

## Investigation of students' motivation to learn science while studying from home during a pandemic

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**Abstract:** This study aims to determine the profile of the motivation for learning science while studying at the homes of class VIII students of SMPN SATAP Taga Laga Buru in lesson 2020/2021. This type of research is descriptive research. The population in this research were all students of class VIII SMPN SATAP Taga Laga Buru, amounting to 36 students. The sample of this study was 36 students obtained by the saturated sampling technique. Furthermore, the data collection technique used non-test techniques, namely questionnaires. Data analysis was performed using descriptive statistics. The results showed that the development of the science learning motivation profile while studying at the home of the VIII grade students of SMPN SATAP Taga Laga Buru experienced highly motivated (44.44%), motivated (47.23%), moderately motivated (8.33%) less motivated and unmotivated development. motivated (0%). It shows that the profile of motivation to learn science is motivated categories.

**Keywords:** Motivation, learning, learning from home, pandemic

## Investigasi motivasi belajar sains siswa ketika belajar dari rumah dimasa pandemi

**Abstrak:** Penelitian ini bertujuan untuk mengetahui profil motivasi belajar IPA selama belajar di rumah siswa kelas VIII SMPN SATAP Taga Laga Buru tahun pelajaran 2020/2021. Jenis penelitian ini adalah penelitian deskriptif. Populasi dalam penelitian ini yaitu seluruh siswa kelas VIII SMPN SATAP Taga Laga Buru yang berjumlah 36 siswa dan sampel penelitian ini berjumlah 36 siswa yang di peroleh dengan teknik sampling jenuh. Selanjutnya teknik pengumpulan data menggunakan teknik non tes yaitu angket. Analisis data dilakukan dengan statistik deskriptif. Hasil penelitian menunjukkan bahwa profil motivasi belajar IPA selama belajar di rumah siswa kelas VIII SMPN SATAP Taga Laga Buru yaitu sangat termotivasi (44.44%), termotivasi (47.23%), cukup termotivasi (8.33%) kurang termotivasi dan tidak termotivasi (0%). Hal ini menunjukkan bahwa profil motivasi belajar IPA masuk dalam kategori termotivasi.

**Kata Kunci:** Motivasi, belajar, belajar dari rumah, pandemi

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## INTRODUCTION

Education is a development process that can develop the potential of students so that those concerned can face and solve life problems. Through education, the potential in a person can develop quickly in carrying out a pleasant learning atmosphere following the abilities he has to determine the quality in himself, society, state, and nation.

The education system is a deliberate and planned attempt to create an environment for learning and actively develop the potential of religion, spiritual strength, self-control, intellect, nobility, and skills required of itself, society, country, and the state. Therefore, education is strengthened by curriculum design that is used as a guide in education. Curriculum can be used as a response in education to the needs of the community and nation in building the potential of the nation's young generation or from outside the individual. According to Tumanggor et al., (2018), motivation is a person's identification of the value or meaning of an activity that is integrated and internalized within oneself. Cleopatra (2015) states that motivation is a person's drive, desire, need to perform certain activities. Cleopatra also explained that motivation could also be defined as a force that drives the direction and accuracy of action towards a goal. From the above description, it can be concluded that motivation encourages a person to find and do something based on his wishes.

According to Azizah et al., (2019), learning is a process that occurs in a person due to the efforts he makes to obtain changes in knowledge, skills, new experiences as a result of interaction with the environment. Learning is beneficial for us to know what we don't know. Meanwhile, according to Purnomo et al., (2019), learning is a process that causes changes in mental behavior that are permanent and result from experience. From the two views above, it can be concluded that learning is a process to cultivate knowledge from the results of experience based on the results of interactions with the environment.

In the teaching and learning process, students need to have the motivation to learn both from within students and the environment or from outside. Personal motivation is a shift in energy that occurs inside a person and that consists of emotions and responses toward the aim of acquiring knowledge. From the above view, learning motivation is the energy that exists within a person which aims to build an excellent spirit. However, because of the Corona Virus Disease that has hit the whole world, it weakens all human activities. Various human activities are weakened by the deadly virus, including the education process in Indonesia. In anticipating the spread of the coronavirus disease, the government, through the Ministry of Education and Culture, decided that the teaching and learning process during the COVID-19 pandemic was carried out remotely.

During the pandemic, schools were closed and moved to online schools. Online school activities are rapidly replacing traditional schools. Online learning practices are carried out through distance teaching (Hodges et al., 2020). There are many ways that teachers do to keep students learning. For example, online learning from home integrated with augmented technology makes students motivated (Nicolete et al., 2021). During the lockdown, the most prominent student activities are doing assignments, playing on cell phones, helping parents, and cleaning (Ritonga & Ramadhani, 2020). The educational disruption of the Covid-19 pandemic can result in a decrease in student motivation with overall unintended consequences for their learning. (Pappas & Giannakos, 2021). Various kinds of learning are offered during the pandemic era, but one trending learning is online learning. When this

learning is carried out, the teacher is at home and the position of the students in their respective homes. The interaction between the two is done virtually.

The study room is a place where teaching and learning occur, where various types of processes are carried out together, and students, educators, and various sources are interrelated (Giannakos et al., 2016). Although face-to-face teaching cannot be done in the critical period of the pandemic, teachers must maintain student learning and motivation (Papamitsiou et al., 2021). Learning changes are made to maintain the quality of learning and adapt to contextual disturbances (Bennett et al., 2017). Fun and self-motivated learning are more effective than boring learning for students (Elton-Chalcraft & Mills, 2015).

Student motivation is excellent when studying online from home (Ritonga & Ramadhani, 2020). However, other researchers found that students' learning motivation when learning online in the pandemic era was at the middle level (Avila & Genio, 2020). The cause of hampered motivational development is the lack of physical presence and interaction between students and their friends as in face-to-face classes. (Pappas & Giannakos, 2021). High or low student learning motivation depends on the learning support used by the teacher during the pandemic (Kurniawan et al., 2021). In Science Education, scheduling also affects the boredom level of students to study (Damopolii et al., 2021).

Thus, motivation becomes a crucial thing to note to achieve effectiveness in learning. Ginanti et al., (2017) Motivation is an increase in energy that is accompanied by feelings and follows on the heels of the desired response. From the description above, it can be concluded that motivation is an impulse that arises from within the individual and from outside the individual to attain specific goals. According to Upoyo & Sumarwati (2011), there are two factors in motivation: intrinsic and extrinsic factors. Intrinsic motivation is all factors that come from within the individual and provide encouragement to do something, while extrinsic factors are all factors that come from outside the person and provide encouragement to achieve something.

The fundamental component of learning motivation is an individual's desire to acquire and use new information, skills, and experiences. Motivation is a condition that arouses, directs, and becomes the basis of one's behavior in achieving a goal. Learning motivation is a force that becomes a driving force for learners by using their perspective and outside to achieve learning goals. Therefore, motivation is something complex. Motivation will cause a change in energy in the individual who acts or does something. A purpose, need, or desire drives everything.

The results of interviews with science subject teachers at SMPN SATAP Taga Laga Buru said that there were several obstacles in the teaching and learning process, such as the geographical location of SMPN SATAP Taga Laga Buru far from the district center so that the data signal network condition was very minimal and coupled with limited availability and use of models and models. Inadequate learning methods applied by teachers. So that the conditions experienced cause the distance learning process not to run well. With all these limitations, the education unit of SMPN SATAP Taga Laga Buru held a face-to-face teaching and learning process from home to house by the teacher.

The limited use of facilities and infrastructure in learning is the main obstacle experienced by SMPN SATAP Taga Laga Buru teachers. So this requires the role of parents to guide and supervise and provide encouragement and motivation so that their enthusiasm and participation in learning is very active. Parents' reason is an effort to give trust and hope

to achieve success in education. In addition, teaching by teachers can also motivate students to learn. Regarding the self-reliance in online learning, educators should ensure that they have unambiguous sets to help students learn when they engage with given tasks (Delen & Liew, 2016; Korhonen et al., 2019).

The teaching and learning conducting at home is a learning process that requires good cooperation between parents and teachers to continue effectively. However, along the way, there are various obstacles as conveyed by the subject teacher that in learning at home, the time for one face-to-face is less than what is usually done in class so that the teacher cooperates with the parents of students to be able to guide and provide motivation so that students can be diligent study. Learning motivation is the energy that exists within a person which aims to encourage someone to achieve specific goals. The obstacles in learning motivation are environmental factors that do not support learning facilities and infrastructure and the situation of a learning environment that is not conducive. To find out whether the problem of students in carrying out learning at home must adapt to learning and the limitations of teaching facilities that impact student learning motivation. During the teaching and learning process in this pandemic situation, students are always under the supervision of parents and teachers. The purpose of this study was to determine the profile of science learning motivation while studying at home for class VIII students of SMPN SATAP Taga Laga Buru for the 2020/2021 academic year.

## **METHOD**

The type of this research is descriptive quantitative. Quantitative descriptive analysis is research used to analyze data by describing or describing the data collected as it is without the intention of making generally accepted conclusions or generalizations. This study aims to determine the profile of science learning motivation while studying at home for class VIII SMPN SATAP Taga Laga Buru. This research was conducted at SMPN SATAP Taga Laga Buru, Golo Nderu Village, Kota Komba district, East Manggarai Regency in November 2020.

The population in this study was class VIII SMPN SATAP Taga Laga Buru which consisted of 36 people. The sample in this study was class VIII Semester 1 SMPN SATAP Taga Laga Buru for the academic year 2020/2021, totaling 36 learners. The sampling technique is a saturated sampling of all members of the population used as a sample.

The technique used in this research is a non-test technique in the form of a questionnaire. The research instrument was used to measure the value of the variables studied. The research instrument was in the form of a questionnaire that aimed to determine the profile of science learning motivation while learning at home. The questionnaire is a statement. The statement uses a Likert scale consisting of two statements, namely positive statements (favorable) and negative statements (unfavorable). In this study, the validity test is expert validity. Two validators validate this instrument. After all the experts have conducted further research, they are recorded in one table, after which the results are interpreted. If the agreement index is less than 0.4, then the validity is said to be low; between 0.4-0.8, it is said to be of moderate validity, and if it is more than 0.8, it is said to be high.

Table 1. Grid of learning motivation questionnaire statements

Indicator	Number of statement		Number item
	Positive	Negative	
Persevere in the face of tasks.	3	2	5
Tenacious in dealing with difficulties in dealing with science lessons.	3	2	5
Interest in science lessons.	3	2	5
Enjoy working independently.	4	1	5
Get bored quickly on routine tasks in science subjects.	3	2	5
Students can defend their opinion in the science learning process.	3	2	5
It's not easy to let go of what you believe to be true	3	2	5
Happy to find and solve problems in science learning.	4	1	5
Total			40

The statistics used to describe data without trying to draw conclusions that apply to the broader audience or generalizations are called descriptive statistics. In this study, the data analysis used the mean, median, mode, standard deviation, minimum value, maximum value, percentage of acquisition score.

Table 2. Assessment of the development of science learning motivation.

No	Rating	Category
1	81- 100	Very Motivated
2	66- 80	Motivated
3	56- 65	Motivated Enough
4	41- 55	Less Motivated
5	0- 40	Not Motivated

## RESULTS

This research is a descriptive type of research. This research was conducted in class VIII of SMPN SATAP Taga Laga Buru in the odd semester of the 2020/2021 school year. Student name data can be seen in the attachment. The sample in this study was 36 students in the SMPN SATAP Taga Laga Buru. The data obtained in this study were questionnaire data. Data from the questionnaire were analyzed using descriptive statistics. The data on the acquisition of the science motivation profile can be seen in Table 5 and based on the indicators presented in Table 6. The following table presents the validation of the questionnaire by experts.

Table 3. Validation results

Aspect	Expert 1				Expert 2				Rater 1	Rater 2	Valid
	4	3	2	1	4	3	2	1			
1	√				√				4	4	Very valid
2	√				√				4	4	Very valid
3		√			√				3	4	Very valid
4	√				√				4	4	Very valid
5	√				√				4	4	Very valid
6	√					√			4	3	Very valid
7	√					√			4	3	Very valid
8		√				√			3	3	Very valid
9	√					√			4	3	Very valid
10	√					√			4	3	Very valid

Based on the validation of two experts, the questionnaire that had been compiled met the valid criteria. Questionnaires can be used to measure students' learning motivation when they study from home.

Table 4. Recapitulation of data acquisition of science learning motivation profile

Descriptive statistics	Value
Total students	36
Maximum Value	90
Minimum Value	52.5
mean	77.18
median	78.75
Mode	85.63
Standard Deviation	12.58

Table 4 reveals that the minimum score of students is 52.5, and the maximum is 90. The average student motivation when they study from home is 77.18. This finding data indicates that students' learning motivation when learning from home is motivated. This data is based on thirty-six science students.

Table 5. Profile categories of science learning motivation at SMPN SATAP Taga Laga hurry

Rating	Category	Frequency	Percentage(%)
81-100	Very Motivated	16	44.44
66-80	Motivated	17	47.23
56-65	Motivated Enough	3	8.33
41-55	Less Motivated	0	0
0-40	Not Motivated	0	0
Total		36	100

Based on the category 5 table above, the science learning motivation profile data obtained from class VIII students of SMPN SATAP Taga Laga Buru for the 2020/2021 school year are in the highly motivated category (44.44%) with a total of 16 students, the motivated category is (47.23%) with the number of 17 students, the category of moderately motivated (8.33%) with a total of 3 students, the category of less motivated and unmotivated (0%) of 36 students. The motivated category dominates the student category. There were no students who experienced poor motivation while studying from home.

Table 6. Student learning motivation based on motivation indicators

<b>Indicator</b>	<b>Earning Score</b>	<b>Maximum Score</b>	<b>Final score</b>
Persevere in the face of tasks.	553	720	76.81
Tenacious in dealing with difficulties in dealing with science lessons.	627	720	87.08
Interest in science lessons.	609	720	84.58
Enjoy working independently.	498	720	69.17
Get bored quickly on routine tasks in science subjects.	566	720	78.61
Students can defend their opinion in the science learning process.	534	720	74.17
It's not easy to let go of what you believe to be true	526	720	73.06
Happy to find and solve problems in science learning.	547	720	75.97

The findings in table 6 reveal that two motivation indicators reach the excellent category. Five indicators reach the good category. There is one indicator that has the lowest score, which is happy to work independently. The score obtained is 69.17. This data indicates that independent learning from home can not be done optimally by students

## DISCUSSION

Research Profile of learning motivation is essential for students in science learning. The learning motivation profile is the encouragement in students' personal who is influenced by the surrounding environment, namely parents and teachers, to attract something they want. In this study, the profile of science learning motivation is in the motivated category. The results of this study indicate that the profile of science learning motivation while studying at home for class VIII students of SMPN SATAP Taga Laga Buru sixteen students (44.44%) are highly motivated, seventeen students (47.23%) are motivated, three students (8.33%) of thirty-six students. Overall, the average value of the science motivation profile while studying at home is 77.18. It shows the profile of motivation to learn science while learning at home for SMPN SATAP Taga Laga Buru students in the 2020/2021 school year in the motivated category.

The results of the teacher's hard work in running a system of supervision and student learning while studying at home are excellent. The motivation profile proves this to learn science while learning at home for class VIII SMPN SATAP Taga Laga Buru in the motivated

category. Although teachers face many obstacles in carrying out their duties, such as providing subject matter that is limited by the time specified, it is very lacking and coupled with a lack of facilities such as student learning resources and also a lack of information sources as a supporting role to increase learning motivation with that. The teacher does various ways so that the motivation and enthusiasm of students in learning are huge. The profile of motivation can prove this to learn science with an average value of 77.18, so it can be concluded that the profile of motivation to learn science while studying at home is a class VIII student at SMPN SATAP Taga Laga Buru, with the highest category being motivated by a total of 17 students, the category highly motivated by a total of 16 students, a moderately motivated category with a total of 3 students and no less motivated and unmotivated categories. According to the findings of a study, 88.77 percent of participants believed that enjoyment in online learning was associated with well, motivation, and competence. However, 16.66 percent of respondents said that the pleasure of online learning might divert their attention away from their academics, resulting in distraction or time loss (Okada & Sheehy, 2020)

Based on the findings, it can be said that students are well motivated when they learn from home. The online learning system provides customized content for children based on their own experience and ability level, ultimately helping learners improve their learning motivation (Duffy & Azevedo, 2015). A study showed that the delivery of pleasurable and unpleasant activities was positively correlated to students' motivation, curiosity, and involvement (Tews et al., 2015). Although many cases reveal that students' motivation has decreased during a pandemic, in our opinion, not all students experience the same thing. Our findings indicate that students' motivation to learn science is still in the good category. It's just that in our results, there are indicators that get a low score out of the eight existing indicators. The indicator is happy to work independently. However, the Tenacious indicator in dealing with difficulties in dealing with science lessons obtains excellent results. It proves that although students have not learned independently, they still struggle to overcome these problems.

In the process of profiling science learning motivation, there are many ways that teachers and parents do to continue to give attention and supervision to students and their children. So that the increase in motivation to learn science while studying at home is a form of good cooperation between teachers and parents. Motivation is important because it is related to student learning outcomes (Damopolii et al., 2018). The cooperative relationship between teachers and parents has a significant impact on the motivation to learn science; under challenging circumstances, the teacher always works hard and professionally in carrying out his duties as a teacher. Increased motivation to learn science is also inseparable from the seriousness of parents to provide encouragement and supervision of their children. In this study, the profile of the motivation to learn science while studying at home was the class VIII SMPN SATAP Taga Laga Buru in the motivated category.

## CONCLUSION

Profile of motivation to learn science while studying at home for class VIII SMPN SATAP Taga Laga Buru for the academic year 2020/2021 in highly motivated 44.44%, motivated 47.23%, and moderately motivated 8.33%. Overall, the average value of the profile of motivation to learn science while studying at home is 77.18. Based on the results

of the research conclusions above, the authors would like to convey suggestions to those involved in the world of education to improve scientific performance and help develop a profile of science learning motivation. Therefore, it takes hard work and good cooperation between teachers and parents to create a motivation to learn science while studying at home for class VIII students of SMPN SATAP Taga Laga Buru in 2020/2021.

## REFERENCES

- Avila, E. C., & Genio, A. M. G. J. (2020). Motivation and learning strategies of education students in online learning during pandemic. *Psychology and Education Journal*, 57(9), 1608–1614. <https://doi.org/https://doi.org/10.17762/pae.v57i9.506>
- Azizah, N. H., Mahardika, I. K., & Prasetyaningsih, A. (2019). Pengaruh model pembelajaran discovery learning terhadap hasil belajar siswa pada materi usaha di SMP Negeri 3 Jember. *Seminar Nasional Pendidikan Fisika 2019*, 2013–2206.
- Bennett, S., Agostinho, S., & Lockyer, L. (2017). The process of designing for learning: understanding university teachers' design work. *Educational Technology Research and Development*, 65(1), 125–145. <https://doi.org/10.1007/s11423-016-9469-y>
- Cleopatra, M. (2015). Pengaruh Gaya hidup dan motivasi belajar terhadap prestasi belajar matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 5(2), 168–181. <https://doi.org/10.30998/formatif.v5i2.336>
- Damopolii, I., Lefaan, P. T., & Manga, M. (2018). Hubungan Motivasi Belajar dengan Hasil Belajar Biologi Siswa Di SMP 21 Rendani Manokwari. *Prosiding Seminar Nasional Pendidikan Biologi*, 1(1), 427–430.
- Damopolii, I., Wambrauw, H. L., & Mutmainah, S. (2021). Students' perceptions of the full-day school application: Its relationship toward science learning motivation. *Jurnal Pendidikan Dan Pengajaran*, 54(1), 91–100.
- Delen, E., & Liew, J. (2016). The use of interactive environments to promote self-regulation in online learning: A literature review. *European Journal of Contemporary Education*, 15(1), 24–33.
- Duffy, M. C., & Azevedo, R. (2015). Motivation matters: Interactions between achievement goals and agent scaffolding for self-regulated learning within an intelligent tutoring system. *Computers in Human Behavior*, 52, 338–348. <https://doi.org/10.1016/j.chb.2015.05.041>
- Elton-Chalcraft, S., & Mills, K. (2015). Measuring challenge, fun and sterility on a 'phunometre' scale: evaluating creative teaching and learning with children and their student teachers in the primary school. *Education 3-13*, 43(5), 482–497. <https://doi.org/10.1080/03004279.2013.822904>
- Giannakos, M. N., Krogstie, J., & Aalberg, T. (2016). Video-based learning ecosystem to support active learning: application to an introductory computer science course. *Smart Learning Environments*, 3(1), 11. <https://doi.org/10.1186/s40561-016-0036-0>
- Ginanti, N. W., Solikin, A., & Nurrohman, H. (2017). Bimbingan kelompok untuk meningkatkan motivasi peserta didik SMPN 1 Selat Kuala Kapuas. *SULUH Jurnal Bimbingan Dan Konseling*, 3(2), 36–41.
- Hodges, C., Moore, S., Lockee, B., Trust, O., & Bond, A. (2020). *The Difference Between Emergency Remote Teaching and Online Learning*. EDUCAUSE Review. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency->

remote-teaching-and-online-learning

- Korhonen, A.-M., Ruhalahti, S., & Veermans, M. (2019). The online learning process and scaffolding in student teachers' personal learning environments. *Education and Information Technologies*, 24(1), 755–779. <https://doi.org/10.1007/s10639-018-9793-4>
- Kurniawan, R. P., Damopolii, I., & Sirait, S. H. K. (2021). The correlation between biology teacher learning strategies during the Covid-19 pandemic on student motivation. In *AECON* (pp. 299–305).
- Nicolete, P. C., Herpich, F., Junior, E. T. de O., Tarouco, L. M. R., & Silva, J. B. da. (2021). Analysis of student motivation in the use of a Physics Augmented Remote Lab during the Covid-19 pandemic. *2021 IEEE Global Engineering Education Conference (EDUCON)*, 1040–1047. <https://doi.org/10.1109/EDUCON46332.2021.9454104>
- Okada, A., & Sheehy, K. (2020). Factors and Recommendations to Support Students' Enjoyment of Online Learning With Fun: A Mixed Method Study During COVID-19. *Frontiers in education*, 5. <https://doi.org/10.3389/feduc.2020.584351>
- Papamitsiou, Z., Lunde, M., Westermoen, J., & Giannakos, M. N. (2021). Supporting Learners in a Crisis Context with Smart Self-Assessment. In D. Burgos, A. Tlili, & A. Tabacco (Eds.), *Radical Solutions for Education in a Crisis Context* (pp. 207–224). Springer, Singapore. [https://doi.org/10.1007/978-981-15-7869-4\\_14](https://doi.org/10.1007/978-981-15-7869-4_14)
- Pappas, I. O., & Giannakos, M. N. (2021). Rethinking Learning Design in IT Education During a Pandemic. *Frontiers in education*, 6. <https://doi.org/10.3389/feduc.2021.652856>
- Purnomo, J., Susongko, P., & Arfiani, Y. (2019). Model Pembelajaran Problem Based Learning dengan Metode Discovery Learning terhadap Aktivitas dan Hasil Belajar Siswa. *JPMP (Jurnal Pendidikan MIPA Pancasakti)*, 3(2), 81–85. <https://doi.org/10.24905/jpmp.v3i2.1414>
- Ritonga, R., & Ramadhani, S. P. (2020). Survey of Student Motivation in Online Learning During the Covid-19 Pandemic. *Journal of Social Science and Humanities*, 3(6), 10–17. <https://doi.org/10.26666/rmp.jssh.2020.6.2>
- Tews, M. J., Jackson, K., Ramsay, C., & Michel, J. W. (2015). Fun in the College Classroom: Examining Its Nature and Relationship with Student Engagement. *College Teaching*, 63(1), 16–26. <https://doi.org/10.1080/87567555.2014.972318>
- Tumanggor, Y. V., Sujane, R., & Mariawan, M. (2018). Penerapan Model Pembelajaran Kooperatif Tipe JIGSAW untuk Meningkatkan Motivasi dan Hasil Belajar Siswa pada Pembelajaran Fisika Siswa Kelas XI MIPA di SMA Negeri 2 Singaraja. *Jurnal Pendidikan Fisika Undiksha*, 8(2), 31–44.
- Upoyo, A. S., & Sumarwati, M. (2011). Analisis faktor-faktor yang mempengaruhi motivasi mahasiswa profesi ners Jurusan Keperawatan UNSOED Purwokerto. *Jurnal Keperawatan Soedirman*, 6(2), 81–87.