

The comparison of students' academic stress in biology class at public and private high schools

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ABSTRACT

Students are demanded by school assignments, and many of them feel under pressure when learning biology. This situation is a trigger for academic stress which has an impact on student achievement. This study aims to identify and compare the factors that influence academic stress on students studying biology at the senior high school level. The research method used was an ex post facto survey using a sample of 54 students with an age range between 16-18 years. Data were obtained through a questionnaire with 9 scales of answer choices and interviews. The results showed that the level of preference for biology subjects for both public and private high school students was quite good, but most students experienced academic stress with a fairly high category in terms of motivation, self-confidence, the education system, teachers, and school conditions. This research implies that teachers are expected to create learning strategies by paying attention to the psychological conditions of students so that student learning outcomes can be maximized.

Keywords: Biology class, private senior high school, state senior high school, students' academic stress

INTRODUCTION

Academic stress is one of the main problems experienced by students, especially high school students who have a lot of academic demands (Safiany & Marytmi, 2018). This is in line with Bedanta's (2020) statement that one of the problems of public high school students and private high school students is academic stress. Academic stress is defined as the kind of stress occurring in the school environment. The large number of academic demands causes students to experience academic stress (Barseli et al., 2020). Stress experienced by high school students is caused by competition in achieving learning outcomes (Aza et al., 2019; Barseli et al., 2018). Academic stress occurs when expectations for achieving academic achievement increase, both from parents, teachers, and peers. These expectations often do not match students' abilities, causing psychological pressure that affects learning achievement at school. Therefore, the academic stress experienced by students should become a concern because it can affect the educational process.

Biology class requires a high level of understanding. A high level of understanding refers to biological concepts that are not just memorized but understood correctly to avoid misconceptions (Wulandari et al., 2021). The high demand for memorization and understanding in a biology subject as well as some abstract biology lessons is one of the factors in students' difficulties in learning biology (Dewantara et al., 2020; Suryanda et al., 2020). This often makes students feel stressed and burdened. The difficulties faced by students when learning biology can trigger academic stress. Academic stress in biology class can come from various sources such as the topic being studied, parents' demands, curriculum demands, teacher strategies in teaching, and competition in biology values between peers. The impacts that can be caused by students who experience stress in studying biology include students having low learning motivation and low self-efficacy, which results in high levels of anxiety experienced by students and decreased learning outcomes. This is in line with Rinawati & Sucipto's (2019)

statement who found that stress experienced by students can reduce the level of student motivation to learn, so it has an impact on the learning outcomes.

Various factors cause academic stress experienced by students, starting from internal factors that come from within the student themselves and external factors that come from the student's environment. Academic stress is not only influenced by factors from within the individual (internal) but can also be influenced by factors from outside (external). Internal factors consist of self-efficacy, hardiness, and motivation while external factors consist of social support (Oktavia, 2019).

Based on the description above, research was conducted to identify and compare the factors that influence academic stress in students studying biology in public high schools and private high schools.

METHOD

This is a descriptive research carried out in October 2022. The research method used is an ex post facto survey. Respondents are high school students of the following criteria:

1. Students who participate actively in classes
2. Students who participate passively in classes
3. Students who have difficulties working on Biology assignments
4. Students who are on time in submitting Biology assignments
5. Students with physical limitations
6. Students who are often absent from Biology classes

The total number of respondents who were willing to take part in the research stages until the end was 54 students with an age range of 16 - 18 years. Of the 54 students, 19 students came from Public High Schools consisting of 12 male students and 7 female students. From the Private High School, there are 35 students consisting of 20 male students and 15 female students.

High Schools selected as samples are high schools that have achievements at the local and

national level, such as in the National Science Olympiad (OSN), National Biology Fast Accuracy Competition, Grand Science Olympiad, and the like. These factors are the level of students' preferences for biology subjects, motivation, self-confidence, personality, anxiety, education system, teachers, treatment of friends, school conditions, physical condition, and family. Interviews were conducted individually using an interview format that covers all factors that cause student academic stress.

Data obtained either through a 1-9 scale questionnaire or interviews on students' level of preference for biology subjects are categorized as follows:

Scale 1-3 is in the low category

Scale 4-6 is in the moderate category

Scale 7-9 is in the high category

The percentage of students preferences for biology subjects is calculated based on the number of students in each category using the following equation:

$$\text{Percentage} = \frac{\text{The number of respondents in one category}}{\text{The number of all respondents}} \times 100\%$$

Meanwhile, the data obtained on the academic stress experienced by students when learning biology through a 1-9 scale questionnaire was categorized as low, medium, and high. The interview data were analyzed descriptively, and the data were grouped based on the number of problems contained in each factor based on the statements that have been presented. If each factor has a problematic statement > 1 then it is included in the "there is a problem" group. The grouping results are then calculated using the following equation:

$$\text{Percentage} = \frac{\text{The number of problems in each aspect}}{\text{The number of all respondents}} \times 100\%$$

The percentage is then categorized. The categorization of a percentage of academic stress experienced by students when learning biology was categorized based on Madsidjo (1995).

RESULTS AND DISCUSSION

Different school characteristics have variations in factors that cause academic stress. Academic stress is a stressful condition caused by academic stressors (sources of academic stress). Both public and private high schools have a variety of academic stressors. Academic stress experienced by students in learning can hinder student development. The academic stress experienced by students cannot be separated from several factors that influence it, one of which is the student's preferences for the subject. The level of student preference for Biology Subjects can be seen in Figure 1.

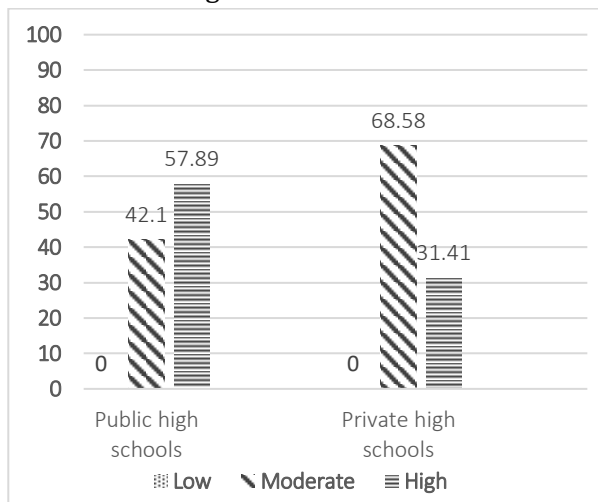


Figure 1. The percentage of student preferences for Biology Subjects in Public and Private High Schools.

Students' preferences for biology subjects

The results of the questionnaires reveal that the level of student preference for biology subjects, both in public and private high schools is diverse. However, in both public and private high schools, the level of student preference for Biology subjects can be seen in two categories, namely the moderate and high categories. There are no students who like biology subjects in the low category. This can be understood because Biology teaching material is very close to human life (Aroyandini et al., 2020; Rahmat, 2010) and the material is relatively real.

The percentage of students liking biology subjects in public high schools in the medium category is 42.10% and in the high category is

57.89%, while in private high schools in the moderate category, it is 68.58% and in the high category it is 31.41%. Most students like biology subjects because students prefer memorization subjects compared to calculation subjects. Nowadays, arithmetic subjects are considered to be complicated subjects so students do not like them (Rismawati & Khairiati, 2020).

If you compare the percentage of students at each level of preference, in Public High Schools the percentage of students with a high level of preference is greater than the percentage of students with a moderate level of preference. On the other hand, in private high schools, the percentage of students with a high level of preference is lower than the percentage of students with a moderate level of preference. These results illustrate that in public high schools, the level of student preference for Biology subjects is higher than students in private high schools. This happens because most of the goals held by public high school students are related to Biology subjects such as health workers. Posumah et al., (2021) suggest that a person's aspirations for the future determine interest in something. In contrast, in private high schools, only a few students have dreams related to the field of biology, they tend to have more dreams that have nothing to do with the field of biology, such as architects, chefs, soldiers, police, pilots, and artists. The results of the interviews show that the majority of students with aspirations that are not much related to Biology have the mindset that biology subjects are only an obligation for science students that must be completed to fulfill the Minimum Mastery Criteria (KKM).

Apart from such ideals, there are differences in the learning conditions of public high schools and private high schools, including innate factors such as fun biology tutors and junior high school biology teachers. This is in line with Ahmad's (2019) statement that teachers have a role in students' learning interests. Furthermore, the presence of the teacher in the class has an important role in the level of student

interest in biology subjects because this will have an impact on the learning experience and learning outcomes. This is in line with Dewi and Yunarsih's (2019) statement that the presence of teachers during learning has a fairly optimal role in learning activities to achieve high learning achievement. Then, students consider Biology as a fun subject because they study living creatures such as plants, animals, and humans, especially if studying biology is supported by practical activities to make it easier to understand the topic. This is also in line with the statement of Wahyuni and Taiyeb (2021) that practical activities in the laboratory can increase students'

understanding of the material taught in class so that learning outcomes can be achieved.

Meanwhile, private high school students have conditions that are the opposite of public high school students. Students prefer arithmetics because biology subjects are dominant with rote memorization which uses a lot of Latin terms so students find it difficult to memorize, and it is in line with Jayawardana and Gita (2020). Based on their observations in several schools, biology subject is considered a quite complicated subject because apart from the material being very dense, there are also foreign terms that are quite difficult to understand.

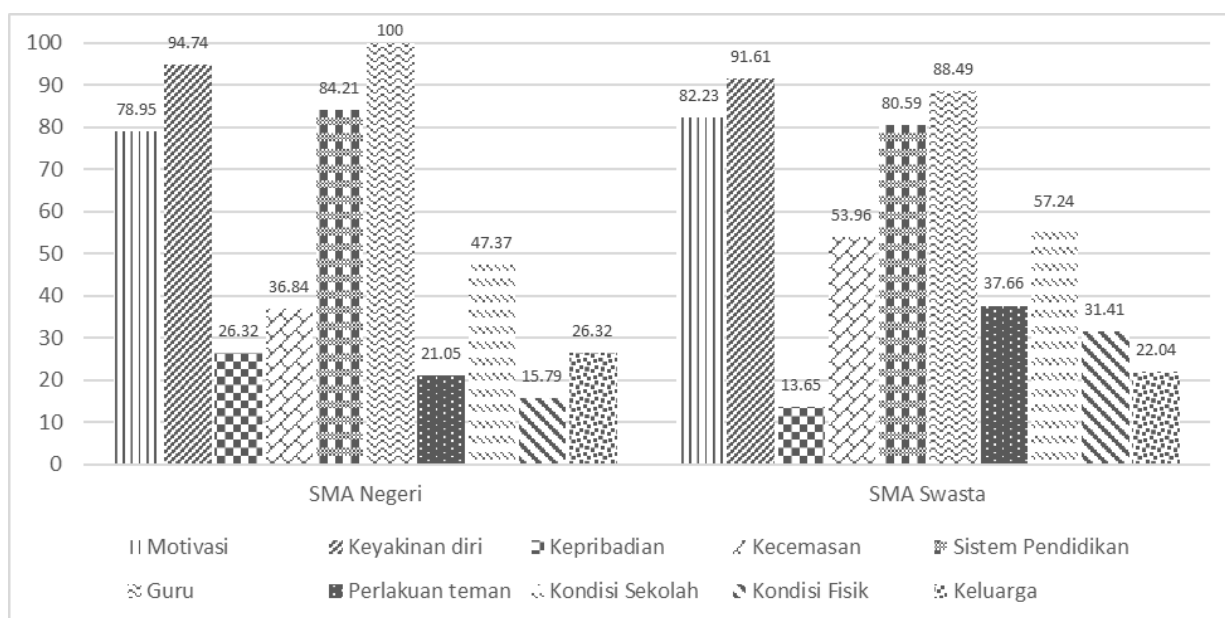


Figure 2. The percentage of students in each academic stress factor in public & private high schools.

Students' academic stress in biology class

Even though the level of high school students' preferences for biology subjects is quite high, students still feel academic stress in studying biology. Ten factors cause academic stress found in this research, namely motivation, self-confidence, personality, anxiety, education system, teachers, treatment of friends, school conditions, and physical and family conditions. Each factor has a different percentage of problems which can be seen in Figure 2.

Based on Figure 2, the percentage of students' academic stress in public and private high schools that can be seen above 50% are motivation, self-efficacy, education system,

teachers, and school conditions. This means that students' academic stress conditions in these five factors need attention even though some students also experience several other academic stress factors such as personality, anxiety, treatment of friends, and physical and family conditions. In all the factors captured, some students are stressed due to only a few factors, and some students are stressed due to all aspects.

Motivation

Motivation is a person's strong desire to do something to achieve a certain goal (Daulay, 2021). The percentage of students experiencing academic stress caused by motivation in both

high schools according to [Madsidjo \(1995\)](#) categorized in the high category, but private high schools have a higher percentage of students (82.23%) compared to public high schools (78.95%) (Figure 2.). Based on these results, it can be said that in both public high schools and private high schools, student's motivation to study biology is one of the factors causing quite high levels of academic stress. The causes of academic stress in the motivation factor are quite high, including an imbalance between academic demands and student abilities, low student awareness of the urgency of learning biology for life, as well as the level of student liking for biology subjects. This certainly affects student learning achievement. Achieving good performance starts with high motivation. The higher the student's learning motivation, the higher the student's learning achievement will be ([Pratiwi et al., 2018](#)).

Based on Figure 2, there are differences in the percentage of students who experience academic stress caused by motivation to study biology in public and private high schools. The percentage of private high schools is higher than public high schools, meaning that private high school students have lower motivation to study biology than public high school students. The motivation of private high school students is lower due to several things, including dislike of biology subjects because it is related to the large number of rote requirements in biology subjects, lack of self-awareness of the importance of biology subjects, incompatibility of biology subjects with their ideals, incompatibility of subjects. biology lessons with the college major they will be studying, and for some students, biology subjects are just a formality for science students.

Self efficacy

[Bandura \(1982\)](#) defines self-efficacy as a person's evaluation of his or her ability or competence to carry out a task, achieve goals, and overcome obstacles. Self-confidence or self-efficacy does not only talk about a person's ability

to do something but also how someone can be confident in their ability to do something even though their skills are not yet perfect. [Tamba & Santi \(2021\)](#) state that Self-efficacy is not related to the skills possessed, but is related to an individual's beliefs about what can be done with the skills he or she has. The percentage of students who experience academic stress caused by self-confidence (Self Efficacy) in both high schools according to [Madsidjo \(1995\)](#) is categorized in the very high category, but public high schools have a higher percentage of students (94.74%) compared to private high schools (91.61%) (Figure 2.). Based on these results, in both public high schools and private high schools, students' self-confidence in learning biology is one of the factors causing very high academic stress. The cause of academic stress in the self-confidence factor is very high because students feel unsure about their abilities when studying biology, which results in students feeling anxious about their abilities. According to [Sari & Khoirunnisa \(2022\)](#), the lower a person's level of self-confidence, the higher their academic anxiety and vice versa.

Based on Figure 2. there is a difference in the percentage of students who experience academic stress caused by self-confidence (Self Efficacy) in learning biology in public high schools and private high schools. The percentage of public high schools is higher than that of private high schools, meaning that the self-confidence (Self-efficacy) of public high school students is lower than that of private high school students. The lower self-confidence (Self Efficacy) of State High School students is caused by several things including students with poor memorization skills and cannot absorb knowledge well in class, according to [Yolandita and Fauziah \(2021\)](#) Students like this are categorized as students with low self-efficacy in the strength factor which is characterized by the characteristic that students cannot survive when facing obstacles or failure so that students do not have self-confidence in their ability to learn. This has an impact on the next reason, namely that students

cannot understand the extent of their abilities in learning biology. Then, when the biology test takes place, there are several questions that students cannot complete. Students with low self-efficacy at factor level will believe that they can only do easy questions and will not feel challenged to set a goal or target in carrying out activities while studying. Apart from that, there are factors that teachers rarely teach, not all material in biology lessons can be understood by students well, and there is too much memorization so students feel stressed. This is in line with the statement [Suryanda et al., \(2020\)](#) that as many as 72.1% of respondents had difficulty learning biology because there was too much memorization of the material and finally there were assignments in other subjects so the focus was divided and the learning experience was lacking compared to other classes.

Education system

The education system is a combination of all educational components that are interrelated to achieve educational goals. The education system includes the curriculum and academic rules implemented in schools. Based on Figure 2, it is known that in both public high schools and private high schools, the percentage of students who experience stress is due to educational system factors according to [Madsidjo \(1995\)](#) is in the very high category. Public high schools have a higher percentage of students (84.21%) compared to private high schools (80.59%) (Figure 2.). Based on these results, in both public high schools and private high schools, the education system for biology learning can be seen as one of the factors causing very high academic stress. The cause of academic stress in the educational system is highly triggered by the inability of students to follow the high demands of the curriculum and the inability of students to follow the rules that have been implemented at school. This is in line with a study carried out by [Mardianti & Dharmayana \(2020\)](#) about the curriculum applied at a school having a mismatch between academic capacity and the academic

load received by students, making students feel stressed.

Based on Figure 2. there are differences in the percentage of students who experience academic stress in biology learning caused by the education system. The percentage of students in public high schools is higher than students in private high schools, indicating that the education system used in public high schools has a more stressful effect on students compared to the education system in private high schools. This condition arises partly because the education system in public high schools, especially for studying biology, has higher demands than private high schools. In line with [Desmita \(2010\)](#), several factors can cause academic stress, and some studies discuss the related phenomenon, including Role Demands (demands for satisfactory grades) and Task Demands (curriculum demands, assignments, and exams).

Teachers

Teachers have a very important role in the teaching and learning process, where the teacher is the manager of the learning process as a determinant of learning success ([Buchari, 2018](#)). The percentage of students experiencing academic stress caused by teachers at both high schools according to [Madsidjo \(1995\)](#) is in the very high category, but public high schools have a higher percentage of students (100%) compared to private high schools (88.49%) (Figure 2.). Based on these results, in both public high schools and private high schools, teachers are among the causes of very high academic stress in biology learning. This means that both students in public high schools and private high schools feel that the role of teachers in learning is not optimal, so students feel stressed. One of the causes of academic stress that comes from is related to the quality of the teachers. The quality of teachers determines the quality of educational goals. Apart from having to be able to master the material and have good teaching skills, a teacher must also have high integrity in carrying out their duties and be able to be a role model for students

(Syam & Santaria, 2020). The teacher's lack of performance in carrying out his role has a significant impact on student learning, in this case, the teacher rarely attends biology class hours, so students lack motivation to study biology. According to Khilmawati (2020), teacher discipline when teaching has a significant influence on character formation and student learning motivation. Apart from that, stress that comes from teachers is also caused by less varied learning methods and models, making students tend to get bored while learning. This statement is in accordance with Rahmat (2010) in that students experience stress in learning because teachers always use ordinary (general) learning strategies which emphasize more on achieving curriculum targets.

Based on Figure 2, there are differences in the percentage of students who experience academic stress caused by teachers in biology learning at both public high schools and private high schools. The percentage of public high schools is higher than private high schools, meaning that the role of teachers at public high schools in teaching biology is still not optimal which makes students experience academic stress. The cause of academic stress among teachers in State High Schools is very high because a teacher should be able to deliver material according to the demands of the curriculum. The presence of the teacher is very important, especially for interaction between students and teachers during learning. The lack of interaction between students and teachers during learning is thought to be one of the reasons why teachers are one of the causes of academic stress in students. According to Sudirgayasa et al., (2021), meaningful learning will occur if there is cognitive interaction between the teacher and students, where students are invited to try to connect new phenomena into their knowledge structure while the teacher provides intensive guidance to students. Seeing the phenomenon of lack of interaction between students and teachers in Biology subjects makes students feel stressed because they do not receive the same treatment

as other classes and feel insecure about the learning experience being much different compared to other classes where teachers study more intensely with their students.

Apart from that, giving assignments is also another cause of stress for students. If teachers generally give a lot of assignments, it causes students to become stressed, in the same way teachers rarely give assignments to their students. Students feel stressed because they are never given assignments by the teacher. After all, there is no place for self-evaluation of students and retrieval of the knowledge possessed by students. Furthermore, the student's learning experience obtained from the teacher also has an influence, because the teacher never invites students to do practical work in the laboratory so the student's learning experience is less than optimal. According to Siregar et al., (2022), New knowledge in students can be formed through practical activities because they involve knowledge and skills factors and the exam only provides 3 essay questions which have cognitive levels C1 (Mentioning) and C2 (Explaining) in Bloom's Taxonomy. This is what causes students' high-level thinking skills to remain low because students are not trained on HOTS questions by their teachers. This statement is supported by research by Yulianis & Susanti (2019) which states that one of the causes of higher-order thinking skills still low in students is that the questions given by teachers to students are still at the C2 level. Based on previous research, it is stated that students' higher-order thinking skills are still low so they need to be improved (Angraini & Sriyati, 2019).

Another thing that influences is the teacher's age. The teacher's age greatly influences the motivation and level of productivity in teaching because age influences physical and psychological conditions which have an impact on work potential. The older the teacher, the lower the level of teaching productivity because it is influenced by physical conditions that are no longer optimal. This is in line with the statement of Nurdiawati & Safira (2020) that a person's age affects their level of productivity at work, for

example, the older a person is, the more limited they are in carrying out activities due to physical weakness.

School condition

School conditions have an important role in facilitating teaching and learning activities. School conditions include biology learning facilities and infrastructure such as biology laboratories. The percentage of students who experience academic stress caused by school conditions in private high schools is 57.24%. According to Madsidjo (1995), this percentage is in the quite high category compared to Public Senior High Schools (47.37%) which is categorized in the low category (Figure 2.). The cause of student academic stress is the school condition factor due to the imbalance between the academic demands that must be met by students and the facilities that students receive during learning it will have an impact on student's learning experiences and outcomes.

The facilities that students receive during learning include a biology laboratory that is not optimal, such as a hot laboratory, there is no Wi-Fi network because the signal is inadequate and the limited number of practical equipment makes it difficult for students to carry out practical work in the laboratory. Adequate facilities as well as tools and materials to support a good and complete practicum will maximize the progress of practicum activities (Yuliani et al., 2021).

Apart from motivational factors, self-confidence, personality, education system, teachers, and school conditions, other factors cause academic stress in students. Other academic stress factors experienced by students come from personality, anxiety, treatment of friends, physical condition, and family. Based on Figure 2, these factors fall into an average percentage below 50%, meaning that students' academic stress conditions in these five factors are still relatively low so that some students can overcome them.

Personality

Personality is a form of traits that exist in a person that greatly determines his behavior. The

student's personality will influence the perception and decision to procrastinate or not. Personality factors of students in both public high schools and private high schools according to Madsidjo (1995) are categorized in the very low category. Based on Figure 2, there is a high percentage of students who experience academic stress caused by personality factors in public high schools (26.32%) compared to private high schools (13.65%) which is in the low category.

The causes of student academic stress based on personality factors include a sense of pride in the high marks they get in biology subjects and students' desire to submit biology assignments on time. This can still be resolved because students feel they have done their best in learning biology and have good enough self-awareness of the task so that students' personal personality problems can still be resolved well. Thus, both public high school students and private high school students have a good awareness of responsibility for assignments because students tend not to procrastinate in submitting assignments, and this illustrates that there is no academic procrastination carried out by students (Nafeesa, 2018).

Anxiety

Anxiety is a condition where a person feels uncomfortable feelings accompanied by physical sensations that influence a person to do something. In the learning process, anxiety is a normal thing, however, if the anxiety is excessive, it has a bad effect on students.

Based on Figure 2, the percentage of students who experience academic stress caused by self-anxiety factors in private high schools is higher than in public high schools. Private High Schools have a percentage of 53.96%, and according to Madsidjo (1995) this percentage is categorized in the low category, while Public High Schools have a percentage of 26.32% which is categorized in the very low category. Students at both schools have low anxiety. Anxiety is a natural thing, but if it is excessive it will disrupt a person's concentration in doing something (Peker & Ulu, 2018; Skaalvik, 2018).

The anxiety faced by students during the learning process is a natural thing when they are trying to understand certain material in learning because cognitively someone who feels anxious will continue to worry about all kinds of problems that might occur, so it will be difficult for him to concentrate or make decisions, feeling confused, and it becomes difficult to recall. Several factors can cause academic anxiety in students, including students not being able to learn according to curriculum demands, long learning times, lack of understanding of certain materials, exams, too many assignments, and the assessment system often causes anxiety in students. This is reinforced by [Islamic \(2022\)](#) view that the factors causing anxiety in students originate from high curriculum achievement targets, dense assignments, a competitive learning environment, and a strict assessment system.

Certain biology materials can also cause academic anxiety in students. This academic anxiety occurs because students don't understand the material, so students feel anxious and afraid of being unable to follow the material. Biology material that can make students feel anxious includes abstract material, material that uses a lot of Latin, and material that has a lot of components memorized.

Based on the interview results, the material that makes students feel anxious is material that is considered difficult, complicated, and abstract, such as cells, movement systems, blood circulation systems, nervous systems, metabolism, and genetics. This is in line with the research carried out by [Fauzi & Fariantika \(2018\)](#) that the causal factors of genetics are considered the most difficult branch of biology because it has abstract concepts, difficult to understand, the material has been studied too much and contains many foreign terms that are difficult to understand. [Jayanti \(2018\)](#) stated that the subject of cell structure and function is categorized in the difficult category because as many as 62.50% of students consider the material to be abstract since it cannot be observed directly with their eyes and there are foreign terms related to cell

chemistry so it is difficult to understand. remembered. According to [Utami et al., \(2021\)](#) the movement system topic is difficult for students to understand because it is quite complex and uses difficult terms, and there is a short time to discuss this dense topic, so the student's grades are still below the KKM. Meanwhile, according to [Ningrum et al., \(2022\)](#), the circulatory system topic is a difficult topic because it requires a high level of focus to understand this abstract topic. [Fitri et al., \(2019\)](#) stated that the nervous system is biology topic that contains cognitive material that is quite complicated, so it requires innovation in its delivery. In addition, [Kurniawati & Jailani \(2020\)](#) stated that metabolism topic is a concept that uses many terms in Latin which makes it difficult for students to understand it.

Peers

The existence of peers is a forum for exchanging information and knowledge so that it influences the learning process. The influence of peers will be able to shape a person's various characteristics, both positive and negative ([Anggreni & Rudiarta, 2022](#)).

Based on Figure 2, the percentage of students who experience academic stress caused by friends' factors in private high schools is higher than in public high schools. Private High Schools have a percentage of 37.66%, and according to [Madsidjo \(1995\)](#) this percentage is categorized in the very low category, while the Public Senior High Schools have a percentage of 21.05% which is categorized in the very low category. This shows that the treatment of friends in biology learning in both types of schools, such as feelings of pressure due to competition in biology learning and feelings of being avoided by friends when learning biology, can still be overcome by students because students feel that they have never harmed anyone when learning biology in the classroom. The existence of competing in biology class does not make it a problem but rather a self-reflection on the efforts that have been made during learning. This is in line with the

statement of [Agustiningih \(2019\)](#) that one of the environmental factors that causes academic stress is competition between peers to get good grades.

Physical condition

Physical condition has a significant influence on students' academic stress. When students are in good physical and mental condition, they are expected to be able to control the academic stress they experience so they can maximize their abilities during learning. The percentage of students who experience academic stress caused by physical factors in private high schools is higher than in public high schools. Private High Schools have a percentage of 31.41%, and according to [Madsidjo \(1995\)](#) this percentage is categorized in the low category, while Public High Schools have a percentage of 15.79% (Figure 2.) which is categorized in the very low category.

Academic stress that originates from physical conditions includes illnesses experienced during biology learning and limited physical conditions that hinder the biology learning process. Ulcer or gastritis is a disease of increased stomach acid that often occurs when a person feels stressed ([Tamimi et al., 2020](#)). Based on the results of the interview, there were no illnesses caused when studying biology, such as stomach ulcers, but there were symptoms such as dizziness because the biology material presented was too dense and detailed. The physical limitations that students have are that they cannot hear well, which can hinder the biology learning process. Students are late in understanding the lessons presented by the teacher because of their physical limitations. Physical limitations can trigger stress ([Krisnatuti & Latifah, 2021](#)).

Family

Family is the first source of support a person receives. One of the ways a person's psychological well-being comes from family support. When students get good support from the family, it is expected that they can develop their abilities to the maximum ([Wistarini & Marheni, 2019](#)).

Based on Figure 2, the percentage of students who experience academic stress caused by family factors in public high schools is higher than in private high schools. Public High Schools have a percentage of 26.32%, and according to [Madsidjo \(1995\)](#), this percentage is categorized in the very low category, while private high schools have a percentage of 22.04% which is categorized in the very low category. Family factors include academic demands from the family and family conflict. These academic demands include demands for admission to your favorite university, demands for class ranking, demands for good grades, and demands for achievement that must be balanced with those of your siblings. [García-Ros et al., \(2018\)](#) state that one of the factors causing academic stress comes from family academic demands. Apart from academic demands, family problems are also an indicator of family factors that cause stress. Sometimes the problems being faced by families disturb students concentration during the learning process. However, the students can control their feelings when facing family problems and when learning biology.

Based on the research findings on students' academic stress factors, it can be understood that there is no difference between Public High Schools and Private High Schools in terms of factors that trigger academic stress.

CONCLUSION

Public high school students and private high school students have a fairly good level of preference for Biology subjects, even though there is a higher percentage of students who have a preference for Biology subjects in High Schools than in Private High Schools. Even though the level of student interest in biology subjects is quite good, the majority of students have quite high academic stress in their learning. Factors that cause academic stress, both in public high schools and private high schools, which is in the high category include motivation factors, self-confidence, education system, teachers and school conditions. In general, in public high schools and private high schools, the number of

students who have academic stress is relatively similar. These stress factors can cause students difficulties in learning.

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