



## **MATHEMATICS HOMEWORK: IS IT STILL NECESSARY?**

Aprian Subhananto<sup>1</sup>, Wafiq Nurul Huda<sup>2</sup>, Malik Ibrahim<sup>3</sup>, Rita Wahyuni<sup>4</sup>  
<sup>1</sup>Universitas Bina Bangsa Getsempena, Banda Aceh, Indonesia <sup>2</sup>Universitas Negeri  
Yogyakarta, Indonesia <sup>3</sup> Universitas Negeri Yogyakarta, Indonesia  
<sup>4</sup>Universitas Bumi Persada, Indonesia

\* Corresponding email: [aprian@bbg.ac.id](mailto:aprian@bbg.ac.id)

### **ABSTRACT**

In recent years, it has been debated whether homework for mathematics subjects is still necessary or not. Mathematics is a science that requires a lot of practice and repetition so that the material communicated can be mastered by students perfectly so it requires practice in the form of homework with clear, useful goals and stimulating creativity and collaboration in order to be able to do it. However, on the other hand, homework in mathematics will reduce quality time at home, especially if homework simply moves activities from school to home. We know that mathematics is a very difficult subject and everyone avoids interacting and communicating with mathematics.

This article was written using the library research method. Library materials were searched using the Google Search Engine for scientific literature. The data collected relates to homework carried out by elementary school students. Data analysis uses Huberman's model which includes data reduction, data display and data verification stages. The results obtained are how to search for literature reviews, namely using Google Scholar. The search words used were Homework, Mathematics Homework, . There are 2 things that can be done to support homework activities in elementary schools, namely assignment methods according to student characteristics, and parental guidance. The assignment method can be used by teachers to train students' learning at home. Parental guidance can be done to bring feelings and goodness closer to the family.

**Keywords:** *Homework, mathematics lesson, challenge of homework, homework assignment method, parental guidance,*

## INTRODUCTION

Homework is an activity where the teacher gives questions to be done at home (outside class hours) either alone or in groups (Azizah, 2018). This is done to provide students with work experience, foster the desire to carry out experiments, research and investigations so as to enrich students' experiences. Giving homework to students is an effort to encourage students to be actively involved in learning activities and fully understand what the teacher has conveyed (Masalimova, et al, 2023). Giving homework includes the frequency of homework, in terms of the intensity or frequency of homework and the amount given by the teacher to students, the quality of homework, students' persistence in doing it, and students' questions. (negru and sava, 2023).

However, homework has challenges and controversy in its application (Dolean and Lervag, 2021). These challenges and controversies include additional burdens for students (Pllana, 2022), The Gender Gap in Homework (Dunatchik and Park, 2022), Difficulty Maintaining Students' Motivation (Chowkase, et al 2022), Difficulty Finding Balance (Dhawan, 2020), dan Pengaruh Teknologi dan Gaya Hidup Modern (Asimah and Dzogbede, 2020). In the first challenge and controversy regarding the additional burden on students, homework becomes an additional burden on the routine of completing learning at school even though at this age students should have free time to relax and explore interests. In the end, students do not have time to play and rest due to academic pressure and extracurricular activities, students become stressed and additional pressure on students, especially if the assignment is complex such as mathematics lessons or requires in-depth understanding of the material, reduced time interacting with family or peers so that it has a negative impact on students' social development and reduces time sharing positive experiences with those closest to them. Apart from that, students will also experience a decrease in motivation and creativity because students' focus is divided between homework and other activities. This is further exacerbated by parents' overly critical approach or resulting in unrealistic expectations, especially regarding mathematics homework, this can increase stress and reduce stude.

Next, the second challenge and controversy is the Gender Gap in Homework. These challenges and controversies occur in several communities where it has become a culture and norm that women have the obligation to complete housework first before they can complete other work. Even though mathematics is a subject that requires precision and perseverance, it will become an obstacle if it is done without focus and in a short time. The third challenge and controversy is the difficulty of maintaining student motivation. Parents have additional duties to maintain student motivation at home in motivating them to do homework so that in the end there is conflict between

students and their parents when there is no agreement on learning. There are several things that cause conflict of agreement, including unclear goals and benefits in homework, lack of understanding between parents and students in doing homework, lack of communication between parents, students and teachers, to trivial things such as postponing homework. because they are waiting for the right time.

The third challenge and controversy is the Difficulty of Finding Balance. The balance between giving students the freedom to grow and develop and involving them in homework is a complex issue. Too much homework can come at the expense of playtime and creative activities, while cutting back on homework completely can hinder the development of important life skills.

The final challenge and controversy is the Influence of Technology and Modern Lifestyle. Technological developments have profoundly shaped our world, accelerating change and having a significant impact on every aspect of life. In embracing the future, ethical and security challenges need to be addressed wisely to ensure that technological developments continue to provide positive benefits for global society. AI (art intelligence), which is part of technological developments, brings a number of challenges and ethical considerations that need to be taken seriously, including the ease of students answering questions without having to think. This is serious because AI does not consider emotional conditions, understanding, and can provide biased explanations. Mathematics as a hierarchical subject that requires layered understanding, requires students to be able to develop knowledge by using previous understanding which in AI technology does not require this. Excessive use of technology makes a person spoiled and addicted to technological advances which ultimately become a modern lifestyle. The absence of a policy on individual use of technology will have an impact on laziness and time management that is not in accordance with predetermined targets.

Another problem that arises from this homework is that there is no homework that suits the characteristics of the students and there is no good cooperation and communication. This affects the effectiveness and conflict of giving homework, especially in mathematics lessons.

## **METHODS**

This article was written using the library research method. This research was carried out by searching for various library materials (Sakti, 2020). Library materials were searched using Google Scholar. Data was collected by collecting various research articles (Sakti, 2021). The data collected relates to homework carried out by elementary school students. Data analysis uses Huberman's model which includes data reduction, data display

and data verification stages. The author summarizes and discusses articles that have been searched to be related to the research topic (Sakti, 2023).

## **RESULTS AND DISCUSSION**

### **Result**

The research results used to answer the first research question are how to search for literature reviews, namely using Google Scholar. The search words used were homework and elementary school. Search results are sorted into study articles. There are 1,240,000 articles found on Google Scholar. The oldest article was written in 1960 and published by the University of Chicago with the title Does Homework Help? A Review of Research. The article had a title about whether homework helps and was written as a literature review. This article has been cited 162 times (Goldstein, 1960).

### **Discussion**

#### **Homework Assignment Method According to Student Characteristics**

Before giving homework, teachers should know the characteristics of their students (Kalogrides, Loeb, and Béteille, 2013). This can be done by carrying out diagnostic tests in the form of questionnaires to track student learning characteristics (Bakhrudin, et al, 2023). After knowing the characteristics of students, assignment methods can be used such as task differentiation, integrating homework with students' hobbies and interests, providing project choices according to students' interests, forming collaboration with peers and parents, clear work instructions and learning objectives, assessment and awards in accordance with the results obtained by students (Linda et al,2023). In this way, the challenges and controversies of giving homework disappear because students will happily do homework in the form of projects that students can choose according to their interests and hobbies even though what students are doing is mathematics. (summer, et al, 2023)

### **Parental Guidance**

Several schools are currently making agreements with parents regarding the implementation of their students' learning at school (Maspul and Amalia, 2021). Parents are asked to sign that carrying out learning is a shared responsibility and requires necessities. Apart from the agreement, parents are also given the task of assisting students at home. There are several curricula prepared by schools for parents so that even outside of school, students are still learning. (Timberly, et al, 2016).

A good school will provide homework that guides students and parents to collaborate with each other. The time is adjusted to each other in daily activities. That's why parental data is really needed to know the characteristics of parents in accompanying students at home considering that the role of parents is very important in guiding and motivating students so that they are always enthusiastic about online learning and parents are also obliged to accompany and assist their students when studying and doing assignments. (Puspita, 2021). Siswayang mengerjakan tugas sekolah akan mengalami kemudahan dalam menjawab pertanyaan yang telah ditulis di buku karena adanya bantuan dari orang tua. Kegiatan homework harus dilakukan para siswa sekolah dasar dengan dibimbing orang tuanya masing-masing.

## **CONCLUSION**

Homework in mathematics subjects is still very much needed to develop and enrich students' experiences in the process of improving mathematical abilities, skills and attitudes. Based on the literature review, this homework will address all the challenges and controversies (Additional Burden for Students, Gender Gap in Homework, Difficulty Keeping Students Motivated, Difficulty Finding Balance, and the Influence of Technology and Modern Lifestyle) with the Method Providing Homework According to Student Characteristics, and parental guidance.

## **ACKNOWLEDGEMENT**

The author would like to thank Prof. Ali Mustadi who has encouraged us (the authors) to be able to publish scientific articles. Don't forget to thank my friends in class B Basic Education at Yogyakarta State University who have provided a lot of support to be able to complete their studies on time.

## **REFERENCES**

- Asimah, A.P. and Dzogbede, O.E. (2020). Internet Usage and Its Effect on the Lifestyle of University Students. *Information and Knowledge Management*, 10(7), 35-44
- Azizah, D.M. (2018). The Varieties of Homework Given by English Teachers of Vocational Schools. *Indonesian EFL Journal*, 4(2), 48-55.
- Bakhruddin, et al. (2023). Exploring Diagnostic Assessment as an Instrument for Learning Improvement. *PROGRESIVA: Jurnal Pemikiran dan Pendidikan Islam*, 12(1), 53-70.
- Chowkase, A. A., et al, (2022). Online learning, classroom quality, and student motivation: Perspectives from students, teachers, parents, and program staff. *Gifted Education International*, 38(1), 74-94.

- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49(1), 5-22
- Dolean, D.D, and Lervag, A. Variations of homework amount assigned in elementary school can impact academic achievement. Variations of homework amount assigned in elementary school can impact academic achievement, 90(2), 280-296.
- Dunatchik, A., & Park, H. (2022). Racial and Ethnic Differences in Homework Time among U.S. Teens. *Sociological Perspectives*, 65(6), 1144-1168
- Goldstein, A. (1960). Does homework help? A review of research. *The Elementary School Journal*, 60(4), 212–224.
- Kalogrides, D., Loeb, S., & Béteille, T. (2013). Systematic Sorting: Teacher Characteristics and Class Assignments. *Sociology of Education*, 86(2), 103-123.
- Linda, D.H, et al. (2020) Implications for educational practice of the science of learning and development, *Applied Developmental Science*, 24(2), 97-140.
- Masalimova, A.R. et al (2023). Exploring the impact of homework assignments on. achievement and attitudes in science education, *EURASIA Journal of Mathematics, Science and Technology Education*, 19(4), 1-8
- Maspul, K.A. and Amalia, F. (2021). The Role of Parents in the Implementation of Hybrid Learning Toward School Normalisation in Indonesia. Retrieved from: [https://www.researchgate.net/publication/354872487\\_The\\_Role\\_of\\_Parents\\_in\\_the\\_Implementation\\_of\\_Hybrid\\_Learning\\_Toward\\_School\\_Normalisation\\_in\\_Indonesia](https://www.researchgate.net/publication/354872487_The_Role_of_Parents_in_the_Implementation_of_Hybrid_Learning_Toward_School_Normalisation_in_Indonesia)
- Negru I, Sava S. (2023). Homework’s Implications for the Well-Being of Primary School Pupils—Perceptions of Children, Parents, and Teachers. *Education Sciences*, 13(10), 1-24
- Puspita, H. D. (2021). Role of Parents in Educating Children During Online Classes. *Etude: Journal of Educational Research*, 1(2), 69–75
- Sakti, B. P. (2020). Efforts to Improve Professional Teachers in Facing Education in the Era of Globalization. *Attadib: Journal of Elementary Education*, 4(1), 74–83.
- Sakti, B. P. (2021). The Role of All Parties in Facing the Effects of Online Learning During the Covid 19 Pandemic. Retrieved from: <https://prosiding.ikipgribojonegoro.ac.id/index.php/Prosiding/article/view/1145/449>
- Sakti, B.P. (2023). Types of Authentic Learning Assessment. *Attadib: Journal of Elementary Education*, 6(2), 342–350.
- Summer, R., et al. (2023). Support for Working Students: Understanding the Impacts of Employment on Students’ Lives. *Journal of College Student Retention: Research, Theory & Practice*, 0(0).
- Timberly, et al. (2016). Identifying Barriers: Creating Solutions to Improve Family Engagement. *School Community Journal*, 26(2). 161-184.