



RESEARCH ARTICLE

Social science education based on local wisdom in forming the character of students

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Abstract

This research was conducted to determine the impact of project-based learning with local wisdom in teaching social science subjects to increase critical thinking ability moderated by students' self-efficacy. This experimental research employed a quantitative approach utilizing a probability sampling technique with a clustered sampling method to select particular groups within a population. Thus, as a sample, class XI IPS 2 was chosen as a control group and XI IPS 3 as an experimental one. The test results showed that each of the instruments was valid and reliable and met the classical assumptions. The indicated that project-based learning with local wisdom moderated with good self-efficacy can improve critical thinking ability. The integration of project-based learning with local wisdom into learning is necessary so that the methods applied by teachers not only focus on academic results but also inculcate the values of local wisdom. Therefore, it would be better if teachers at every level could integrate an approach to learning that incorporates local wisdom.

Keywords: Project-based learning, Local wisdom, Social science subjects, Critical thinking, Self-efficacy.

Introduction

As explained in Law number 20 of 2013 on the National Education System, social science subjects are study materials that must be included in the basic secondary education curriculum, which includes geography, history, economics and sociology, which are intended to develop students' knowledge, understanding, and analytical ability towards social conditions of society. In addition, social studies learning is a lesson given to students in all school levels

(Fleming, 2021). Social studies subjects provide students with knowledge about life in society and its environment and the problems that occur in it (Settersten *et al.*, 2020). The problems that occur include cultural, economic, and political problems (Rumjaun & Narod, 2020). Therefore, in social studies learning, it is obligatory for the students to always display their sensitivity to the problems around them and analyze them critically (Aldina & Fadhli, 2020). Thus, students, especially those at the Senior High School, Vocational High School level, must possess the capacity to think critically (Hussin *et al.*, 2019).

In this case, an educational framework for teaching social science subjects that can help students develop their critical thinking skills is needed (Tasnim *et al.*, 2019). Various kinds of literature indicate that project-based learning is one of the educational approaches capable of improving learners' critical thinking ability is (Parwati *et al.*, 2019). It is a student-centered approach in which the teacher serves the role of not only a motivator but also a facilitator who provides the students with the opportunity to work independently in developing their own learning to increase their ability to think critically (Shin, 2018).

In addition, to further maximize the improvement of students' thinking ability, environment-based learning also needs to be added. Environmental-based learning is learning that emphasizes the environment as a media or learning resource (Oh *et al.*, 2020). Environmental-based learning is the implementation of formal environmental education (Abuhmaid, 2020). One of the most appropriate

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environmental-based education is environmental wisdom. Local wisdom refers to all activities that reflect local societies' way of life, insights, and living practices in response to the many situations in fulfilling their needs (Albantani & Madkur, 2018). Thus, by looking at the environmental wisdom surrounding students, they will be able to think more broadly and critically of the environment (Laberge, 2019).

On the other hand, increasing critical thinking is also influenced by self-motivation, namely self-efficacy, which refers to someone's conviction in his capacity to accomplish something or to successfully face a circumstance. This was also investigated by KOZİKOĞLU & KOZİKOĞLU (2019) who stated that the increase in critical thinking can be influenced by self-efficacy. Therefore, according to the earlier explanation, the researchers were interested in identifying the impact of project-based learning with local wisdom as moderated by students' self-efficacy on the students' critical thinking skill growth in social science learning.

Theoretical Review

Project-Based Learning (PjBL) with Local Wisdom

Project-based learning allows learners to be in charge of their own learning activities, work together on collaborative assignments, generate final products and share them with others (Aldabbus, 2018). The project-based learning model places the emphasis on learners and positions a teacher as a motivator and facilitator, allowing students to work independently to develop their learning (ALTINTAŞ & KARAASLAN, 2019). PjBL promotes collaboration, encourages students to think critically, and gives them the freedom to be creative while providing them guidance on how to acquire information independently and present it. It typically calls on the students to willingly participate in prescribed authentic instructional tasks which primarily necessitate cooperation (Juandi *et al.*, 2021).

Local wisdom is an approach to life, insights, and diverse ways of living, as displayed through local societies' practices in response to a range of situations they face and to fulfill their basic requirements (Pesurnay, 2018). Local figures develop local wisdom through continuous absorbing and deciphering religious and traditional principles that are institutionalized as norms and adopted as guidelines in the community's daily activities (Mardhiah *et al.*, 2021). Local wisdom is communicated through proverbs, rhymes, poetry, folklore, and other verbal philosophical expressions; social and ethical conventions, tenets, standards, and regulations that make up the social structure; formal or customary ceremonies and rituals, customs that manifest in everyday conduct during social exchanges between people. Culture (values, standards, ethics, beliefs, practices, traditional laws, and particular rules) is one of the ways that local wisdom can be articulated within a society. Love for God, the universe, and all that resides within it. Obligation, discipline, and

autonomy; integrity, courtesy and reverence; empathy and tenderness; confidence, ingenuity, perseverance, and never giving up; accountability and authority; generosity and modesty; tolerance, affection, peace, and togetherness are among the noble values of local wisdom (Prahara *et al.*, 2018).

In the educational process, students can foster their aptitude by integrating the potential of local wisdom so that the knowledge gained can be useful in solving problems that exist in the community. According to Nurani Dewi, Poedjiastoeti, Kurnia Prahani, & Poedjiastoeti Professor, (2017) local wisdom is basic proficiency acquired from a life that is in balance with nature with the existing and inherited cultural problems of the community. Local wisdom can also manifest in traditional expertise, competencies, intellectual ability, resources, social mechanisms, values or standards, and traditions (Uge *et al.*, 2019). Local wisdom integrated in project-based learning will provide a new nuance for students. Learning at school, especially about social sciences will be very fun if it is presented in a fun context such as local wisdom (Selasih & Sudarsana, 2018). Project-based learning (PjBL) with local wisdom can develop the various skills needed. These skills can be acquired through project-based learning combined with local cultural knowledge. Through this intergrade, so, with the existing advantages, students' critical thinking ability can increase. Indicators from PjBL, according to Ayukanti (2017) are:

- There is a problem whose solution is not prearranged;
- Learners as process creators to accomplish outcomes;
- Learners are in charge of obtaining and organizing the acquired information;
- Carrying out ongoing evaluation;
- Learners consistently review their performance;
- A product and an assessment of its quality are the outcomes;
- There is a culture in the class that accepts mistakes and growth.

Critical Thinking

Critical thinking is among the abilities which students need to develop. At high school level, students are expected to have critical thinking ability through a scientific approach as self-development that is learned in educational units (Lee *et al.*, 2016). It is a cognitive capacity that serves as the most significant indicator of students' mental development. (Bandyopadhyay & Szostek, 2018). Therefore, developing critical thinking skills is a prerequisite at all levels of education so as to enable students to assess their stage of critical thinking proficiency. Critical thinking is divided into two dispositions: (1) it is essential for an individual to be capable of performing their duties based on truthfulness, lucidity, relevance, and logic, (2) depending on the evaluation process by applying parameters for evaluating the responses that are owned, in this case the delivery may be made either implicitly or explicitly (Duran & Dökme, 2016). As for the indicators of critical thinking skills (Table 1):

Table 1: Critical thinking

<i>Dimension</i>	<i>Indicator</i>
Basic clarification	Emphasis on a Question, Examine Arguments, Ask and Answer Clarification Question
Based for decisions	Evaluate the source reliability, Observe and evaluate observation reports
Inference	Infer and evaluate inferences, Induce and evaluate inductions
Advanced Clarification	Explain the term and evaluate the explanations, Definitional Strategy
Strategies and Tactics	Deciding on actions

Students' Self-Efficacy

Self-efficacy is someone's conviction to accomplish something or successfully face a circumstance (Lu *et al.*, 2020). As stated by Bandura, self-efficacy refers to individual's perceptions of their capacity to produce stages of accomplishment and manage circumstances that have an impact on their life. Self-efficacy also influences the way individuals think, feel, inspire themselves, and act (Chai *et al.*, 2016).

According to Bandura, there are three kinds of aspects of self-efficacy, including (a) the extent of difficulty of the activity; When encountering activities that are arranged based on their complexity, that low, medium, and high, a person tends to perform the acts he or she feels capable of accomplishing in order to fulfill the behavioral requirements necessary for each stage, (b) generality related to the wide range of tasks faced by individuals, The degree to which an individual believes in his abilities in a variety of situations to a series of tasks in a variety of situations, and (c) strength which relates to the extent of individual's conviction for his or her abilities; People who are confident in their ability to succeed will persist in their endeavors notwithstanding the challenges and impediments (Chung & Ackerman, 2015).

The processes that affect self-efficacy are: (1) cognitive processes (thinking processes), (2) motivational processes (individuals motivate/encourage themselves and direct action through the stages of previous thoughts), (3) affective processes (process of regulating emotional and emotional reactions), dan (4) selection process (individual's ability to choose certain activities and situations also affected the effect of an event) (Hess *et al.*, 2004). The indicators for measuring self-efficacy according to Bandura (Table 2).

Method

This experimental study employed a quantitative approach to ascertain whether the research subject experienced any effects from "something" applied to them. In terms of design, it employed a quasi-experimental group consisting of experimental and control groups (Table 3).

This study involved the social studies students at the Laboratory School of the University of Syiah Kuala as the subjects. It employed a probability sampling technique with a clustered sampling method to select certain population

Table 2: Students' self-efficacy

<i>Dimension</i>	<i>Indicator</i>
Magnitude	Having a positive and optimistic outlook, Having confidence in the level of difficulty, Having confident in the ability to take action
Strength	Using the experience of living as a step to achieve success Display an attitude that shows confidence in the whole process of learning Being able to address the diverse circumstances with a positive attitude
Generality	Has a strong self-belief on his or her potential in completing the task, Being committed to complete the task, Has a fighting spirit and do not easily give up

Table 3: Research design

<i>Variable</i>	<i>Learning approach</i>	
Child expression Language	Control Group	Experiment Group
	Conventional	Project-Based Learning with Local Wisdom
High Critical Thinking Skills	X1Y1	X2Y1
Low Critical Thinking Skills	X1Y2	X2Y2

groups. Thus, the sample consisted of class XI IPS 2 as the control group and XI IPS 3 as the experimental group.

A questionnaire with a Likert scale was administered to the participants after the post-test in both groups to determine if project-based learning with local wisdom, moderated by their self-efficacy, affected the development of learners' critical thinking skills. The research data were acquired through the pre-test, post-test, and questionnaire.

Result

Validity test

The instrument validity test resulted in an r-count value that was greater than the r-table for each item. Therefore, every instrument item is deemed valid and feasible (Table 4).

Reliability

A reliability test was carried out to evaluate the reliability of the questionnaire that was used as the measuring instrument. A reliable measurement tool will produce essentially the same results when used repeatedly. If the r (Cronbach's alpha) value is greater than 0.60, the instrument is deemed reliable according to the decision-making

Table 4: Validity test

<i>Dimension</i>	<i>r-count</i>	<i>r-table</i>	<i>Explanation</i>
Critical Thinking Skills			
Elementary Clarification	0.643-0.811	0.30	Valid
Based for Decisions	0.725-0.887	0.30	Valid
Inference	0.696-0.883	0.30	Valid
Advanced Clarification	0.678-0.853	0.30	Valid
Strategies and Tactics	0.644-0.713	0.30	Valid
Self Efficacy			
Magnitude	0.801-0.900	0.30	Valid
Strength	0.783-0.813	0.30	Valid
Generality	0.779-0.810	0.30	Valid

Table 5: Reliability

Variable	Alpha cronbach	Standard	Information
Critical thinking skills	0.853	0.600	Reliable
Student self efficacy	0.877	0.600	Reliable

criterion. Otherwise, the instrument is deemed unreliable (Table 5).

As determined through the instrument reliability test calculation, each variable had a Cronbach alpha value of > 0.6, leading to the conclusion that all instruments had an adequate level of reliability.

Normality Test

The normality and homogeneity of variance tests were also conducted as prerequisites for the ANOVA test. The Kolmogorov-Smirnov test was used in the former, while the Levene test was used for the latter (Table 6).

Homogeneity Test

The variation across groups was considered to be homogeneous as the test of assumption of homogeneity of variance on the pedagogic competence variable based on the instructional approach factor yielded a significance value greater than 0.05 ($p > 0.05$) (Table 7).

Hypothesis Test

Hypothesis test shown in Table 8.

Project-Based Learning with Local Wisdom Effect on Critical Thinking Ability

The test results indicated a substantial difference in the acquisition of critical thinking skills among the participants learning through conventional methods and those learning through a project-based approach with local wisdom. This was evident in the average value of the results of critical thinking skill, which showed that the participants exposed with project-based learning with local wisdom attained a higher average (75.78) than those who were exposed to conventional learning (55.80). The finding was also supported by the anova test results that showed a significance value of $0.000 < 0.05$. Therefore, it was evident that a considerable

Table 6: Normality test

Variable	Level	Kolmogorof Smirnov	
		Statistics	Sig.
Critical Thinking Skills	Conventional Control	0.531	0.343
	Project-Based Learning with Local Wisdom Experiment	0.415	0.401
Student Self Efficacy	High	0.228	0.237
	Low	0.292	0.333

As shown above, since the pedagogic competence variable based on the instructional approach factor received a significance value larger than 0.05 ($p > 0.05$) in the normality assumption test, it was assumed to be normally distributed.

Table 7: Homogeneity test

	F	df1	df2	Sig.
Critical thinking skills	2.419	2	81	0.269

Table 8: Hypothesis test

Factor		M	SD	F	Sig.	Note.
Learning Method	Project-based approach with local wisdom experiment	75.78	7.81	25,451	0.000	
	Conventional	55.80	7.70			
Student Self Efficacy	High	72.11	7.79	16,337	0.000	Significant
	Low	61.70	7.64			
Interaction	Experiment high critical thinking skills	88.15	9.27	16,332	0.000	Significant
	Experiment low critical thinking skills	72.30	8.18			
	Conventional high critical thinking skills	67.00	10.13			
	Conventional low critical thinking skills	35.60	6.36			

difference in critical thinking skills existed between the participants learning through a project-based approach with local wisdom and those who did not. This result is in accordance with research by Hamid, Setyosari, Kuswandi, & Ulfa, (2019) where it was found that mobile seamless is able to help students grasp concepts more easily.

The PjBL-KA model has characteristics that require students to be able to observe, investigate, and make decisions in every project implementation process. Thus, each student has a sense of responsibility both independently and in groups to carry out the right learning tasks in accordance with their creative abilities. As Gharti (2019) argues, students who have the initiative from within themselves will be independently responsible for learning to achieve goals. Through the process of completing the project, students will find facts that make it easier for students to find what is wrong with their way of thinking or previous facts. This is when students' critical thinking processes develop significantly

Effect of Project-Based Learning with Local Wisdom Moderated by Student Self Efficacy on Critical Thinking Ability

The results of hypothesis test indicated a considerable difference in critical thinking abilities between the participants participating in project-based learning moderated by low and high self-efficacies. Learners with high self-efficacy in project-based learning obtained an average score of 72.11 while those with low self-efficacy obtained

10.41 points lower (61.70). This finding was supported by the ANOVA test results which showed a significance value of $0.000 < 0.05$. Therefore, it was evident that a significant difference in students' critical thinking skills existed between the project-based learning with local wisdom moderated by high self-efficacy and that moderated by low self-efficacy. This result is in accordance with the research by Nurhikmayati & Aep Sunendar (2020) dan Fatkhiyani & Suhada (2018) the PjBL-KA model has characteristics that require students to be able to observe, investigate, and make decisions in every project implementation process. Thus, each student has a sense of responsibility both independently and in groups to carry out the right learning tasks in accordance with their creative abilities.

Local wisdom is a crucial component of instructional units to ensure that students retain their fundamental cultural values, ancestral connections and develop an understanding of the attitude of customarily societal as well as ecological facts. Local wisdom refers to social norms that are accepted as true and used as a guide for everyday conduct. It describes how to conduct oneself and act in response to usual changes in the physical and cultural surroundings (Sumardjoko *et al.*, 2018). The form of local wisdom can be tradition, which is represented in the ideals that some community groups hold dear. It is applied to students through project-based learning by making temple miniature projects, or developing wall magazines that describe community activities (Retnowati *et al.*, 2019).

Through the active involvement of students in completing projects, they are able to improve their critical thinking ability. Project-based learning with local wisdom can directly preserve local Indonesian cultures so they don't become extinct. Students' critical thinking ability will rise when learners possess high levels of self-efficacy (Nurdiansah *et al.*, 2021). Self-efficacy is closely related to trust and belief someone. Learners with high self-efficacy will possess high self-confidence as well. Students will feel capable and confident about the project they are working on. This efficiency shows that students have increased critical thinking skills. Santrock (2007) argues that learners rated high in self-efficacy tend to persevere in mastering learning tasks than those rated low in self-efficacy. This is in line with Zahroh, Suwarsi, & Ridlo, (2022) who states that when individuals have the same ability, someone who believe they can perform a task are more likely to achieve success than individuals who are not sure of success in the task.

Interaction Between Project-Based Learning with Local Wisdom and Self-Efficacy on Critical Thinking

The anova test results indicated an interaction between project-based learning with local wisdom and self-efficacy in critical thinking ability. This was evident in the significance value of $p < 0.05$ and the average value of 88.15 in critical

thinking ability among the participants in project-based learning with local wisdom with high self-efficacy, as compared to the average value of 72.30 among those with low self-efficacy. The results of the anova test showed that there was an interaction between conventional learning and self-efficacy toward increasing critical thinking ability. This can be seen from the significance value of $p < 0.05$ and the high average self-efficacy is 67.00 compared to students who receive low conventional learning of 35.60. research result by Ahmad & Safaria, (2013) dan Nurhikmayati & Aep Sunendar, (2020) found that self-efficacy was able to strengthen critical thinking ability. Self-efficacy is one of the things that students need to have with regard to its function as an encouragement to student learning. As reiterated by Bandura, self-efficacy refers to individual's perceptions of his capacity to make an accomplishment and handle impactful circumstances. It affects people's thoughts, feeling, motivation, and behavior. Of course, this ability must be well stimulated, as is the case with providing project-based learning.

Through project-based learning with local wisdom students are involved in problem solving activities and provide opportunities for students to work autonomously and ultimately produce valuable work products and can teach them local wisdom. According to Johnson, Ulseth, Smith & Fox, (2015) learning using the project based learning model directs students to create a project. As a result of project work, students will independently build their knowledge, improve problem solving skills, develop thinking and communication skills. The research results by Kizkapan & Bektas, (2017) show that project based learning is effective in improving student academic achievement. Furthermore, Wijayati, Sumarni, & Supanti, (2019) stated that the use of PBL learning tools can increase students' motivation, activity and problem solving abilities.

The process to produce prospective skilled and cultured educators requires project-based learning activities that are integrated with local wisdom. Zidny *et al.*, (2021) studies on the potential of local wisdom, both in terms of the diversity of cultural products, as well as in terms of the diversity of substances, it is agreed that local wisdom is a potential that must be maintained and developed in the present context. Through project-based learning or PBL students are involved in problem solving activities and provide opportunities for students to work autonomously and ultimately produce valuable and realistic work products.

Conclusion

The research results show that project-based learning with local wisdom moderated with good self-efficacy can improve critical thinking ability. Project-based learning with local wisdom needs to be integrated into learning so that the methods applied by teachers do not only focus on academic results but also inculcate the values of local

wisdom. Therefore, it would be better for teachers at every level to apply project-based learning with local wisdom.

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