

**AN EX POST FACTO STUDY: STUDENT' LEARNING STYLES IN BIOLOGY EDUCATION AT
UNIVERSITAS JAMBI**

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ARTICLE INFO:

ABSTRACT

Article History

Received December 1st, 2022

Revised July 5th, 2023

Accepted August 8th, 2023

Keywords:

*learning habit, work method, delay
avoidan*

This study used an ex-post facto research methodology with a descriptive approach to assess the learning habits of biology education students at Universitas Jambi in regards to 'Work Method' and 'Delay Avoidance'. The study demonstrated similar levels of proficiency (satisfactory), with 'Work Method' scoring a 75.00% and 'Delay Avoidance' slightly reaching a score of 75.70%. These data indicated that there is a dependable yet enhanceable basis in learning habits. The study highlights the need of employing educational practices that promote organized learning and efficient time management, with the goal of enhancing students' learning habits and academic progress.

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How to Cite:

Mursyd, D., Sembiring, D.A.E.P., Yusuf, M., Rangkuty, S.M. (2023). An ex post facto study: student' learning styles in biology education at Universitas Jambi. *Jurnal Pelita Pendidikan*, 11(3). 092-096.

INTRODUCTION

The COVID-19 epidemic has brought about a period of exceptional difficulties for the worldwide education sector, and Indonesia has been significantly affected by this. The unexpected crisis required a quick shift to remote learning, which disrupted conventional education institutions and revealed significant problems such as the digital divide, accessibility issues, and worries about the overall educational standard. According to the latest report from UNICEF (2021), the pandemic has had a negative impact on children's education in Indonesia, affecting students at all levels and causing disruption to the learning process for millions of children. Additionally, it has also limited their ability to receive important services. The current scenario has worsened pre-existing disparities pertaining to gender, poverty, and disability, giving rise to apprehensions regarding the lasting impact on outcomes of childhood development.

Concurrently, this time frame has brought about significant changes in education, expediting the incorporation of technology and promoting inventive approaches to teaching and learning. The extensive implementation of digital learning, together with initiatives aimed at achieving universal internet access, represents a transition towards educational experiences that are more individualized and adaptable. Nevertheless, the task of guaranteeing fair and equal access to technology and closing educational disparities remains ongoing (UNICEF, 2021). The World Bank (2021) emphasizes the seriousness of the decline in learning that has occurred during this time, predicting substantial effects on future income and educational achievement as a result of school closures.

Students in Indonesia have experienced significant stress due to the transition to remote learning. A study conducted by Livana et al. (2020) found that boring teaching techniques and overpowering learning assignments were significant sources of stress for 1,129 learners from different provinces throughout the pandemic. Furthermore, the demand to acquire comprehensive knowledge within constrained timescales has heightened this stress.

This study specifically examines the learning habits of biology education students at Universitas Jambi during the post-pandemic era, which is a crucial part of educational reforms. The sudden transition to online learning, which involves a significant alteration in how education is delivered and how students interact with learning materials, has required the acquisition of new abilities such

as digital literacy, effective time management, and self-motivation. The epidemic has underscored the significance of adaptability and resilience in the process of learning, as students encounter both technical and psychological obstacles in online learning settings.

According to Djaali (2014), learning habits refer to the approaches or techniques that students develop and internalize through their academic activities. Aunurrahman (2010:185) perceives these habits as enduring learning behaviors that typify students' educational activities. These habits, whether deliberate or accidental, develop into exact and instinctive actions. Djaali (2014) classifies learning habits into two dimensions: Delay Avoidance (DA) and Work Methods (WM), with a focus on timely completion of tasks and the utilization of efficient learning techniques.

Delay Avoidance (DA) is the practice of promptly finishing academic activities, actively avoiding circumstances that could impede task completion, and minimizing distractions that hinder focus while learning. This can also be referred to as promptness in learning. Work Methods (WM) pertain to an individual's consistent patterns of utilizing effective and efficient learning methods (procedures) when carrying out academic work and acquiring new skills. This can also be denoted as pedagogical approaches in education (Djaali, 2014).

This research aimed to examine the shifting learning patterns of biology pre-service teachers at Universitas Jambi, analyzing the extent of their transformation and the potential impact on future educational approaches. Gaining insight into these dynamic learning patterns is essential for devising focused interventions in the post-pandemic period, hence enhancing the durability and efficacy of educational methodologies. The results are anticipated to provide significant perspectives for creating educational interventions and techniques that cater to the requirements of upcoming educators in a swiftly evolving educational setting.

METHOD

The research study was conducted in June 2023 at the Biology Education Study Program, Faculty of Teacher Training and Education, Universitas Jambi. The purpose of the study was to investigate the learning patterns of 200 biology education students in the period following the pandemic. This study utilized the theoretical

framework established by Djaali in 2014 to investigate the components of learning habits that are relevant to the current educational setting. The primary instrument for data collection was a carefully crafted questionnaire, developed based on the principles and ideas presented in Djaali, s work (2014). The questionnaire comprised 28 items, each specifically crafted to evaluate different aspects of students' learning habits, encompassing elements of Delay Avoidan (*Developing a study timetable and executing it, Methods for home-based studying, Methods for engaging in educational activities inside a university setting, Methods for engaging in remote learning*) and Work Method (*Learning awareness, Task completion, Allocation of study time, Concentration*).

The participants' responses were assessed utilizing a 4-point Likert scale, which encompassed a spectrum from 'strongly disagree' to 'strongly agree'. This enabled a comprehensive and subtle comprehension of the students' inclinations and predilections towards learning. The data was analyzed descriptively to show the percentage size of each student's learning habits indicator.

RESULTS AND DISCUSSION

For assessing students' learning habits, a quantifiable measure was used to establish a precise framework for assessment. The present study utilized a categorization metric developed by Purwanto (2017), enabling the classification of students' learning habits based on the percentage scores obtained from the distributed questionnaire (table 1). The scores were determined by combining individual replies and then converting them into a percentage that represents both the frequency and quality of each indicator of the learning habits.

Table 1. Learning Habit Category (Purwanto, 2017)

Percentage	Category
86 - 100 (%)	Excellent
76 - 85 (%)	Good
60 - 75 (%)	Satisfactory
55 - 59 (%)	Below Average
< 55 (%)	Very Below Average

A comprehensive analysis of the learning habits of biology students based on many variables, offering a complete and intricate understanding of their study habits (table 2). A continuum of scores is noticed within the 'Work Method' category. The indicator of developing a

study timetable and executing it resulted in an achievement of 70.75%, which classified as 'Satisfactory'. This indicates that although most students are utilizing organized study schedules, there is potential for improvement in order to elevate this practice to a 'Good' level. The methods for home-based studying received a 'Satisfactory' rating of 75.58%, suggesting a consistent but potentially enhanced level of involvement with studying outside of regular campus environments.

Significantly, the methods for engaging in educational activities inside a university setting achieved a score of 81.78%, placing them in the 'Good' classification. The higher ranking indicates a greater proficiency in implementing study techniques within organized environments, rather than in the self-directed, home-based setting. The methods for engaging in remote learning also achieved a 'Satisfactory' rating of 75.5%, which corresponds to the wider difficulties experienced worldwide in adjusting to online educational settings. The learning style indicator also achieved a 'Satisfactory' rating of 71,38%.

In the 'Delay Avoidance' category, the indicators display a varied range of proficiency. The level of learning awareness is deemed 'Satisfactory' with a score of 72.46%, indicating a modest level of recognition and reactivity towards learning demands. The task completion rate is notable, with a 'Good' score of 76.71%, reflecting students' proficiency in efficiently completing their academic obligations. The allocation of study time, yielding a score of 75.54%, and the level of concentration, achieving a score of 78.08%, both fall within the 'Satisfactory' and 'Good' ranges, respectively. These findings indicate that although students exhibit great concentration and time management skills, there is still room for additional improvement.

In general, the learning habits of biology students were classified as satisfactory, both in terms of work method and delay avoidan (table 3). The 'Work Method' category has achieved a satisfactory rating of 75.00%. This indicates that, on average, the students demonstrated satisfactory techniques and behaviors in relation to their approach to work and study. It suggests that most students have a good understanding of efficient study procedures and are likely using a systematic approach to their learning assignments. However, there is still room for improvement. This outcome facilitates a debate about incorporating more sophisticated study techniques to enhance the learning process. Students with strong study habits are more likely to succeed academically because they meet key

learning characteristics. Effective study habits are essential for pushing students to succeed

academically (Arsoniadi, et al., 2021).

Table 2. Result of Biology Students' Learning Habit per Indicator

Learning Habit	Indicators	Result (%)	Category
Work Method	Developing a study timetable and executing it	70,75	Satisfactory
	Methods for home-based studying	75,58	Satisfactory
	Methods for engaging in educational activities inside a university setting	81,78	Good
	Methods for engaging in remote learning	75,5	Satisfactory
	Learning style	71,38	Satisfactory
Delay Avoidan	Learning awareness	72,46	Satisfactory
	Task completion	76,71	Good
	Allocation of study time	75,54	Satisfactory
	Concentration	78,08	Good

The learning habit component referred to as "work method" encompasses the strategies and techniques employed in the process of studying. The indicators included in the Developing a study timetable and executing it, Methods for home-based studying, Methods for engaging in educational activities inside a university setting, Methods for engaging in remote learning. The Outcome-based Education (OBE) curriculum emphasizes learner-centered education, necessitating active student participation during university learning sessions. Therefore, it is extremely advantageous to effectively utilize educational methods such as in-campus and remote learning, together with home study practices, in order to improve knowledge, attitudes, and learning habits (Sitohang et al., 2021).

The 'Delay Avoidance' score, which stands at 75.70%, is likewise considered satisfactory. This suggests that students typically demonstrate a tendency to effectively allocate their time and promptly finish assignments without any needless delay. Nevertheless, the close proximity of this score to the lower threshold of the 'Good' category implies that although students are generally successful in avoiding procrastination, there is still potential for enhancement. Further studies in research could focus on the psychological foundations of delay avoidance, analyzing the significant roles that intrinsic motivation and self-regulation have in achieving academic achievement. The cultivation of these characteristics is crucial, as they are intricately connected to efficient time allocation and the mitigation of procrastination. There is a strong

necessity for the educational system to intervene, providing guidance to pupils in developing abilities such as self-organization and goal prioritization. If students do not acknowledge the advantages of effective time management, they may not acquire these essential skills on their own (Alvarez Sainz, et al., 2019). Therefore, it is imperative to implement focused educational interventions in order to develop these crucial skills, so strengthening the foundation for continuous learning and success.

Table 3. Result of Biology Students' Learning Habit in Total

Learning Habit	Result per Category (%)	Category
Work Method	75,00	Satisfactory
Delay Avoidan	75,70	Satisfactory

Delay avoidance involves prompt task completion, avoiding distractions, and eliminating study-disrupting stimuli (Djaali, 2014). Learning awareness, attentiveness, task completion, and study time indicate delay avoidance in research. With more understanding of the importance of learning, pupils develop a strong enthusiasm and good learning habits.

Increasing attentiveness, finishing projects on time, and controlling study schedules helps improve delay avoidance learning habits. Turning off social media notifications, eliminating mobile phone use, and not talking during study can help focus. Students with strong concentration skills may learn in multiple environments and times,

suggesting that focus affects learning results (Sitohang et al., 2021). Time management helps students organize their study schedules and develop more disciplined study habits.

CONCLUSION

This study established the fundamental significance of 'Work Method' and 'Delay Avoidance' as factors that determine good learning habits. Although students in these fields often perform adequately, the findings indicate a chance to improve these fundamental methods. To make such breakthroughs, it is important to enhance students' capacity to effectively manage their study schedule and sustain concentration, as these skills are essential for a disciplined learning methodology. The educational framework should prioritize the cultivation of tactics that foster certain habits, so enhancing the organization and effectiveness of the study environment.

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