Project-based learning: Does it really effective to improve social’s skills of elementary school students?

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Abstract. In 21 centuries, teacher area required to have high accountability in facilitating their students to achieve various knowledge and life skills in society. An appropriate learning model that meet the students' needs is essential to develop social skills because the learning model that emphasizes only on the skills of the students as individuals will not allow them to face the challenges of life that demand them to collaborate with other. This research aimed at developing an innovative learning model that facilitate students to optimally achieve social skills as one of the social studies objectives and investigating the significance of the effect of project-based learning model on the social skills of fifth grade students of elementary. The research is done by experimental method with non-equivalent control group design. Based on our findings, it was concluded that project-based learning model had no significant effect on improving the student’s social skills.

1. Introduction

Social skills such as collaboration, have several aspects that are closely related to socialization activities. Collaboration is one of the competencies skills needed in 21 centuries apart of communication, creativity, and problem solving. Several studies have attempted to identify features of collaboration, and some have sought to link specific kinds of collaboration to student learning outcomes [1-3]. The need to collaborate not only will benefit academic performance but also increase mental health [4,5].

Competencies expected from students are expressed in general learning objectives that must be mastered or displayed after the learning process is complete [6]. To achieve collaboration skills, besides the need to achieve High Order Thinking Skills (HOTS), students need to develop self-motivation to such degree that it will help them more sustainable. Self-motivation is a basic desire that encourages individuals to achieve various needs of themselves. To meet the basic needs of students, the teacher uses the natural curiosity of students' curiosity by presenting suitable and meaningful material to students [7-9]. So, it is necessary to apply the appropriate learning model such as Project-based Learning (PBL). PBL can be viewed as ways to reorient youth, in communities undergoing extreme circumstances resulting from a range of risks, toward the transition to young adulthood [10-14].

Based on preliminary investigation, primary schools today still use an inappropriate learning model to increase social skills. There is also result that show Indonesians Millennial Generation had low level frequent to use HOTs [15]. Teacher still tend to focus enhancement on academic foundation and stick...
to old sense of meaning, such as literacy that limited to read and write ability. Therefore, we will try to implement PBL on elementary schools to see if it can optimally achieve social skills as one of the social studies objectives and investigating the significance of the effect.

2. Literature review

2.1. Student learning style
Education is related to humans, humans are unique, always have differences, and needs to socialize in order to cultivate them as a person. Therefore, we must treat students with respect of their differences and facilitate them to a comfort zone that will help them achieve learning outcomes. Some learn best by hearing, or seeing, or writing, or experiencing, or manipulating, or a combination of these. Many students experiencing learning difficulties may never have developed an effective learning style. Based on previous research, learning styles instruction enjoying broad acceptance in practice. We will try to implement the 4MAT systems (figure 1) on PBL model, so, the school for quality learning assumes responsibility for developing an effective learning style for all students [16-18].

![4MAT systems](image)

**Figure 1.** The 4MAT systems.

2.2. Cultural background
Indonesians well known for having variety of culture. Previous research validated correlation between student cultural background and academic achievement. Students may have difficulty to embedding themselves into the new culture. It can be the most challenging aspects of early student life, involving a willingness to change and adapt [19,20]. Based on preliminary investigation, preliminary school’s teacher tends to neglect their student cultural diversity so it very much affects social skills of the student’s particularly willingness to collaborate with other. Therefore, we will take consideration of student’s cultural background for the model.

3. Method
The research is done by is done by a quasi-experimental method with a non-equivalent control group design [21]. Research conducted to 50 students of fifth grade elementary school that meet the basic criteria based on our observation. We then divide the samples into two group with 25 students on control group and 25 students on experimental group. The experimental group use PBL model for teaching learning activities while the control group none. The research instruments used were questionnaires and tests.
4. Results and discussion
According to research procedure, Firstly, we conduct pre-test with the same instrument on both classes. After pre-test conclude we proceed on the treatment then Lastly, we conduct post-test to assess and evaluate whether the hypothesis is correct or not. Data processing technique consist of normality, homogeneity, linearity, t-test, and regression analysis. The discussion will be focus on t-test and experimental group regression analysis.

4.1. Pre-test results

| n EG | n CG | P value | Sig. (α) | Note |
|------|------|---------|----------|------|
| 25   | 25   | 0.755   | 0.05     | Indifferent |

Table 1 show result of t-test analysis on pre-test data. It shown that p value is 0.755 turned out to be greater than $\alpha = 0.05$. It can be interpreted that there are no differences of social skills between Experiment Group (EG) and Control Group (CG).

4.2. Post-test results

| n EG | n CG | P value | Sig. (α) | Note |
|------|------|---------|----------|------|
| 25   | 25   | 0.001   | 0.05     | Different |

Table 2 show result of t-test analysis on post-test data. It shown that p value is 0.001 turned out to be smaller than $\alpha = 0.05$. It can be interpreted that there are differences of social skills between Experiment Group (EG) and Control Group (CG) after the treatment.

4.3. Regression analysis

| Data     | N   | Sig. | $\alpha$ | Percentage (%) | No Influence |
|----------|-----|------|---------|----------------|--------------|
| Pre-Test | 25  | 0.516| 0.05    | 1.9            | No Influence |
| Post-Test|     |      |         |                |              |

Based on table 3, the sig. value is 0.516 which is greater than $\alpha = 0.05$. We also found that influence percentage of the treatment is 1.9%, which mean the different of value influenced by another factor about 98.1%. It can be interpreted that there is no significant influence from the PBL model to improvement of student’s social skills.

5. Conclusions
As the result shown that PBL model has no significant influence to improvement of student’s social skills, it can be interpreted that PBL model is not good at all. Many studies shown the effectiveness of the PBL model but there are also some that shown negative results just like ours [22,23]. We conclude there are several factors that can influencing those result, which are (1) student preferences, (2) teacher and student ability, and (3) extracurricular activity. Student preferences for the old model that they already get used to are one of the factors that affect their motivation to be active learner. Some of the students tend to go passive, act dumb, and just waiting for the teacher to give the right answer.

The teacher ability to employ PBL model also must be take into consideration. Mastering a new model need time and experience. As we known on introduction section, the teacher still has to adapt from old model to our modified PBL model that relatively new. Another possibility is the student ability
could also be good from the start, so the data we will see little different of value before and after treatment.

As seen on the table 3, 98% of student’s social skills improvement affected by another factor. We analyse that the biggest factor is the curricular activity. The scout program, Friday recite, lunch together on the break, and also cleaning duty after class with the teacher have great deal in improving students’ social skills. Habituation that concur more often than class activity could be more effective than PBL model to improving student’s social skills.

References

[1] Ronfeldt M, Farmer S O, McQueen K and Grissom J A 2015 Teacher Collaboration in Instructional Teams and Student Achievement American Educational Research Journal 52(3) 475–514.
[2] Goddard Y L, Goddard R D and Tschannen-Moran M 2007 A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools Teacher College Record 109(4) 877–896
[3] Goddard Y, Miller R, Larsen R, Goddard G, Jacob R, Madsen J and Schroeder P 2010 Connecting principal leadership, teacher collaboration, and student achievement American Educational Research Association Annual Meeting, Denver, CO
[4] Hinyard L, Toomey E, Eliot K and Breitbach A 2018 Student Perceptions of Collaboration Skills in an Interprofessional Context: Development and Initial Validation of the Self-Assessed Collaboration Skills Instrument Evaluation & the Health Professions
[5] Ofstedal K K and Dahlberg K 2009 Collaboration in student teaching: Introducing the collaboration self-assessment tool Journal of Early Childhood Teacher Education 30 37–48
[6] J Elizabeth and R Voorhees 2002 Defining and assessing learning: exploring competency-based initiatives National Center for Education Statistics
[7] Bloom B S, Engelhart M D, Furst E J, Walker H H and Krathwohl D R 1956 Taxonomy of educational objectives: The classification of educational goals (New York: David Mckay, Co., Inc.)
[8] Dewey J 1933 How we think: A restatement of the relation of reflective thinking to the educative process (Boston: D.C. Heath and Company)
[9] Ornstein, Allan C, Daniel U Levine, Gerald L Gutek and David E Vocke 2011 Foundation of Education (Wadsworth: Cengage Learning, USA)
[10] Maida C A 2011 Project-Based Learning: A Critical Pedagogy for the Twenty-First Century. Policy Futures in Education 9(6) 759–768
[11] Beck S 2005 Work, Experiential Learning, Lived Practice and Knowing-in-Action, Anthropology of Work Review 26(2) 1-5
[12] Bender T 2007 The Unfinished City: New York and the Metropolitan idea (New York: New Press)
[13] Christensen C M, Horn M B and Johnson C W 2008 Disrupting Class: how disruptive innovation will change the way the world learns (New York: McGraw-Hill)
[14] Dimmock Clive 1995 Restructuring for School Effectiveness: Leading, Organising and Teaching for Effective Learning Educational Management Administration & Leadership 23(1)
[15] Kusuma M D, Rosidin U, Abdurrahman A and Suyatna A 2017 The Development of Higher Order Thinking Skill (Hots) Instrument Assessment In Physics Study IOSR Journal of Research & Method in Education (IOSRJRME) 7(1) 26-32
[16] Pashler H, McDaniel M, Rohrer D and Bjork R 2008 Learning styles: Concepts and evidence Psychological science in the public interest 9(3) 105-119
[17] Scott C 2010 The enduring appeal of “learning styles Australian Journal of Education 54(1) 5–17 (EJ889818)
[18] Cuevas J 2015 Is learning styles-based instruction effective? A comprehensive analysis of recent research on learning styles Theory and Research in Education 13(3) 308–333
[19] Barton A, Duuren M V and Haslam P 2007 Perceived Social Benefits of Voluntary Student
Collaboration Psychology Learning & Teaching 6(1) 26–32

[20] Underwood J D M 2003 Student attitudes towards socially acceptable and unacceptable group working practices British Journal of Psychology 94 319–337

[21] Singh Ranbir 2016 Research Method (Bandung: UPI Press.)

[22] Spronken-Smith R and Harland T 2009 Learning to teach with problem-based learning Active Learning in Higher Education 10(2) 138–153

[23] Parker W C, Lo J, Yeo A J, Valencia S W, Nguyen D, Abbott R D, Vye N J 2013 Beyond Breadth-Speed-Test: Toward Deeper Knowing and Engagement in an Advanced Placement Course American Educational Research Journal 50(6)