

The Analysis of Relationship Between Student Learning Motivation And Student Higher Order Thinking Skill (HOTS)

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Abstrak

Indonesia terus mendapat peringkat buruk dalam peringkat PISA untuk negara-negara dengan hasil belajar yang buruk karena kurangnya keterampilan berpikir tingkat tinggi (HOTS) dan motivasi belajar. Tujuan dari penelitian ini adalah untuk mengetahui apakah kemampuan berpikir tingkat tinggi berhubungan dengan keinginan belajar untuk hasil belajar Kimia Kesetimbangan. Metodologi kuantitatif dan survei digunakan dalam studi korelasional ini. Pengambilan sampel dilakukan dengan purposive sampling yang melibatkan 191 orang. Kuesioner berisi 47 pernyataan dan esai berisi 16 pertanyaan digunakan sebagai instrumen tes untuk mengevaluasi kemampuan berpikir tingkat tinggi. Analisis data dilakukan dengan menggunakan SPSS versi 22 dan analisis regresi berganda. Hasil pengujian hipotesis menunjukkan adanya hubungan antara kemampuan berpikir tingkat tinggi dengan motivasi belajar kimia, serta hubungan antara kemampuan berpikir tingkat tinggi (HOTS) dan motivasi belajar kimia dengan nilai sig. < 0,05. Inovasi merupakan prediktor terbaik dari kemampuan berpikir tingkat tinggi dan memiliki tujuan dan sasaran untuk masa depan, merupakan indikator motivasi belajar yang terbaik. Jadi, ada hubungan antara kemampuan berpikir tingkat tinggi (HOTS) dengan motivasi belajar siswa.

Kata kunci: Kemampuan Belajar Tingkat Tinggi, Motivasi Belajar, Hasil Belajar

Abstract

Indonesia continues to be ranked poorly in the PISA rankings for nations with poor study results because of a deficiency in higher order thinking skills (HOTS) and study motivation. The aim of this study is to determine whether higher order thinking abilities are associated with a desire to study for the Equilibrium of Chemistry lesson's outcomes. Both quantitative and survey methodologies were used in this correlational study. Purposive sampling was used to conduct the sampling, which involved 191 people. A 47-statement questionnaire and a 16-question essay used as the test's instrument to evaluate higher order thinking abilities. Data analysis was performed using SPSS version 22 and a double regression analysis. The results of the hypothesis testing demonstrate a relationship between higher order thinking abilities and motivation for learning chemistry, as well as a relationship between higher order thinking abilities (HOTS) and motivation in learning chemistry with a sig. < 0,05. Innovation, which is the best predictor of higher order thinking abilities and having goals and objectives for the future, is the best indicator of study motivation. So, there is a connection between higher order thinking skills (HOTS) and student learning motivation.

Keywords: Higher Order Thinking Skills, Motivation To Study, Student Learning.

INTRODUCTION

Periodically, age continues to increase. Science and technological advancements, which will only allow the generation with the greatest skills and accomplishments to succeed, have an impact on this development. The younger generation does not just naturally possess these skills and accomplishments; rather, they are taught through the educational process (Abidin et al., 2011).

According to the SMA/MA education unit level's regulation under Minister of Education and Culture Regulation Number 21 of 2016, there is a major program consisting of five programs, namely the natural sciences program, the technology program, the arts program, the culture program, and the humanities program. In each of these major programs, there are various kinds of subjects that will be studied by students during their schooling that are related to their major program (Agustina, 2015).

The most highlighted aspect of learning is student learning outcomes. Student learning outcomes are measurements and assessments of student learning efforts expressed in symbols, numbers, letters, and sentences that reflect the results achieved. However, the learning outcomes obtained by students are still far from satisfactory (Astuti et al., 2023). In these circumstances, it is essential to make an effort to raise and improve student learning outcomes. Poor student learning outcomes are generally attributed to a variety of variables. One of these is the deficiency in higher-order thinking abilities. The level of science literacy measured by PISA in Indonesian students is generally considered to be limited to being able to remember facts, terms, and scientific laws and draw simple scientific conclusions in everyday life. This shows that Indonesian children have difficulty answering questions in the form of descriptions that require reasoning (Gunawan et al., 2014). This is expected because they are accustomed to memorizing and working on multiple-choice questions. The National Examination is one type of multiple-choice question that Indonesian students commonly take. Implementation of the National Examination as a benchmark for national standards in achieving student quality should have been a component of questions with high-level thinking skills.

The government then implemented the 2013 curriculum in order to meet the educational demands of the globalization era. The theme of curriculum development is said to be a curriculum capable of producing Indonesian people who are productive, creative, innovative, and affective through strengthening positive values, skills, and integrated knowledge. The learning system contained in the 2013 curriculum emphasizes higher-order thinking skills. Using the intellect more broadly to identify new problems is what is meant by higher-order cognitive abilities. This higher-order thinking skill necessitates the application of fresh information or prior knowledge, as well as the manipulation of information, to arrive at potential solutions in novel situations (Hamalik, 2010).

All pupils are capable of thinking, but the majority require support and direction to engage in higher-order thought processes. These higher-order thinking abilities are learnable and teachable. Like any other knowledge, thinking skills may be learned and used by all students. This is consistent with studies that shows that using HOTS-oriented problem solving improves learning outcomes in chemistry, particularly in the areas of electrolyte solutions and redox principles. Students also require higher-order thinking abilities to enhance learning results. Each student has internal conditions in his activities, and one of the internal conditions is motivation (Kamaruddin et al., 2023). Student motivation for learning needs to be increased in order for students to accomplish the desired outcomes of the teaching and learning process (Parinussa et al., 2023). Good motivation in learning will show good results; in other words, motivation can give birth to good achievements. This is consistent with the findings of previous research, who discovered that the higher the value of achievement motivation in students, the better their mathematical problem-solving abilities. Likewise, the lower the value of student achievement motivation, the less ability there is to solve the problem (Nugroho et al., 2023).

Based on the background above, the writer wants to know how higher-order thinking skills are related to learning motivation and their relationship to learning outcomes. The relationship between critical and creative thinking, which are indicators of higher order thinking

skills on learning outcomes, and motivation is based on prior research that revealed a favorable relationship between these two types of thinking.

METHOD

This study combines a quantitative research strategy with a correlational research methodology. A survey method is the quantitative approach that was applied. Purposive sampling is the method of sampling that was utilized in this study. Researchers employed a variety of tools, including exams, questionnaires, and documentation, to collect the data for this study. Following validity and reliability checks on the higher-order thinking skills test and the learning motivation questionnaire. So then data collection is carried out using prerequisite tests and hypothesis testing.

RESULTS AND DISCUSSION

According to the research results, it is known that there is a relationship between higher-order thinking skills and chemistry learning outcomes. There is little relationship between higher-order thinking skills and student learning outcomes. According to earlier studies, there is relatively little correlation between higher-order thinking abilities and factors like gender, academic success, and socioeconomic background. It can be said that students who have high-level thinking skills will obtain high learning outcomes. This means that students are able to analyze, evaluate, and create to assist themselves in the learning process. Previous studies have shown that the use of HOT-PBI (Higher Order Thinking and Problem-Based Instruction) can enhance student learning outcomes in terms of cognitive, psychomotor, and emotional components. According to the study's findings, using the PBL learning paradigm and asking questions that call for higher-order thinking abilities can enhance learning outcomes (Petrucci et al., 2011). This is demonstrated by the fact that students who use HOTS questions in the PBL (problem-based learning) learning model get higher average learning outcomes than students who use the PBL learning model, on average. Research demonstrates that increased student learning results follow frequent training of pupils to enhance higher-order thinking abilities. The studies mentioned above show that developing and strengthening higher-order thinking abilities is necessary to improve learning outcomes. This is the main goal in the 21st century: to become quality human resources.

The findings of the study demonstrate a connection between learning motivation and chemical learning outcomes. Learning outcomes for students and learning motivation are related. This suggests that, despite its modest impact, motivation has an impact on students' learning outcomes. This is consistent with earlier studies that discovered a connection between motivation and learning results. One key element in enhancing learning results is motivation. The findings of the research, students who are motivated to learn chemistry tend to have good chemistry learning outcomes as well. Because motivated pupils are more likely to feel compelled to learn chemistry. Thus, the greater the student's motivation to learn, the better the learning outcomes will be. In the previous research, it was found that student motivation has a significant and positive relationship with student achievement in natural sciences lessons. Motivation in learning is proven to have a strong role in achieving success. Motivation gives a strong impetus to achieve success. Students who have high motivation show high learning outcomes. Learning outcomes are obtained in stages: when students take part in learning, when they are working on assignments in class, when they follow the learning process in class, and when they work on assignments after learning in class is over (Prasetyani et al., 2016).

According to the research, students' motivation for learning must be developed because it is essential to obtaining the desired outcomes of the teaching and learning process. Someone acts in response to incentive. Better motivation in learning will show good results; in other words, diligent effort based on motivation will be able to give birth to good achievements.

The findings of the study demonstrate a connection between learning motivation and higher-order thinking abilities. Higher-order thinking abilities and learning desire have a tenuous connection. This is consistent with earlier studies that found a connection between learning motivation and the capacity for critical and creative thought both of which are signs of higher-order thinking skills. If kids are motivated to learn, their higher-order thinking abilities can be strengthened. Higher-order thinking abilities in chemistry disciplines can only be

developed once students are motivated to study the subject. A person's success in learning is strongly influenced by belief and belief in himself. Learning can be successful due to both internal and external factors. Motivation is one of the internal variables.

The study's findings revealed a connection between higher-order thinking abilities and learning motivation in chemistry learning outcomes. Learning outcomes for students and learning motivation are tangentially related. This is in line with earlier studies that found a connection between learning outcomes and higher-order thinking abilities like motivation, critical and creative thinking. According to the study's findings, pupils who possess strong critical thinking abilities and a strong desire to learn will do well in school. According to the findings of tests of higher-order thinking abilities and the results of motivational surveys, students who can answer the questions and get the answers of the surveys with a high level of motivation also tend to have strong learning outcomes. According to previous research, improving metacognitive abilities leads to improved higher-order thinking skills, and his research found an association between learning motivation in biology and metacognitive skills.

According to the aforementioned research, learning outcomes in chemistry subjects will likewise be high or considered to be good since students exhibit high-level thinking abilities and good motivation throughout chemistry sessions. Therefore, students, parents, teachers, schools, and other education staff need to improve and develop high-level thinking skills and good motivation before even receiving this chemistry lesson. It is possible that this research is not only on chemistry lessons but on other subjects that have high-level thinking skills but low motivation. Because the anticipated learning outcomes that serve as a measure of an education's success cannot be accomplished if high-level thinking capacity and student motivation continue to be rated as low or even negative.

The student's coefficient of determination is 0.006, which can be used to investigate the effects of high-level thinking abilities and learning motivation on students' learning outcomes in chemistry. This demonstrates that whereas 94% of the learning outcomes for chemistry are driven by other factors, higher-order thinking abilities and learning motivation have a relationship with 6% of those outcomes.

CONCLUSION

It is clear from the analysis of the data and the discussion that higher-order thinking abilities significantly influence student learning outcomes in chemistry. Learning outcomes in chemistry have a considerable association with motivation. Learning motivation significantly correlates with higher-order cognitive abilities. Chemistry learning outcomes are significantly correlated with higher-order cognitive abilities and learning motivation.

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