Indonesian Journal of Educational Review
p-ISSN 2338-2019 | e-ISSN 2335-8407
Vol. 8, No. 2 December 2021, p 72-79.

Available online at
http://pps.unj.ac.id/journal/ijer

TEACHER PROBLEMS ANALYSIS OF CRITICAL THINKING SKILLS, LEARNING MOTIVATION AND STUDENT LEARNING OUTCOMES

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ABSTRACT

The low critical thinking skills, learning motivation and student learning outcomes are the background in this observation. Observations were made on biology teachers and class XI students at SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda and SMA Negeri 1 Long Ikis. Based on the results of the teacher and student response questionnaires, several problems were obtained in classroom learning, including the lack of student motivation, due to conventional learning (lecture methods and less variety), the lack of opportunities for students to express ideas and the lack of learning resources. The purpose of this study was to examine problems related to the level of critical thinking skills, learning motivation and student learning outcomes. The research subjects were biology teachers and class XI students at SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda and SMA Negeri 1 Long Ikis. The results showed that the critical thinking skills of SMA Negeri 17 Samarinda students were 70.68% (medium predicate), SMA Negeri 5 Samarinda was 71.49% (medium predicate) and SMA Negeri 1 Long Ikis was 71.09% (medium predicate). Furthermore, the data analysis of students' learning motivation of SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda and SMA Negeri 1 Long Ikis respectively were as follows 78.64%, 79.92% and 78.05% with the same predicate, namely good. Then the student learning outcomes showed SMA Negeri 17 Samarinda was 77.73% (enough predicate), SMA Negeri 5 Samarinda was 78.27% (enough predicate) and SMA Negeri 1 Long Ikis was 78.35% (enough predicate). students at SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda and SMA Negeri 1 Long Ikis it can be concluded that the results of critical thinking skills, learning motivation and student learning outcomes without using learning media have a major influence in the learning process.

Keywords: Observation, Critical, Result, Motivation

The existence of the 21st century is marked by the era of the industrial revolution 4.0, where the 21st century is the century of openness or the century of globalization. At this time, Indonesia is entering and even running in the era of the industrial revolution 4.0, which can be seen from the very rapid changes in the field of information technology and in the field of digital technology, especially with the existence of social networks, which are often referred to as social media. It is no longer used in all circles regardless of caste and degree. This very significant change takes place in everyday life by following the existing flow. The most important changes affect the field of education. Indonesia is a country whose educational value is still relatively low compared to other countries. Various kinds of technological advances have begun to be applied in the world of education, such as to support more efficient learning, such as the use of technology for distance learning, and so on (Mardhiyah et al., 2021).

One of the main problems in learning lies in formal education (schools), where student learning outcomes are not maximized. These achievements are the result of conventional learning conditions which do not touch the realm of the student's own dimensions, such as how to actually learn (study). for learning) is a learning process until adulthood still gives dominance to the teacher and does not provide access for students to develop independence through discovery and thought processes.

In addition, there are problems in education, namely the main priority that must be solved, one of which concerns the quality of education. The quality of education is very influential on the development of students in obtaining knowledge in the form of learning outcomes. This situation also has an impact on the quality of learning. Students and teachers who previously interacted directly in the classroom now only interact in a limited virtual space as a result of online learning. Teachers are required to provide good teaching and create a conducive atmosphere for creative and innovative learning using interesting learning media so that students can understand the learning material so that learning objectives can be achieved.

Critical thinking skills are rational thinking in judging something. Before making a decision or taking action, it is necessary to collect as much information as possible about something. The formation of optimal student critical thinking skills requires an interactive class. Students are seen as thinkers rather than being taught, while teachers act as mediators, facilitators, and motivators who help students in learning instead of teaching. One of the factors that determine the success of the formation of students' critical thinking skills is the expertise in choosing and using the right learning model. The right learning model is a problem-solving learning model.

Learning motivation is a variable consisting of two words, namely "motivation and learning," both of which have their own meaning. When discussing motivation, it is often juxtaposed with the word motive. Motive is defined as motion or something that encourages individuals to move. Thus, what is meant by learning motivation is the overall driving force that lies within the learner, which raises the intention to carry out learning activities, so that the goals desired by the learning subject can be achieved. According to Cahyani (2020), student learning motivation also has a big influence on learning success. The learning process will achieve success if students have good learning motivation. Therefore, learning motivation is very important for every student to have both intrinsic and extrinsic motivation.

Initial observations were made at three different schools, namely SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda, and SMA Negeri 1 Long Ikis. Based on the results of the questionnaire that has been obtained from the student's questionnaire response and the teacher's response to the biology subject, it describes several problems, namely in the student questionnaire stating that in the process of learning activities in the classroom, there is a lack of motivation to learn because learning is still conventional (lecture method, so it is less varied). In addition, it does not provide opportunities for students to express their ideas and ideas, limited learning resources or learning references, difficulty in dealing with online learning, and a lack of teacher guidance during the learning process.

Meanwhile, the teacher's questionnaire explained several problems in teaching and learning activities in the classroom, namely where the current learning stage is still at a moderate level because teachers still use the lecture method, which is monotonous and uses learning resources such as books, worksheets, and videos so that some students find it difficult to improve critical thinking skills and learning outcomes during the learning process.

The problems faced by the school have now reached a fairly large and sustainable scale (especially in class XI). This can happen because currently, technological developments are increasingly rapid, and students need to adjust and adapt to the era of digital development. However, in reality, schools currently still apply conventional learning methods so that students become bored, not interested in the learning provided, especially if the material being taught is abstract.

Using materials in the form of wooden or plastic blocks arranged like towers, the uno stacko is a learning medium that can stimulate strategic thinking, sharpen memory and increase concentration. Games using stacking blocks will have a good effect because these games make students more interested and enthusiastic (Hendaryati, 2019). There are several studies that have used uno stacko media in other subjects such as crafts, mathematics, and physics, but in biology subjects, they have never been used in schools that will be carried out by researchers.

The game design used is to modify the blocks on uno stacko by adding questions and discussions on the edge of the beam (horizontal part) and providing pictures related to the material in each block. The advantages of learning media using the Uno Stacko game are that it can stimulate thinking skills, sharpen memory and concentration, and train students in the decision-making process. Among the many selected uno blocks, players must first analyze which blocks should be chosen which has the smallest risk of not damaging the uno stacko tower arrangement so that it does not collapse. This can teach students that every mistake in making decisions and rushing will have a negative impact, namely by the collapse of the tower in the game uno stacko. The weakness of the uno stacko learning media is that it takes longer to play because games and practice questions must be left to group members.

Maximum results will be achieved if there is a good reciprocal relationship between teachers and students during the learning process. Media use and learning models are the main factors to support the achievement of learning objectives. However, not all teachers are able to use the media and provide good methods and models in the learning process. Based on the problems described above, researchers are interested in researching PBL Model Development Using Uno

Stacko Media in Improving Critical Thinking Skills, Learning Outcomes, and Student Motivation in Biology Learning in Class XI SMA.

This research is an initial study (observation) to determine the effect of using game-based learning media in the learning process of biology subjects in high school.

METHOD

This research is a quasi-research with the subjects being teachers and students of class XI in three different schools, namely SMA Negeri 17 Samarinda (a total of 2 biology teachers and 11 students), SMA Negeri 5 Samarinda (a total of 2 biology teachers and 62 students) and SMA Negeri 1 Long Ikis (2 teachers and 68 students). In comparison, the object of this research is critical thinking skills, learning motivation, and teachers' response to students' level of understanding of the material. The material used as the object of research is the material of the circulatory system. Observations were made from 18 August to 09 September 2020 at the three schools after obtaining approval from the school. The questionnaire results are obtained at the time of observation by answering several questions on an online questionnaire (from the website). Then the data that the teacher and have filled in

Data on critical thinking skills, learning motivation, and teacher responses to students' understanding of the material were processed using the criteria in Tables 1 (Karim, 2015), 2 (Sahara & Kristiana, 2014), and 3 (Depdikbud, 2017). The results were then analyzed descriptively and qualitatively (Fadli, 2021).

Table 1. Categories of Students' Critical Thinking Skills (X) (Karim, 2015)

Critical Thinking Skills (%)	Critical Thinking Skill Level
$81{,}25 < \bar{X} \leq 100$	Very high
$71{,}5 < \bar{X} \leq 81{,}25$	High
$62{,}5 < \bar{X} \leq 71{,}5$	Medium
$43{,}75 < \bar{X} \leq 62{,}5$	Low
$0 < \bar{X} \leq 43{,}75$	Very Low

Note: X = (maximum score/score) x100%, obtained from questionnaire data.

Data on student learning motivation are obtained for each question and then based on indicators. After the indicators data has been obtained, the student's learning motivation can be known. The following equation calculates the level of student motivation.

Tabel 2. Data Interval and Student Motivation Level **(X)(Sahara & Kristiana, 2014)**

Student motivation (%)	Level of student learning motivation
$85 \leq \bar{\mathbf{X}} < 100$	Very Good
$70 \leq \bar{\mathbf{X}} < 84$	Good
$55 \leq \bar{\mathbf{X}} < 69$	Pretty Good
$40 \leq \bar{\mathbf{X}} < 54$	Not good
$25 \leq \bar{\mathbf{X}} < 39$	Not good

Description: X =((Σ **M)**/m)x100%. M=score obtained, m=maximum score.From the assessment guide by education and education units for SMA (2017), the criteria for student learning outcomes can be seen in Table 3.

Tabel 3. Rules for Weighting Assessment Items Teacher's response to the level of understanding of the material by students (Depdikbud, 2017)

Skor	Kriteria	Keterangan
4	Sangat Baik	Mudah dipahami, sesuai dengan konteks pemahamannya.
3	Baik	Mudah dipahami, perlu disempurnakan konteks pemahamannya.
2	Cukup	Cukup dipahami, perlu di sempurnakan konteks pemahamannya.
1	Tidak Baik	Sulit dipahami, perlu disempurnakan konteks pemahaman.

Tabel 4. Teacher's Response to the Level of Understanding of the Material by Students (Depdikbud,2017)

Nilai	Deskripsi Kemampuan
93 – 100	Sangat Baik
84 – 92	Baik
75 – 83	Cukup
< 75	Kurang

Note: **X** = (score of gain/maximum score)x100%. The score is obtained from the processed results of the online questionnaire that is given to the teacher.

RESULTS AND DISCUSSION

The results showed that the Uno Stacko game-based learning media had good potential to be used in the learning process of the circulatory system material (Table 4). The Uno Stacko game-based learning media received responses from students and teachers regarding students' average critical thinking skills. From three different schools of 71.09 with a moderate level, the average student motivation of 78.87 with a good level, and the average teacher response to the level of understanding of the material by students is 78.12 with a sufficient level.

Tabel 4. Student Responses to the Use of Learning Instruments for Critical Thinking Skills Parameters, Learning Outcomes and Learning Motivation

Respon siswa/guru	Score			Averange	Level
	SMAN 17 Samarinda (n=11)	SMAN 5 Samarinda (n=62)	SMAN 1 Long Ikis (n=68)		
Students' critical thinking skills	70,68	71,49	71,09	71,09	Medium
Student's motivation to study	78,64	79,92	78,05	78,87	Good
Teacher's response to the level of understanding of the material by students	77,73	78,27	78,35	78,12	Good Enough

Description: Assessment of students' critical thinking level, learning motivation and student learning outcomes respectively based on the criteria in Tables 1, 2, 3 and 4.

While the initial observation questionnaire on teachers from three different schools showed varying student learning outcomes, the questionnaire explained that the current learning stage was still moderate. Because teachers still taught the lecture method or were monotonous, using minimal learning resources such as books. , student worksheets and learning videos only. So that students have difficulty understanding the subject matter.

Based on the results of student responses to the use of learning instruments for the parameters of critical thinking skills, learning outcomes, and learning motivation, namely at SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda, and SMA Negeri 1 Long Ikis with the results obtained on critical thinking skills respectively as follows 70.68%, 71.49% and 71.09% with the same moderate level. The results of learning motivation are 78.64%, 79.92%, and 78.05%, respectively, with a reasonable level. The value of the teacher's response to the level of understanding of the material

The results of three school teachers' interviews and questionnaires (SMA Negeri 17 Samarinda, SMA Negeri 5 Samarinda, and SMA Negeri 1 Long Ikis) explained that teaching and learning activities (KBM) in schools during the pandemic period were minimal. Students had forced to understand biology material. (circulatory system) without being accompanied by a teacher. Most of the students only summarized from the video the teacher had previously given as a material assignment, so students could not understand the material that affected student learning outcomes. In addition, students lose motivation to learn during the pandemic (online).

The results of small class trials with slight revisions according to suggestions from expert lecturers and biology teachers and students improved the media according to the suggestions. Then from December 13 to 15, 2021, a large class trial using two different classes was carried out and selected with the reasons and considerations. At the time, the research was taking place. It was still a pandemic period in which the school where the researcher carried out. The research was only part on the students who were allowed to go down to school on the condition that they comply with strict health protocols in the learning process.

Based on the results of media validity, it had obtained that the Uno Stacko learning media by adding question cards got a correct category with a percentage of 85.42%. In comparison, the Larasati & Prihatnani research (2018) obtained media validity results with a percentage of 81.00% with a good category. Based on the results of the validity of the material obtained in Table 4.1.b, it can be seen that the Uno Stacko learning media by adding question cards got an excellent category with a percentage of 84.69%, while in Larasati & Prihatnani's research (2018) obtained material validity results with a percentage of 80.00 % with the correct category. Based on the results of student responses and understanding of the material (media practicality) obtained in Table 4.1.c, it can be seen that Uno Stacko's learning media got an excellent category with a percentage of 92.19%. In comparison, Larasati & Prihatnani's research (2018) obtained the results of media practicality with a percentage 91.70% with perfect category. So it can be concluded that the Uno Stacko learning media by adding question cards can be said to be valid regarding media, material, and practicality. Student responses to the use of learning instruments using Uno Stacko media for the parameters of students' critical thinking skills at SMA Negeri 17 Samarinda are 72, 14% with a high rate.

This is in line with Lestari & Purwandari's (2018) research, where critical thinking skills only show 43.30%. In addition, the percentage value of student learning motivation is 82, 77%, a reasonable level. This is better than Setyono's (2013) research, which only obtained a percentage value of 68.75% on student learning motivation. While student learning outcomes were obtained before the learning took place (pretest) with a score of 63.85 with a low level, then after carrying out the learning process, students were given the same questions as before (posttest) with a score of 83.07 with a reasonable level. Then obtained an increase in student learning outcomes of 19.22%. The results of student responses (n=25) to the use of learning instruments using the Uno Stacko media that have been obtained on students' critical thinking skills with paired t-tests obtained a percentage value score of 0, 100. They obtained the Wilcoxon-test level value of 0.216 from the control class score of 82 .00 and the experimental class 86.00 with a very high level. The effectiveness of learning outcomes (posttest - pretest) in the control class is the average percentage reaching 80.40%, with a difference of 10.76.

From the results obtained in the experimental class, it is known that the average percentage reaches 87.12%, with a difference of 17.44. So that the average learning outcomes of the control class are stated to be lower than the experimental class. The paired t-test performed showed a high level of significance, namely 0.00325, as well as the Wilcoxon• test, which showed 0.0000129, meaning that the problem-based learning model with the Uno Stacko media was effectively applied. These results are strengthened by research.

Hendaryati (2019) tested the feasibility of uno stacko for use in learning with an average score of 65.5% in the control class and 68.9% in the experimental class, with a 3.4% difference. Learning motivation with paired t-tests obtained a percentage score of 0.00154 and the Wilcoxon-test level of 0.004 from the control class score of 86.02 and the experimental class 90.12 with an outstanding level. The same study presented by Estiani (2015) stated that games considerably influenced the development of students' curiosity.

CONCLUSION

Uno Stacko game-based learning media has good potential to be used as a supporting tool in learning biology subjects for circulatory system material. The Uno Stacko media received 71.09, 78.87, and 78.12 responses for critical thinking skills, learning motivation, and teacher responses to students' understanding of the material. So this research requires further research with the PBL model using the Uno Stacko media to improve critical thinking skills, learning outcomes, and student motivation.

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