



The Impact of Motivation and Parental Attention on Students' Science Learning Achievement

Rahma Maulida^{1*}, Ayang Vina Alvionita², Aprilia Fransisca³, Joko Suprapanto⁴

^{1,2,3,4} Elementary School Teacher Education, Nusa Putra University, Sukabumi, Indonesia
{rahma.maulida_pgsd20, ayang.alvionita_sd20, aprilia.fransisca_pgsd20, joko.suprapanto}@nusaputra.ac.id

Abstract. Parents' attention and learning motivation are several factors that influence students' science learning outcomes. Differences in the level of parental attention and learning motivation lead to different learning outcomes between students. The lack of attention received by children will have an impact on motivation and learning achievement. The attention of parents is very supportive of children's learning activities at school and home. Children who get the attention of their parents are more motivated to learn which has an impact on learning achievement. This study aims to determine the level and influence of parental attention, learning motivation, and learning discipline on students' science achievement. The method used is the literature method, the stages include: identifying, evaluating, and interpreting research topics on all research findings, then analyzing by multiple linear regression analysis. The data collection technique used is documentation, which is a data collection technique by collecting and analyzing written, graphical, and electronic documents. Data analysis uses regression testing and hypothesis testing using the published application. These results prove that the statement H4 "Learning motivation has a significant effect on student achievement at Batik Surakarta Junior High School" is true, showing the importance of students' science learning motivation on student science performance, an important part of the process of teaching education and all scales are found to correlate with student science performance.

Keywords: Motivation, Parental Attention, Science Learning Achievement.

1. Introduction

In general, the concept of education is a process whereby a group of people, through teaching, training, and research, can acquire knowledge, skills, and habits that are passed down from generation to generation. According to Law No. 20 of 2003, education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, nation, and country. Ki Hajar Dewantara defines education as an effort to improve a child's character, mind, and body so that he can achieve perfection in life, namely living in harmony with nature and society and guiding children's lives.

Education has a high role in developing the potential of students. The process of developing the potential of these students can be initiated by familiarizing them with thinking skills and cultivating their abilities [1]. Reform efforts to improve the quality of human resources capable of developing knowledge, awareness and understanding of oneself, the environment and the surrounding community are efforts in the implementation of the national education system so that it can help provide change

towards a better life. Education cannot be separated from human life because education plays an important role in everyday life [2].

This research certainly cannot be separated from what learning motivation is, so it is necessary to understand what learning motivation is first. Motivation to learn can be interpreted as attention and effort in various ways that are considered important to students, which teachers might expect can also be used as a difference in achievement (also called mastery) and performance motivation goals.[3]. According to [4], the existence of effort and motivation is the basis for better performance. The same thing also happens in science learning. The strength of motivation has a direct effect on student performance.

According to [5], learning is a process and series of efforts or activities of an educator that aim to enable students to learn in such a way as to be able to communicate well, work together with friends or people around them, think critically and find solutions to problems, and innovate and be creative.

Based on the above understanding, it can be synthesized that the interaction process in this case is between students, and education can later lead to good learning interactions.

Student achievement can be assessed using certain criteria (based on group norms or unspecified norms). If the student has a good score, then it is called successful, and vice versa, if the score is low, it is considered unsuccessful. Learning achievement in this study focuses on one subject, namely science. Science, or natural science, is a learning vessel that supports science and technology, and direct experience is needed in the learning process of natural science to foster the ability to explore and understand the natural environment [6].

Furthermore, [7] argues that science is a science so that it can be applied to anyone, be it elementary school or university. The development of the era is influenced by the development of natural science and technology, and only the generation that has more abilities and achievements can achieve success [8] Efforts to improve natural science learning outcomes are not only influenced by ongoing learning; other factors that influence them are intrinsic factors, namely learning motivation. Learning motivation is internal motivation to achieve good results [9]. Therefore, to achieve the desired natural science learning outcomes, the various components of learning must support each other.

In addition, the role of the family, especially parents, in supporting children's education is also very much needed. [10] believes that parental attention can help a child's learning process at school and will determine a child's academic success. Of course, parents will really pay attention and think about how their children should receive an education. Many parents want their children to get a good education and get good grades at school. When a lot of attention is paid to children's learning processes, it is not surprising; that way, they can understand what they learn in school and therefore excel. The way each parent guides and motivates their child through the learning process may be different.

Science is a good and important school subject for school students. Science is a subject that allows students to question their environment and discover new things so that this subject is an important subject for students to learn [11]. Natural science learning expects the development of students' scientific attitudes. A child's personality will change according to the environment, and of course, natural science learning must be according to the stages of development [12]. Understanding the importance of science subjects, we conducted several studies to find out which aspects are most important for improving students' science achievement.

In fact, every parent pays different attention to their child's learning process, and maybe this can have an influence on children's motivation and learning achievement. Based on preliminary observations conducted by researchers from March 27 to April 4, 2023, at public elementary schools in Sukabumi Regency for the 2022–2023 academic year, it was found that parents' attention and learning motivation varied. This is evident from the results of an interview with a teacher named DR saying "Memang ada anak yang sama sekali gabisa baca bisimillah bismillah acan setiap ditanya teh diem wae te tiasaeun, terus ternyata setelah diteliti teh memang ya mohon maaf ada pengaruh dari orang tua juga, kalo bareng-bareng ma sama temenya bisa dikelas". Based on this statement, it can be understood that parents' attention is very important in the child's learning process and can influence children's learning abilities.

Explained further by the teacher named DR, "Kalo AH (salah satu siswa) ini perlu perhatian khusus karena anaknya terlalu aktif, orang tuanya dagang bubur bukan di pabrik tapi terlalu santai apa gimana ya, jadi ga terlalu memperhatikan anak lah, sampai sekarang bacanya aja baru huruf S, misalkan dikasih tugas mengisi soal da gabisa bacanya terus emang ga dibantu juga dirumahnya, da kalo dibantu mah ada meren jawabannya, nah. itu ma engga"

Then DR added, "Tapi ada juga yang kerja tapi anaknya aktif, diantaranya itu tah AG (salah satu siswa) itu ma kerja pulang malem gitu kan, di Sukabumi da kerjanya teh jauh tapi da ada perhatian dari neneknya."

In addition to the results of interviews with the teacher, the researcher conducted interviews with several parents of students, one of whom was L. He explained "Da ai pameget mah nya kumaha di arahken na waktuna herey mah herey tapi Alhamdulillah ari pelajaran na mah te katingaleun, enya ge eleg tapi fokus dibumi mah hese komo ayena musim sepedahan wae, aya PR ge te di kerjaken tapi ari di sakola mah biasa fokus te cara dibumi beda, abdi mah ngerjaken PR na uwih ngaos wengi soalna uwih sakola emam terus madrasah uwih ashar langsung ngaos diditu mah, jadi kin we uwih ngaos kerjaken PR na". Based on this statement, it can be understood that parents with the initials L state the pattern of guidance that is carried out for their children at home.

Then, the parents with the initials L agreed that the motivation and attention of parents had an effect on the learning process by saying "Motivasi mah ngaruh soalna Abdi mah ka murangkalih te cuek kitu nya hente, waktuna belajar harus belajar nami na murangkalih di sakola sok jeng bari maen jadi aya te fokusna jadi di rumah urang kudu lah ngajarken tapi Abdi ge ningali hela waktosna soalna ari di sakalikeun ma kaberedeg hawatos".

Parents with the initials A "Lamun aya PR ma langsung uwih sakola pokokna jadwal uwih sakola langsung weh kerjaken kadang di carek kumaha mood mood-an"

Based on the observations and observations above, the researcher draws the title "The Impact of Parental Motivation and Attention on Students' Science Learning Achievement."

2. Research Methods

A. Research Approach

The preparation step of this study adopted the literature review method. The literature review method is used to answer research questions, and the stages include identifying, evaluating, and interpreting research topics in all research findings [13]. Taking "the influence of parental motivation and attention on science academic achievement" as a keyword, several literature collections with similar themes were searched for in their collections. There are 20 articles used in this study according to keyword topics from various well-known international and national journals. Research articles were obtained by searching Google Scholar using the Publish application.

B. Research Engineering

Data collection techniques are processes used to obtain data and information related to the problem being studied. Researchers used data collection techniques in this study, including documentation.

The data collection technique using documentation involves collecting and analyzing documents, both written and electronic.

3. Result and Discussion

The results and discussion of this literature review research were obtained from the results of the analysis and summaries of several articles in appropriate journals with similar discussions, namely regarding the impact of motivation and parental attention on elementary school student achievement in science. The following is a discussion of the results of some of these research articles.

A. Motivation to Learn

Based on research results from journals, the results of calculating $t\text{-score} = 2.849 > t\text{-table} = 2.003$ and rejecting H_0 are rejected, which shows that learning motivation has a significant effect on academic achievement. These results prove that the statement H_4 "Learning motivation (X3) has a significant effect on student achievement at Batik Surakarta Junior High School" is proven true.

Another article from [14] supports the above statement with the results from Table 1, and the test of Hypothesis 1 shows that boys and girls in the sample have the same motivational goals. Both sexes scored highest on the mastery objective and lowest on the performance objective. Therefore, both male and female students indicated that they were satisfied with their ability to solve problems, deal with problems, accept ideas, and pass exams. Conversely, students receive relatively low marks on an item. The achievement target with external motivation is that students can attract the teacher's attention or make a better impression in the eyes of others.

B. Parents Attention

Results of the literature review of the journal [15] show that the child's score is divided into three categories: high, medium, and low. Usually, these three groups are influenced by factors of talent and will. Not that children who achieve below average are stupid, but they are more vulnerable to a lack of parental encouragement for their willingness to learn. Parental involvement in the development of children's achievements includes:

- Encouraging children to understand the importance of education for their future.
- Act as a facilitator in all activities.
- Become a source of knowledge in the family.
- Encouraging children to continue to improve their academic achievement.
- As a place to ask questions and complain about the problems experienced by children.
- Provide clear direction for the child's future.

The research findings above are also corroborated by the findings [16], which show that "the third hypothesis tested in this study was to determine the significance of the influence of parental concern (X1) on the learning performance of accounting skills (Y) of Badong Vocational High School students. The t-score $X1 = 2.194$ and t-table = 1.977, which means that the t-score $X1 > t\text{-table}$ ($2.194 > 1.977$), it can be concluded that H_0 is accepted, parental care and home learning facilities have a significant positive effect on scores. Students study professional accounting at Padang Vocational High School. The results show that learning facilities have a significant influence on student achievement.

C. Attention and Motivation for Students' Science Learning Achievement

It is known from the results of research that has been carried out by [17]. Between students' natural science learning motivation and student achievement in natural science learning there is a significant relationship. This research shows the results that students' motivation to learn science is important to students' science achievement. Based on the consensus literature evidence, it illustrates that the prediction of student achievement in natural sciences is influenced by motivation in learning natural sciences. Therefore, it can be said that students' motivation to learn science has an important influence on student performance and is also an important part of the education and teaching process. In addition, all scales were found to be correlated with

students' science performance. Therefore, this finding means that educators should do their best to motivate students to study science.

In line with the research conducted [18], the results of the calculation of the regression test show that the attention of parents has an impact on the learning outcomes of the 4 Sampit State Senior High School students in 2016–2017. This means that by increasing the attention of parents, it will be possible to increase the value of student learning. Therefore, should parents pay attention to it. Their children can influence learning outcomes. If we look deeper, we often encounter various attitudes towards parents in the daily lives of their children. The attitude of parents, namely parents who show their children support or encourage their children to achieve achievements.

In addition to the motivation that influences students' science learning achievement, there is also another factor, namely the attention of parents, as the results of research from [19] state. This study got the results of self-efficiency (0.3), active learning (0.3) and achievement of goals (0.12) (see Hypothesis 1), this shows that family experience has a significant correlation between these three aspects. It is realized that confidence in the ability to learn science on their own, understanding of scientific content on their own, and persistence in challenging natural science learning activities in studying natural science respondents' self-efficacy is determined by questionnaire items with proximal correlations.

Research from [20] also shows that growing and nurturing interest in science and science-related careers requires sportsmanship through actions encouraging a culture of happy learning science in the family, children entering tutoring classes, providing financial support for science activities and motivating children to explore the environment. Thus, this study shows that in developing students' interest in science and science-related careers parents can play an important role. Because of this, parents can also participate in scientific culture programs and be motivated to participate in efforts to motivate their children to have an interest in science, so not only through programs and policies from formal institutions (such as schools and students).

4. Conclusion

This literature review obtained the results and discussion that the results of the analysis and summaries of several articles in journals were in accordance with the discussion, namely regarding the impact of motivation and parental attention on elementary school student achievement in science. These results prove that the statement H4 "Learning motivation has a significant effect on student achievement at Batik Surakarta Junior High School" is proven true. Therefore, both male and female students indicated that they were satisfied with their ability to solve problems, deal with problems, accept ideas, and pass exams. Conversely, students receive relatively low marks on an item.

The findings show that there is a significant relationship between students' achievement in science and students' motivation to learn science. Family also has a significant influence on student achievement.

The results that can be obtained from this study indicate that students' motivation to learn science is important to students' science learning achievement. Based on the context of the evidence literature illustrates the prediction of students' natural science learning achievement is influenced by the motivation to learn natural science. Therefore, it can be said that students' motivation in learning science has an important influence on student performance, and is also an important part of the education and teaching process. In addition, all scales were found to be correlated with students' science performance.

Therefore, these findings mean to educators that they should do their best to motivate students to study science, especially those who are encouraged to promote active learning strategies to improve students' science performance. This means that by increasing the attention of parents of students, it will be able to increase the value of student learning. In addition to the motivation that influences students' science learning achievement, there is also another factor, namely parental attention as the results of the research show that family experience is significantly correlated with three aspects of motivation to learn natural science, namely self-efficacy, active learning and goal attainment.

This study uses the ex post facto method and has the main limitation of not exploring further the relationship between motivational variables and parental attention and their impact on students' science achievement. It is hoped that these three variables will then be combined in one study to determine their effect on science learning achievement.

References

- [1] D. Adela, "Pendekatan Lingkungan Sekitar Sebagai Basis Pembelajaran untuk Mengembangkan Sikap dan Nilai Dalam Pembelajaran IPS," *J. BELAINDIKA (Pembelajaran dan Inov. Pendidikan)*, vol. 1, no. 2, pp. 26–32, 2019, doi: 10.52005/belaindika.v1i2.16.
- [2] Utomo, "Implementasi Penguatan Pendidikan Karakter Melalui Pembiasaan di SDN 4 Cicurug Kabupaten Sukabumi," *J. BELAINDIKA (Pembelajaran dan Inov. Pendidikan)*, vol. 1, no. 1, pp. 17–33, 2019, doi: 10.52005/belaindika.v1i1.6.
- [3] S. Schulze and M. van Heerden, "Learning environments matter: Identifying influences on the motivation to learn science," *South African J. Educ.*, vol. 35, no. 2, pp. 1–9, 2015, doi: 10.15700/saje.v35n2a1058.
- [4] Y. U. Lawe, "Motivation and Learning Achievement in Natural Science Subject of the Fifth Graders of Elementary School: a Correlational Study," *J. Educ. Technol.*, vol. 1, no. 1, p. 51, 2017, doi: 10.23887/jet.v1i1.10084.
- [5] T. A. Hopeman, N. Hidayah, and W. A. Anggraeni, "Hakikat, Tujuan Dan Karakteristik Pembelajaran Ips Yang Bermakna Pada Peserta Didik Sekolah Dasar," *J. Kiprah Pendidik.*, vol. 1, no. 3, pp. 141–149, 2022, doi: 10.33578/kpd.v1i3.25.

- [6] Y. Fitria, "Mampukah Model Problem Based Learning meningkatkan Prestasi Belajar Sains Mahasiswa Calon Guru Sekolah Dasar?," *J. Inov. Pendidik. Dan Pembelajaran Sekol. Dasar*, vol. 3, no. 1, p. 83, 2019, doi: 10.24036/jippsd.v3i1.106372.
- [7] U. Aiman and R. Amelia Ramadhaniyah Ahmad, "Model Pembelajaran Berbasis Masalah (Pbl) Terhadap Literasi Sains Siswa Kelas V Sekolah Dasar," *J. Pendidik. Dasar Flobamorata*, vol. 1, no. 1, pp. 1–5, 2020, doi: 10.51494/jpdf.v1i1.195.
- [8] imam dkk. Gunawan, "Hubungan Kemampuan Berpikir Kreatif dan Kritis dengan Prestasi Belajar Mahasiswa Pada Mata Kuliah Konsep Sains II Prodi IKIP PGRI Madiun," vol. 4, pp. 10–40, 2014.
- [9] B. Pambudi, R. B. Efendi, L. A. Novianti, D. Novitasari, and N. Ngazizah, "Pengembangan Alat Peraga IPA dari Barang Bekas untuk Meningkatkan Motivasi Belajar dan Pemahaman Siswa Sekolah Dasar," *Indones. J. Prim. Educ.*, vol. 2, no. 2, p. 28, 2019, doi: 10.17509/ijpe.v2i2.15097.
- [10] R. Ningsih and A. Nurrahmah, "Pengaruh Kemandirian Belajar dan Perhatian Orang Tua Terhadap Prestasi Belajar Matematika," *Form. J. Ilm. Pendidik. MIPA*, vol. 6, no. 1, pp. 73–84, 2016, doi: 10.30998/formatif.v6i1.754.
- [11] A. Roebianto, "The Effects of Student's Attitudes and Self-Efficacy on Science Achievement," *J. Pengukuran Psikol. dan Pendidik. Indones.*, vol. 9, no. 1, pp. 1–10, 2020, doi: 10.15408/jp3i.v9i1.14490.
- [12] D. Permana, "Pengaruh Pendekatan Saintifik Terhadap Sikap Ilmiah Siswa," *J. BELAINDIKA (Pembelajaran dan Inov. Pendidikan)*, vol. 1, no. 1, pp. 46–56, 2019, doi: 10.52005/belaindika.v1i1.10.
- [13] B. T. K. Dewi and M. A. Setiawan, "Kajian Literatur: Metode dan Tools Pengujian Celah Keamanan Aplikasi Berbasis Web," *Automata*, 2022, [Online]. Available: <https://journal.uui.ac.id/AUTOMATA/article/view/21883>
- [14] A. Wicaksana and T. Rachman, "Student Learning Achievements Reviewed From Learning Facilities, Peer Environment, Motivation, And Discipline" *Angew. Chemie Int. Ed. 6(11)*, 951–952., vol. 3, no. 1, pp. 10–27, 2018, [Online]. Available: <https://medium.com/@arifwicaksanaa/pengertian-use-case-a7e576e1b6bf>
- [15] A. Info, "The Role of Parents in Learning Motivation and Student Achievement : a good achievement," vol. X, pp. 6–10, 2023.
- [16] E. S. Dini, Y. Wardi, and S. U. Sentosa, "The Influence of Parent's Attention, Parents Education Background, Learning Facilities and Learning Motivation toward Student Learning Achievement," vol. 64, pp. 308–316, 2019, doi: 10.2991/piceeba2-18.2019.105.
- [17] C. Y. L and N. C. H, "Studentsâ™ Motivation towards Science Learning and Studentsâ™ Science Achievement," *Int. J. Acad. Res. Progress. Educ. Dev.*, vol. 6, no. 4, pp. 174–189, 2018, doi: 10.6007/ijarped/v6-i4/3716.
- [18] W. Ambarwati, "Influence of Parents Attention, Emotional Intelligence and Learning

Motivation to Learning Outcomes,” *JETL (Journal Educ. Teach. Learn.*, vol. 3, no. 1, p. 72, 2018, doi: 10.26737/jetl.v3i1.467.

- [19] S. Schulze and E. Lemmer, “Family experiences, the motivation for science learning and science achievement of different learner groups,” *South African J. Educ.*, vol. 37, no. 1, pp. 1–9, 2017, doi: 10.15700/saje.v37n1a1276.
- [20] L. Halim, N. Abd Rahman, R. Zamri, and L. Mohtar, “The roles of parents in cultivating children’s interest towards science learning and careers,” *Kasetsart J. Soc. Sci.*, vol. 39, no. 2, pp. 190–196, 2018, doi: 10.1016/j.kjss.2017.05.001.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

