업의 구성원들이 구글 클래스룸 기반 PBL을 통해 학습 내용 이해, 협력 학습 이해, 실습 경험, 창의적인 문제 해결 능력, 프레젠테이션 능력, 커뮤니케이션 능력, 자기 주도 학습 능력, 자신감 등 다양한 효과를 경험했다는 것을 보여주었다.

Keywords : Effectiveness, Google Classroom, Online Learning, Problem-Based Learning, Problem- Solving

1. Introduction

The purpose of this study is to investigate the online problem - based learning model for Mongolians who want to learn Korean language in order to cultivate their creative problem solving ability. Problem - based learning is a learner - centered learning environment and model in which learning takes place while learners solve the presented problems. Participants learn thinking strategies and domain knowledge together. The goal of problem-based learning is to help participants develop flexible knowledge, effective problem-solving skills, self-directed learning, effective collaborative skills, and intrinsic motivation.

PBL is a learner-centered learning model as a practical approach to constructivism. In order to solve the practical problem, the learner can acquire the interest of learning, active attitude, experience as self-directed learner, and attitude as cooperative learner by setting goals and solving them as subjects.

At the center of the problem, learners find out what they already know, what they should know, where they can find information and how to approach them. Tutor should expand participants' understanding while at the same time forming and encouraging participants the confidence to challenge them. We use Google Classroom when we are away from the traditional teaching-learning philosophy centered on lectures and are teaching in online space. The problem-oriented learning of 16 Mongolian participants who want to learn Korean is conducted through the online space with three problems. In order for this online problem-based learning to work effectively in the Google Classroom, tutor will give feedback every day and continue to develop a space for learning Korean.

This study contains Research needs and objectives in Chapter 1, Problem- Based Learning in Linguistics, Online PBL, Google Classroom, PBL Korean Lesson design model for Mongolians, Problems for the PBL Korean lesson, Methodology, Procedures of the class in Chapter 2, Conclusion in Chapter 3.

2. Literature Review

2.1 Problem- Based Learning in Linguistics

PBL in a language classroom focuses on both linguistic skills and technical skills[1]. Most schools adopt a traditional teacher-centered approach to teaching foreign language contents. However, this approach is that students are often passive receptors of knowledge. The PBL approach would enable students to engage in collaborative decision-making and team-building skills as they learn to solve the problem through group negotiations with other students. In addition, the PBL approach would encourage students to venture into 'thinking out of the box' as the problem assigned for them to solve is usually open-ended and does not require a prescribed approach to problem solving. As students engage in solving the problem, they would also learn the processes involved in finding solutions to the problem resulting in deep learning. Through PBL, students would also learn to adopt an inter disciplinary approach to problem solving. The PBL approach would encourage self-directed learning as students decide for themselves how they should go about finding a solution to the problem[2]. Rather than the teacher dispensing a prescribed linguistic content, students plan and decide the course of action they would have to take.

2.2 Online PBL

As with most innovations change is rapid, yet the change is not just about the pedagogy but also the discipline, arena and practice. Some of the types of PBL, which are illustrated below, are

possibly more flexible in their pedagogy and approach, and fit better with PBL online than some of the more bounded models of problem-based learning[3]. Online support for PBL can enable students to maintain their focus on the problem task outside of class times by providing access to all course resources, and communication through online discussions. The relative effectiveness of a PBL approach has been identified as being contingent on the skill of the facilitator (Hmelo-Silver, Chernobilsky, & DaCosta, 2004; Tan, 2004). If the PBL module is online this means that aspects of facilitation need to use online discussions and other online resources to support the students as they move through the stages of resolving a PBL problem. Online discussions can be structured to encourage engagement and participation (Salmon, 2002). Taking a PBL approach using online technologies to provide a learning environment to support the process may be a way to enhance student learning outcomes[4]. In a typical online learning experience, students use the Internet to go through well-defined sequences of instruction to complete learning activities and reach learning objectives [5]. In a online PBL students figure out what to do , they have to identify what the problem is ,they have to identify what important to solve the problem, how to formulate an answer, where to get the information, what process has to be employed[6].

2.3 Google Classroom

Google Classroom is a free paperless application including Google programs such as G-mail, Google Docs, Google Forms, and Google Presentations. Synchronous collaboration tools are vital for the effective use of Google Classroom because tools such as Chat, shared white boards, video conferencing used Google Hangouts and group browsing are central to ensuring collaboration within the PBL team.

Google Classroom can produce, collect and grade assignments for the teacher and provide immediate feedback to students. Teachers and students can get into the Google Classroom from anywhere and utilize the application at home to complete assignments[7]. All the changes were in beta development, though, so only those participating in the company's early adopter program had access. Most notably for teachers, the company has released Course Kit, a free toolkit that gives instructors the ability to use Google Docs and Drive in conjunction with their existing learning management system (LMS)[7].

2.4 Korean Lesson PBL design model based on Google Classroom for Mongolians

This lesson is defined here as participants working in teams of four on a series of problem scenarios. They are expected to work collaboratively to solve or manage the problem. They will work in real-time or asynchronously, but what is important is that they work together.

As participants work with each problem they can:

Develop their diagnostic reasoning and analytical problem-solving skills.

Determine what knowledge they need to acquire to understand the problem, and others like it.

Discover the best resources for acquiring that information.

Carry out their own personalized study using a wide range of resources.

Apply the information they have learned back to the problem.

Integrate this newly acquired knowledge with they existing understanding.

In short, they will be learning in a highly relevant and exciting manner to problem-solve and to develop self-directed study skills that build toward the skills and knowledge that they will need.

The model of Korean lesson PBL concluded (1)Present the Problem, (2)explore knowns and unknowns, (3)Gather informations, (4)Generate possible solution, (5)Assess progress, and (6)Refining.

Problem1 for the PBL Korean lesson

You are a Korean language teacher at the Foreign Language Training Center in Korea. You are here to attend 'Korean language&Culture' training event in Khentii aimag, Mongolia, to teach Korean language and features, Korean alphabet, Korean sentence structure, creative methods to learn Korean language. That school invited you to this OPEN FRAMEWORK to work together.

Therefore, please prepare the content for the fifth grade students before the specified time.
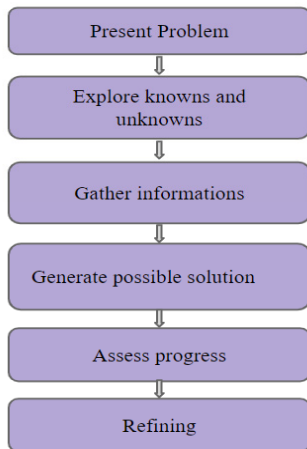

Fig. 1. Korean Lesson PBL design model

Tutor presents the problem to the participants using video, text and pictures in step 1. Participants analyse what they know or not in step 2. And tutor set up the teams in this step. Participants have to work with their team members in online room. Participants gather informations to solve the problem in step 3. Participants generate the most viable solution in step 4. Tutor assess the process and participants evaluate themselves, team members and tutor activity in step 5. Finally, Tutor reviews hole process of the lesson and refines the PBL Korean Lesson model.

2.5 Methodology

Data was gathered from surveys within participants of PBL Korean Lesson. Participants were distributed across 4 teams. Measures were created to represent the model of Problem-Based Learning Application Using Google Classroom components described in the beginning, and learning outcomes were measured using items from the final survey administered to the participants at the end of the lesson.

2.6 Procedures of Korean Lesson PBL

Online PBL procedures included exploring issues, writing what they know, defining the problem statement, list out possible solutions, list actions, collect information, write the solution and review the performance below:

1) Explore the issues:

Instructor introduces an "ill-structured" problem to students. Discuss the problem statement and list its significant parts. Participants will have to gather information and learn new concepts, principles, or skills as you engage in the problem-solving process.

2) List "What do we know?"

This includes both what students actually know and what strengths and capabilities each team member has.

3) Write out the problem statement

A problem statement should come from the group's analysis of what they know, and what they will need to know to solve it. They will need: a written statement the agreement of their group on the statement feedback on this statement from their instructor.

4) List out possible solutions

List them all, then order them from strongest

to weakest. Choose the best one, or most likely to succeed.

5) List actions to be taken with a timeline

What do we have to know and do to solve the problem?

How do we rank these possibilities?

How do these relate to our list of solutions?

6) List "What do we need to know?"

Research the knowledge and data that will support participants' solution.

They will need to information to fill in missing gaps.

Discuss possible resources

Experts, books, web sites, etc.

Assign and schedule research tasks, especially deadlines

7) Write up the solution

Participants may need to present their findings and recommendations to a group or classmates.

This should include the problem statement, questions, data gathered, analysis of data, and support for solutions or recommendations based on the data analysis: in short, the process and outcome.

8) Presenting and defending conclusions

They have to prepare

State clearly both the problem and conclusion

Summarize the process they used, options considered, and difficulties encountered

Help others to learn

Sharing findings with tutors and participants is an opportunity in demonstrating that participants have learned.

9) Review the performance

This debriefing exercise applies both to individuals and the group.

3. Conclusion

We applied 3 problems for 9 weeks. The study showed that members of Korean Lesson experienced various effects such as understanding of learning contents, understanding of cooperative learning, practical experience, creative problem solving ability, presentation skill, communication ability, self‐directed learning ability, self‐confidence through Google Classroom based PBL. Participants experienced cooperative learning, creative problem solving, presentation, self‐directed learning, self‐confidence in the Online PBL lesson based on Google classroom. Even though PBL and Google Classroom were new for them it was active lesson at all. Participants perceived it as a new and effective way to develop their experience. In this study illustrated Online PBL Lesson which is focused on Importance of the distance cooperation, Practical relevance, meaningful context, Sharing responsibility for learning second language, Climate of openness, trust and encouragement, motivation, Questioning, Encouraging interaction.

This study shows that the participants experienced the effectiveness of Google Classroom and PBL in many ways, 93% of the participants reported that Google Classroom and PBL helped them to learn Korean easily and interesting distance learning model, 90% of the participants prefer to explore Googlish programs and online learning, 85% of them said that increased interaction others in online environment easily. 100% of them said that thankful for learning Korean with Online tutor anytime on Google Classroom. Truly, 86% of them said PBL was hard to generate and understand it because very new instruction for them and working with team in online learning environment. The limitations of this study could be summarized as follows: first, this study adopts the Google Classroom and PBL for Mongolians with no further extensions. We have to study more about Online PBL for Mongolians specialy for Linguistic program.

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