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ANALYSIS OF STUDENTS' INTEREST IN LEARNING AND MOTIVATION LEARNING PHYSICS: A CASE STUDY AT SMAN 9 BANDA ACEH YEAR 2023/2024

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ABSTRACT

The case study aims to determine students' interest and motivation during the learning process in physics subjects with material on rectilinear motion and static fluids. The population of this study were students in classes X and XI at SMAN 9 Banda Aceh for the 2023/2024 academic year. The selected research samples were students in classes X MIPA 2 and XI MIPA 4, totaling 20 and 29 students respectively. This research uses descriptive research with a qualitative approach. Data collection was carried out through observing student activities, observing student responses, interviews, and documentation. Based on the results of the case study that has been carried out, it is concluded that student activity in learning physics can be categorized as low with the percentage data obtained for class X MIPA 2 being 42.78% and the percentage for class XI MIPA 4 being 50.56%. The physics learning process still uses conventional methods and the media used in the learning process is a whiteboard. The results of interviews with teachers stated that students were not enthusiastic and lazy in learning physics. This indicates that students have low interest and motivation towards learning.

Keywords: *case studies, interests in learning, motivation, rectilinear motion, static fluids*

INTRODUCTION

Physics is a natural science that studies all phenomena and symptoms that occur in nature. Physics is empirical, meaning that everything studied in physics is based on observations of nature and its phenomena (Sears and Zemansky, 1993:1). In physics, we study the phenomena of natural objects, both those that occur in objects (material) that can be observed and objects that cannot be observed (micro) (Kanginan, 2004: 1). According to Supiyanto (2007: 1) physics is a fundamental science which is the backbone for the development of science and technology. Physics is a field of study given in Senior High Schools (SMA) to provide a set of knowledge, and forms of skills and instilling attitudes and values in the context of the physics discipline (Depdiknas, 2007).

The problem that often occurs in physics learning in general is students' lack of interest in learning physics. Apart from parents, teachers and teaching styles also influence students' motivation to learn (Rebecca et al., 2017). According to Nurmaliati (2017), in the learning process teachers cannot motivate students to learn, the learning process tends to be monotonous, where the teacher only explains the material, provides opportunities to ask questions and solve problems. Another cause of students' reduced interest in studying physics is that physics learning still predominantly uses learning teacher-centered. Neizhela and Mosik (2015) in their research stated that the implementation of physics learning still tends to be carried out using conventional methods (lectures) so it does not activate students in the learning process.

The school chosen in this case study is SMAN 9 Banda Aceh which is located at Jl. Sultan Malikul Saleh Harapan Bangsa Stadium Complex, Lhong Raya Village, District. Banda Raya, Banda Aceh City, Aceh Province Based on the results of the author's observations in the field from October, 16 2023 to October, 24 2023, the author can conclude that the physics learning process shows several obstacles, including the lack of teacher participation in designing and implementing various methods that are relevant to the situation or material, not looking for the reasons why students difficulty understanding physics lessons, lack of interest in learning from within students themselves as seen from students not paying attention to the lesson, students being lazy in expressing opinions, not being active in class, and the learning process looking monotonous. Active students are a form of their interest and motivation towards learning. Learning is carried out using a passive learning method, namely more

of what the teacher conveys so that their understanding of physics is far from what is expected.

Similar research was conducted by Laili et al. (2015) where low student learning outcomes in physics subjects are influenced by several factors, including 1) physics is still considered a difficult and boring subject, 2) learning media is less varied so it seems monotonous, 3) the use of outdated learning methods and models (lecture), 4) minimal interaction between teacher and teacher and student and student, making students passive in receiving learning. Therefore, in studying physics, it is hoped that teachers and students and students can build a pleasant classroom atmosphere so that the lesson will be enjoyable and not monotonous. Next research, Setiawan, et al. (2016) If a student does not have high learning motivation, it is unlikely that the student will be enthusiastic about learning again, which will affect student learning outcomes. This means that students' learning motivation plays an important role in determining students' success in learning.

METHODS

This research uses the case study method, namely research conducted intensively, in detail and in-depth on an organization, intuition or certain symptoms (Arikunto, 2006: 12). This case study research uses a qualitative approach. Qualitative research is a research procedure that uses descriptive data in the form of written or spoken words from people and observable behavior. Sukmada (Fitrah and Luthfiyah. 2017: 44) explains qualitative research, namely research aimed at describing and analyzing phenomena, events, social activities, attitudes, beliefs, perceptions, and thoughts of people individually and in research groups. Research data was collected through observation sheets consisting of response sheets, student activity sheets, interviews and documentation.

This case study research was carried out at SMAN 9 Banda Aceh which is located at Jl. Sultan Malikul Saleh Harapan Bangsa Stadium Complex, Lhong Raya Village, District. Banda Raya, Banda Aceh City, Aceh Province, the learning process in this case study research was carried out from October 16 to 24 2023.

The subjects in this research were students of class X MIPA 2 and XI MIPA 4 class. Data collection for this case study research was carried out using several instruments. A research instrument is a tool used to measure observed natural and social phenomena (Sugiyono, 2013: 102). The instrument used for

this case study research was an observation sheet consisting of student activity sheets, response sheets, interviews and documentation. The materials observed are rectilinear motion materials and static fluids.

According to Titin (2017), indicators of learning interest include students' desire to learn, students' interest in learning, students' attention in the learning process, students' activeness in the learning process and the ultimate goal of understanding the material presented. Meanwhile, motivation indicators: awareness of learning, creativity, desire to have good grades (achievement), having certain goals, completing appropriate tasksdeadline, doesn't get bored easily and always doing the job optimally.

To see student interest and motivation, researchers looked at the activity aspect of student activity in the classroom. Where student activity is an interpretation of the student's learning interest and motivation. The student activity observation assessment rubric was taken from Dewi Riyanti (2012), to find student activities using the formula from the book Trianto 2011: 76, with criteria taken from the book Sudjana 2012.

RESULTS AND DISCUSSION

Learning is the process of people acquiring various skills, skills and attitudes. It can also be interpreted that learning is a process of effort carried out by a person to obtain a new change in behavior as a whole as a result of his experience in interaction with the environment (Oemar Hamalik (2001: 27).

There is no doubt that interest influences learning outcomes, if someone is not interested in learning something, they cannot be expected to succeed well in learning something. Interest is an attitude that makes a person more active in a particular field and a positive attitude about selected aspects of the environment. Students' interest in learning increases when they are involved in student-centered activities (Subadrah Madhawa Nair, et all. 2014). Interest in learning is a feeling of pleasure, liking and attention towards efforts to gain knowledge. In learning activities, students at school study various sciences and efforts are made so that all students get good grades which of course can be achieved by having a high interest in learning (Siwi Puji Astuti. 2015).

Students are successful in learning if they have a desire to learn (Saragi, et al, 2016), which is a very important principle in the learning process. The desire or urge to learn is known as learning motivation (Amir, 2016). Motivation is an important factor in learning because motivation can encourage a child in their learning activities (Suprihatin, 2015). Whether individuals are said to learn or not depends on their needs and motivation (Oktiani, 2017). The needs and motivation of an individual/person become the individual/person's

goals in learning (Kadji, 2012). Meanwhile, motivation will arise if an individual has a great interest in something (Manizar, 2015).

Based on the results of data collection based on observations and interviews at SMAN 9 Banda Aceh, several problems were obtained, namely problems in students' interest in learning, students' motivation towards learning physics was still lacking, which led to low students' daily exam results. Students' interest in learning at this school is still in the low category, stemming from a learning style that is said to be unable to motivate students, the environment and people around them do not support active learning.

Activeness is a motor in learning activities, students are required to be active. Learning activity is influenced by many factors, both those that come from within the student and those that come from outside the student. Factors that come from the students themselves are related to skills, such as interest and encouragement to learn. Interest and encouragement to learn can be generated through the efforts and situations created by the teacher. The efforts and situations created by the teacher can not only influence interest and drive to learn but also influence interest and drive to learn and also influence learning activity (Sinar, 2018: 8)

The instrument used is an observation sheet, observations are made to find out how interested and motivated the students are by looking at the students' active activities while the learning process is taking place. Students can be said to be active if they carry out positive activities in learning, including being able to communicate with the teacher or others, students listening to the teacher when the teacher explains the lesson material, and taking notes or summarizing it, students can answer questions and contribute their opinions, dare to speak in front of the class to do presentations, doing assigned tasks, asking questions, answering evaluation questions, and feeling enthusiastic, happy in doing assignments.

Physics learning in classes X and XI MIPA, student learning activity is low, namely 42.78% for class This percentage shows that student activity needs to be increased, either by using learning methods or other methods that help increase student interest and motivation. Apart from that, learning in class This is proven by students' statements of agreement on the response sheet for student activities, where physics is a difficult subject with a percentage of 67.24% agreeing and 68.11% rarely going to the physics laboratory.

Interest has a big influence on learning. People who do not have an interest in certain subjects find it difficult to achieve optimal learning success. Someone interested in a subject will achieve optimal learning outcomes. Researchers in the field generally agree that interest consists of cognitive and affective components (Luke K. Fryer, 2015). For interest to develop, someone needs to create interesting content (K. Ann & Suzanne, 2017). Therefore, teachers must be able to arouse the interest of all students to achieve predetermined competencies. Apart from that, in the learning process, we must pay attention to what can encourage students to learn well or have the

motivation to think and focus, plan and carry out activities related to or supporting learning. For this reason, in designing learning programs, educational units must pay attention to the affective domain (Yesy Oktalia, et al. 2017).

According to Ali (2009), the success of learning depends on the use of appropriate teaching methods and learning media. Accuracy in selecting a learning model is a match between the characteristics of the material and the characteristics of the students, both psychologically and physically. For this reason, a teacher's expertise and skills are needed in determining the strategies and models that will be applied. Mistakes in choosing a learning model will result in students' understanding not being optimal which will later impact on not achieving the material and objectives optimally (Rudi Budiman, 1999: 1). Furthermore, it will also result in a decline in student learning outcomes.

Apart from that, based on interviews with study teachers, the obstacles experienced during the learning process include students showing a lack of interest in learning physics. This can be seen in students being lazy in learning activities, and having difficulty understanding concepts among students, this is because students have difficulty with the subject. physics. Students imagine that physics is a subject that contains formulas. During observations, some students often went home early because they were taking part in a training held by Diaspora (Education and Sports Service). In this case, it appears that students prefer outside activities compared to studying in the classroom, this shows that their motivation for learning in the classroom is relatively low.

The results of the interview with the Head of Curriculum, the problem with the final National Examination scores in 2019, especially the low physics scores from the UNBK results. Several factors include students' lack of ability, especially in the field of material, lazy children, low interest in learning, lack of student motivation in learning from the family, social environment, as well as technological advances such as cell phones being used in a negative direction which is an obstacle to passing the National Examination. This is proven by the fact that almost all of the tryouts failed to reach the specified graduation standards. Moreover, there is very little interest in the field of physics studies at the National Examination. The factors that have been mentioned are very influential on the National Examination results which make students low in mastering competency standards and basic competencies, especially in the field of physics.

According to Osborne et al. (2003) in Melanie et al. (2017), although physics is considered useful, physics subjects are the least interesting for students compared to chemistry and biology. As students develop, interest tends to decline throughout middle school, the most pronounced decline observed is for the subjects of physics and chemistry.

Next, researchers interviewed students referring to the interest indicators described by Titin (2017) including students' desire to learn, students' interest in learning, students' attention in the learning process, students'

activeness in the learning process and the ultimate goal of understanding the material presented. In this case, one of the results of an interview with a student was that when the physics learning schedule was scheduled, they felt bored and not interested in learning, especially since the learning style at school made students prefer other subjects. Apart from physics lessons containing formulas, they have difficulty understanding the application of physics in everyday life.

During the observation, researchers also interviewed students regarding their desire to study physics which refers to motivation indicators: awareness of learning, creativity, desire to have good grades (achievement), have certain goals, complete assignments according to deadlines, do not get bored easily and always work. tasks to the maximum. In this case, it was found that there were still many students whose physics scores were below the KKM and who felt bored when studying physics. This shows that the physics material is felt to be boring because of the difficulty for students in harmonizing the material and its application in everyday life.

Interest and motivation to learn are two psychological factors that have been empirically proven to have a significant influence on student's academic achievement at school. Students who have high interest and motivation to learn are usually characterized by good academic grades, have structured study habits, have a good understanding of each reading (Silvia, 2012, in Black & Allen, 2016), have high self-efficacy, and have high learning performance (Tang & Reynolds 1993, in Howard, Tang, & Austin, 2014). Students who have low interest and motivation to learn usually tend to withdraw, do not attend school, drop out of school, have relatively high levels of anxiety, and have low academic results (Prospero & Vohra, 2007 in Sturges, Maurer, Allen, Gatch, & Shankar, 2016).

According to (Sari, et al. 2016) if students are interested in a subject, students will pay more attention to the lesson that has made them interested. Likewise, students who are less active and do not do assignments indicate that these students lack motivation to learn because motivation is everything that encourages someone to do something. Students who have less motivation cause students to have less drive to learn. Most explanations show that there is a strong correlation between motivation as an important catalyst for successful learning and academic achievement (Partovi & Razavi, 2019). So, students' lack of interest and motivation to learn will have an impact on students' learning achievements.

According to Judith et al. (2016), there are four interventions to increase interest: settings to gain attention, contexts that can arouse the individual's previous interest, problem-based learning, and increasing utility value in learning. In every school context, having students with high interest and motivation to learn is certainly the hope of teachers. Apart from making it easier for teachers to guide students to study at school, achieving maximum learning outcomes will also be easier because students have the initiative and encouragement from within for maximum achievement.

CONCLUSION

Based on the results of the case study, it can be concluded that physics learning in static fluid and rectilinear motion is taught using conventional methods or lecture methods (teacher-centered). The percentage of student activity was calculated at 42.78% for class X MIPA 2 and followed by XI MIPA 4, namely 50.56%. This percentage shows that student activity is in the low category, so it needs to be increased either by using learning methods or other methods that help increase student interest and motivation in learning. Based on the results of interviews with teachers, the obstacles experienced during the learning process include students being lazy in learning activities, and students having difficulty understanding concepts, this is because students have difficulty with physics subjects. Students imagine that physics is a subject that contains formulas. Furthermore, the Head of Curriculum explained that interest in learning and the ability to master the material were still very lacking, which had an impact on low final exam and National Examination scores.

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REFERENCES

Ali, Muhammad. (2009). *Pendidikan Untuk Membangun Nasional*. Bandung: Penerbit INTIMA

Amir, H. (2016). Korelasi Pengaruh Faktor Efikasi Diri Dan Manajemen Diri Terhadap Motivasi Berprestasi Pada Mahasiswa Pendidikan Kimia Universitas Bengkulu, *Manajer Pendidikan*, 10 (4): 336-342

Arikunto, Suharsimi. 2006. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta : Rineka Cipta.

Astuti, P.S. (2015). Pengaruh Kemampuan Awal Dan Minat Belajar Terhadap Prestasi Belajar Fisika. *Jurnal Formatif* 5(1): 68-75. Issn: 2088-351x

Black, S., & Allen, J. D. (2016). *Part 1: Foster Intrinsic Motivation. The Reference Librarian* , 1-16.

Depdiknas. (2007). *Peraturan Pemerintah Nomor 16 Tahun 2007 tentang Standar Kualifikasi Akademik dan Kompetensi Guru.* Jakarta: Fokus Media

Dewi Riyanti. (2012). Peningkatan Aktivitas Siswa Dalam Pembelajaran Pemeliharaan Bahan Tekstil Dengan Metode Pembelajaran Tipe *Team Asisted Individualization* Di Smk N 6 Yogyakarta. *Skripsi*. Yogyakarta: Universitas Negeri Yogyakarta

Fakhri, M.I, DKK. (2018). Penggunaan Media Pembelajaran Animasi Berbantuan *Macromedia Flash* Pada Pembelajaran Fisika Pokok Bahasan Momentum, Impuls, Dan Tumbukan Kelas X Sma. *Jurnal Pembelajaran Fisika*. 7 (3): 271-277

Fitrah dan Luthfiyah. (2017). *Metodologi Penelitian: penelitian kualitatif, tindakan kelas & studi kasus.* Jawa barat: cv. Jejak

Hamalik, Oemar. *Proses Belajar Mengajar*. Jakarta: Bumi Aksara. 2001.

Howard, L. W., Tang, T. L.-P., & Austin, M. J. (2014). Teaching Critical Thinking Skills: Ability, Motivation, Intervention, and The Pygmalion Effect. Journal of Business Ethics. 1-15

Judith M. Harackiewicz, *et all. 2016. Interest Matters: The Importance of Promoting Interest in Education. Policy Insights Behav Brain Sci*. 2016 *Oct*; 3(2): 220–227

K. Ann Renninger And Suzanne E. Hidi. (2016). The Power Of Interest For Motivation And Engagement. New York: Routledge

Kanginan, Marthen. *Fisika SMU*. Jakarta: Erlangga. 2002.

Kadji, Y., 2012. Tentang Teori Motivasi , *Jurnal Inovasi*. 9 (1): 1-15

Kpolovie, P. J., Joe, A. I., & Okoto, T. (2014). *Academic Achievement Prediction: role of Interest in Learning and Attitude Towards School*. International Journal of Humanities Social Sciences and Education, 1 (11): 73-100

Laili, Y. N., I K. Mahardika, dan A. A. Gani. (2015). Pengaruh model c*hildren learning in science* (CLIS) disertai LKS berbasis multirepresentasi terhadap aktivitas belajar siswa dan hasil belajar siswa dalam pembelajaran fisika di SMA Kabupaten Jember. *Jurnal Pembelajaran Fisika*. 4 (2): 171-175

Luke K. Fryer. (2015). *Predicting self-concept, interest and achievement for first-year students: The seeds of lifelong learning. Learning and Individual Differences*

Manizar, E., (2015). Peran Guru Sebagai Motivator Dalam Belajar. *Tadrib*. 1(2): 171-188

Melanie M. Keller, *et al*. (2017). The Impact of PhysicsTeachers' Pedagogical Content Knowledge and Motivation on Students' Achievement and Interest. *Journal Of Research In Science Teaching*. 54 (5): 586–614

Neizhela A., dan Mosik. (2015). Meningkatan Hasil Belajar Melalui Pendekatan Kontekstual dengan Metode Think Pair Share Materi Kalor

pada Siswa SMP. *Unnes Physics Education Journal.* 4(1): 36-42. 9(02): 1556-1574

Nurmaliati. (2017). Perbedaan Hasil Belajar Fisika Menggunakan Model Pembelajaran Kooperatif Tipe The Power Of Two dengan Tipe Think Pairs Check pada Siswa Kelas Xi Sekolah Menengah Atas. *Jurnal Pendidikan Unsika.* 5(01): 42-46

Oktalia, Yesy. dkk. (2017). Pengaruh Minat Dan Motivasi Pada Penerapan Model Discovery Berbantuan Media Animasi terhadap Hasil Belajar Fisika Di Sma Negeri 4 Kota Bengkulu. *Jurnal Pembelajaran Fisika,* Vol. 1 (1).

Oktiani, I., Kreativitas Guru dalam Memotivasi Belajar Peserta Didik, *Jurnal Kependidikan*, 2017: 5(2): 216-232

Rebecca M. Herges, Stacy Duffield, William Martin, and Justin Wageman. (2017). Motivation and Achievement of Middle School Mathematics Students. *Journal Motivation and Achievement of Mathematics Students The Mathematics Educator.* 26 (1): 83–106

Rudi Budiman. (1999). *Konsep Dasar IPA I,* (Jakarta : Departemen Agama RI.

Sari, I.N, dkk. (2016). Pengaruh Minat Dan Motivasi Belajar Terhadap Prestasi Belajar Fisika Pada Siswa Kelas Xi Ipa Sma Negeri 1 Galing Kabupaten Sambas. *Jurnal Edukasi Matematika dan Sains.* Vol 4 (2).

Setiawan. Y.Z, dkk. (2016). Pengaruh Motivasi Belajar Dan Lingkungan Belajar Terhadap Prestasi Belajar Fisika Kelas X Sma Negeri Di Kecamatan Mendoyo Tahun Ajaran 2014/2015. *Jurnal Wahana Matematika dan Sains.* Vol 9 (2).

Saragi,M.P.D., Mega Iswari, Mudjiran. (2016). Kontribusi Konsep Diri Dan Dukungan Orang Tua Terhadap Motivasi Belajar Siswa Dan Implikasinya Dalam Pelayanan Bimbingan Dan Konseling, *Konselor*: 5(1): 1-14

Sears dan Zemansky. (1993). *Fisika Universitas Jilid 1*. Jakarta: Erlangga

Sinar. (2018). *Metode active learning. Ed 1, Cet 1*. Yogyakarta: deepublish

Siwi Puji Astuti. (2015). Pengaruh Kemampuan Awal dan Minat terhadap Prestasi Belajar Fisika. *Jurnal Pendidikan MIPA.* Vol. 5(1)

Sturges, D., Maurer, T. W., Allen, D., Gatch, D. B., & Shankar, P. (2016). Academic Performance in Human Anatomy and Physiology Classes: A 2 Year Study of Academic Motivation and Grade Expectation. *Advances Psychology Education*, 26-31.

Subadrah Madhawa Nair,*et all*. (2014). Comparing The Effects Of The Story Telling Method And The Conventional Method On The Interest,

Motivation And Achievement Of Chinese Primary School Pupils. *Procedia - Social and Behavioral Sciences 116 (2014) 3989 – 3995*.

Sudjana, Nana. (2010). *Cara Belajar Siswa Aktif dalam Proses Belajar Mengajar*. Bandung: Sinar Baru Algasindo

Sugiyono. 2013. *Metode Penelitian Kuantitatif kualitatif dan R & D*. Bandung: Alfabeta

Supiyanto. *Fisika Untuk SMA Kelas XI*. Jakarta: Phibeta. 2007

Suprihatin, S. (2015). Upaya Guru Dalam Meningkatkan Motivasi Belajar Siswa , *Jurnal Promosi Jurnal Pendidikan Ekonomi UM Metro*, 3(1): 73-82

Tahereh Partovi dan Majid Reza Razavi. (2019). The effect of game-based learning on academic achievement motivation of elementary school students. *Journal Learning and Motivation 68 101592. Department of Educational Sciences, Taybad Branch, Islamic Azad University, Taybad, Iran*.

Trinto. 2011. *Mendesain Model Pembelajaran Inovatif Progresif*. Edisi Ke-4. Jakarta: Kencana

Titin Purnamasari. (2017). Pengaruh Motivasi dan Minat Belajar terhadap Prestasi Belajar Mata Pelajaran Memproses Perjalanan Dinas Siswa Kelas XI Administrasi Perkantoran SMK Muhammadiyah 2 Bantul Semester Gasal Tahun Ajaran 2016/2017. *Skripsi.* Yogyakarta: Universitas Yogyakarta

Yesy Oktalia, dkk. (2017). Pengaruh Minat Dan Motivasi Pada Penerapan Model Diskoveri Berbantuan Media Animasi terhadap Hasil Belajar Fisika Di Sma Negeri 4 Kota Bengkulu. *Jurnal Pembelajaran Fisika,* Vol. 1(1).