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Exploring Student Subjectivity in Perceiving Courses Content in the Biology Department at an Islamic Religious University

(Penelusuran Subyektivitas Persepsi Mahasiswa dalam Mencerna Materi Mata Kuliah Jurusan Biologi di Perguruan Tinggi Agama Islam)

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ABSTRACT

Individual interpretations of specific phenomena exhibit a wide range of variations. Some consider higher education to be of utmost importance, while others assert that it is merely a financial burden. Similar perspectives apply to the comparison between science and religion. These interpretations are influenced by the individual's background conducting the assessment and the specific context applied in that evaluation. Likewise, within the context of academic coursework, there is a diversity of opinions regarding the level of difficulty, often dependent on the student's understanding and subjective perspective of the course. This study aims to comprehend and analyse how students majoring in Biology subjectively interpret and perceive their Biology courses. The research employs a qualitative approach using the Grounded Theory methodology. The sample consists of 40 students selected through theoretical sampling. Data collection is conducted via a Google Form-based questionnaire. Some perceive introductory Biology courses as relatively easy, while courses involving calculations are often regarded as the most challenging.

Keywords: *Academic coursework, Individual interpretations, student perception*

ABSTRAK

Interpretasi individu terhadap fenomena tertentu memiliki cakupan yang sangat bervariasi. Beberapa menganggap pendidikan tinggi sangat penting, sementara yang lain mengklaim bahwa itu hanya merupakan pemborosan uang. Pandangan serupa juga berlaku untuk perbandingan antara ilmu pengetahuan dan agama. Interpretasi ini dipengaruhi oleh latar belakang individu yang mengevaluasinya dan konteks spesifik yang diterapkan dalam evaluasi tersebut. Demikian juga, dalam konteks mata kuliah, ada keragaman pendapat mengenai tingkat kesulitan, yang sering kali bergantung pada pemahaman dan perspektif subjektif dari mahasiswa yang mengikuti mata kuliah tersebut. Penelitian ini bertujuan untuk memahami dan menganalisis cara mahasiswa jurusan Biologi mengartikan dan mempersepsikan mata kuliah Biologi secara subjektif. Penelitian ini menerapkan pendekatan kualitatif dengan menggunakan metode Grounded Theory. Sampel terdiri dari 40 mahasiswa yang dipilih dengan metode sampling teoritis. Pengumpulan data dilakukan melalui kuesioner berbasis Google Form. Beberapa menganggap mata kuliah Biologi tingkat dasar sebagai mata kuliah yang relatif gampang, dan mata

kuliah yang melibatkan hitungan dianggap paling sulit.
Kata kunci: interpretasi individu, persepsi mahasiswa. tingkat kesulitan

INTRODUCTION

The understanding and perspectives of individuals regarding a topic or phenomenon are inherently diverse. Certain factions argue that higher education holds considerable importance (Han et al., 2022; Lamb et al., 2022), whilst alternative perspectives classify it as a manifestation of fiscal inefficiency (Mintz, 2021). According to the study conducted by Hariati and Syukur (2019), There exists a contention over the relative standing of science and religion, with proponents advocating for the superiority of science while others maintain the contrary perspective (Hidayat, 2015). The interpretations of the examined subject matter can vary based on the evaluator's perspective and the nature of the subject being assessed. Likewise, when it comes to academic coursework, certain individuals perceive biology courses as challenging, but others perceive them as manageable.

In the current era, knowledge has been positioned as the primary foundation for a country's advancement in various aspects of life (De Wit & Altbach, 2021; Snowling et al., 2022). Furthermore, various concepts discussed in science seem to become more relevant when one can relate them to everyday situations using scientific concepts, especially those associated with knowledge. The discipline of Biology has experienced exponential growth in the last two decades. Many scientific concepts studied in the field of Biology are increasingly applied to address various human challenges such as health, agriculture, livestock, and other essential fields. Therefore, Biology has become one of the popular subjects among students due to the benefits it offers. However, despite its popularity, the academic performance of most students in this subject tends to decline. Some students find Biology a challenging subject to understand, which aligns with these findings (Ogunkola & Samuel, 2011). This situation occurs not only at the high school level but also at the university level.

The cognitive competency levels encompass recalling, understanding, applying, analyzing, evaluating, and creating. This taxonomy system serves as a crucial framework in understanding and measuring an individual's level of comprehension and mastery of cognitive concepts and skills. This understanding and mastery have significant implications in education, research, and human resource development, as it depicts the extent to which individuals can apply and expand their knowledge. The primary focus in this context is on individuals who can internalize and master specific subjects or concepts and apply that understanding in the context of critical thinking, innovation, and problem-solving (Cizek & Lim, 2023).

The theory of subjectivity emphasizes that the learning process is centered on the individual, as it is this individual who will face their own reality (Mansfield, 2020). In this context, a person's reality is interpreted according to what is in their mind. Therefore, in this study, biology students will be investigated in relation to their perceptions of the difficulty level of the courses they face, based on their personal views and individual abilities.

Subjectivity refers to an individual's tendency to interpret and distinguish reality based on a sequence of personal experiences, value systems, beliefs, and individual preferences. Belief is a

significant aspect in this context, often influenced by specific references or social groups that affect the individual, such as parents, partners, close friends, colleagues, or other parties, depending on the type of behavior being considered (Sartika Dani, 2020). In the field of Biology as an academic discipline, subjectivity plays a crucial role in shaping individuals' comprehension and interpretation of the curriculum. Each person possesses a distinct personal history, and this history can exert a notable impact on their interpretation and understanding of concepts within the subject of Biology.

Every individual, when faced with the same object or situation, tends to have a different perspective. This refers to the phenomenon of subjectivity in individual observation and assessment. Subjectivity results from complex factors that influence one's viewpoint towards a particular object or situation. These factors include personal background, previous experiences, values, beliefs, culture, and social context. Regardless of the objective situation, individuals often bring their own framework influenced by their life history, values they uphold, and perspectives developed over time. Therefore, when individuals encounter the same situation, they can produce different understandings and interpretations according to their subjective viewpoint. This phenomenon is a crucial part of psychological and sociological analysis related to individual perception and assessment of reality and influences various aspects of daily life, from decision-making to dynamics in social and cultural interactions (Samantha & Almalik, 2022).

Subjectivity in the perception of biology courses is influenced by several relevant background factors. First, previous experiences play a key role in shaping an individual's perception of biology courses. Individuals with positive past experiences with biology courses tend to have a positive view and confidence in understanding and tackling the taught material. Conversely, those who had negative experiences in previous biology courses might develop a more negative perception or anxiety towards the course. Second, an individual's interest in the topics discussed in the biology course affects their perception. If someone has a high interest in those topics, they might feel more engaged, enthusiastic, and enjoy following the course. Strong interest can create a positive perception and satisfaction in understanding the taught material.

Educational background and prior knowledge also play a role in shaping an individual's perception of biology courses. Individuals with different educational backgrounds or varied prior knowledge can relate biology topics to different experiences and understandings. This can influence their level of comprehension of the material and how they interpret information within the context of the biology course. As a result, subjectivity in the perception of biology courses can be understood as the outcome of a complex interaction between individual background factors, including previous experiences, interests, and education (Fuady et al., 2017).

This study aims to delve into the understanding and subjective perceptions held by biology students regarding the biology courses they take. Within this research framework, the researcher investigates how students perceive the course, especially in the context of their views on the level of difficulty or ease of the taught material. The study explores the dimension of subjectivity in an academic context, focusing on how an individual's background and experiences influence their perception of the biology course. Additionally, the study seeks to understand how an individual's interest and motivation towards topics in the biology course can affect their views on the course. Through a scientific approach, this research is expected to provide deeper insights into the factors shaping students' perceptions of the biology course and its potential implications in the context of higher education.

METHODOLOGY

The research adopted a qualitative methodology, specifically utilizing the grounded theory technique. The present study employed grounded theories, which adhere to a paradigm that facilitates the generation of concepts and the formulation of theories pertaining to students' assumptions regarding biology courses. These assumptions were directly collected during the research, utilizing pre-existing theories as a framework (Lambert, 2019). The grounded theory approach seeks to generate or uncover theories pertaining to the study topic, namely an abstract analytical framework that elucidates student perceptions that are pertinent to the actualities within the field of biology. This study employs a methodology aimed at comprehending and interpreting the perspectives of biology students, taking into account their unique backgrounds and academic experiences. Additionally, it aims to assess their perceptions regarding the amount of complexity associated with the course material covered in lectures. This research aims to provide a deeper understanding of the multitude of elements that impact students' views of biological subjects by employing the grounding theory technique. Consequently, it has the potential to make significant scholarly contributions to academic discourse.

The research focused on analyzing the dynamics within a religiously oriented higher education environment, specifically among students majoring in biology. The study comprised a sample of 40 students who were actively participating in the study program. The sampling method employed in this study was theoretical sampling, which was utilized to identify informants who were deemed capable of assisting the researchers in addressing and formulating theories regarding students' attitudes towards courses in biology (Banning, 2023). The data was collected through questionnaires that were distributed online via the Google Form platform. Additionally, a lift was provided directly to respondents. The analytical approach employed in this study was thematic analysis. The findings of the research were presented in the form of a frequency table, enabling descriptive analysis. The study aimed to explore differences in student perceptions of biology courses, in order to provide a deeper understanding of the factors that influenced this perception. The research results were also expected to contribute to identifying areas of improvement in the context of education in Islamic religious colleges.

RESULT AND DISCUSSION

The survey results indicated that among the respondents involved, 75% were women, whereas the remaining 25% were men. The distribution of respondents by semester in the study was as follows: 27.5% of the participants belonged to semester 1, 52.5% were enrolled in semester 3, 2.5% were from semester 2, and 17.5% were in semester 7. In relation to the background of high school education, it was found that 82.5% of the respondents possessed a background in science, whereas 17.5% had a background in social science. More detailed information on the distribution of respondents was found in the table presented below.

Table 1. Responden

Characteristics	F	%
Gender		
Female	30	75%
Male	10	25%
Semester		
1	11	27, 5%
3	21	52, 5%
5	1	2, 5%
7	7	17, 5%
Major		
Science	33	82,5%
Social Science	7	17,5%

Courses perceived as less challenging by students in the Biology study program encompass fundamental themes that are generally regarded as having a lesser level of difficulty compared to other topics. Within the framework of the biology curriculum, subjects such as General Biology, Plant Morphology, Zoology, and Animal Anatomy serve as illustrative instances of these particular areas of study. The field of general biology often offers a comprehensive introduction to the fundamental principles of biology. In contrast, specialized courses like Plant Morphology and Zoology concentrate on the morphological and taxonomic characteristics of plant and animal life. The study of animal anatomy might be perceived as straightforward due to its primary focus on comprehending the structures and organs within animal organisms.

However, it is important to remember that this perception is subjective and can vary between individuals. In addition, the difficulty level of a course can also be influenced by factors such as teaching methods, previous experience, and personal interests (Avila et al., 2021; Wang et al., 2020). Therefore, the results of surveys and further analysis of these data can provide a deeper insight into the factors that influence student perception of a particular course in the biology study program.

Table 2. Percentage of the courses

Easy courses	F
General biology	50%
Plant morphology	32,5%
Zoology	10%
Human anatomy and physiology	7,5%

Approximately 50% of students enrolled in the biology study program perceive the general biology course as relatively straightforward. The general biology course places significant emphasis on fostering a comprehensive comprehension of fundamental principles within the realm of biology, while also delving into topics that have previously been introduced at the secondary education level. The primary topics covered in this course encompass comprehension of cellular organization and fundamental principles within the field of plant biology.

The majority of students perceive the content covered in the General Biology course to be comprehended to a satisfactory extent. Nevertheless, it is crucial to bear in mind that students' judgments regarding the level of difficulty of this course may differ. Prior studies have also indicated that

the primary emphasis in the General Biology curriculum revolved around comprehending cells and plants as two essential concepts. (Yurida et al., 2021).

This view reflects the perspective that the General Biology course is an important foundation for students in understanding biology in a holistic way. However, as with other courses, students' level of understanding and perception can vary depending on individual experiences, interests, and learning approaches. Thus, further research can provide a deeper understanding of the factors that influence students' perception and understanding of General Biology courses.

A total of 32.5% of students in the biology study program consider the plant morphology course to be an easy-to-understand course. The reason is that in Plant Morphology, students are asked to study in depth the physical characteristics and structure of plants that can be observed with the naked eye. This course aims to train students in identifying, describing, and classifying different types of plants based on their morphological characteristics.

In addition to discussing the vegetative organs of plants such as roots, stems, and leaves as well as their variations, the course also introduces the concepts of specific anatomical features of a plant, especially in seeded plants. In addition, students are taught about the reproductive organs, including the structure of flowers, fruits, and seeds.

This perspective reflects the student's view that the material taught in Plant Morphology can be considered easy because of its focus on visual observation and description of plant characteristics. However, perceptions of the difficulty of this course may vary between students and depend on individual factors such as educational background and interest in botany. In this context, further research can provide a more comprehensive insight into the factors that influence student perceptions of the plant morphology course. (Kusdianti, 2014).

About 10% of students in the biology study program consider zoology to be an easy course because their interest in animals makes it an interesting course. In zoology courses, the focus of learning is on scientific understanding of animals, including topics such as embryology, evolution, and classification of animals. (hewan yang tidak memiliki tulang belakang). Many examples of these animals can be found in our daily lives.

This perspective reflects the views of students who are interested in the biological aspects of animals. Students who have a special interest in animals and their ecosystems may find the material in zoology courses more understandable and interesting because it relates to the animals they love. However, it is important to remember that the difficulty levels of these courses can vary between individuals, and their perceptions can also be influenced by educational backgrounds and personal interests. Further research could provide a more comprehensive insight into the factors that influence student perceptions of zoology courses.

7.5% of students in the biology study program find the anatomy course of human physiology attractive because it focuses on understanding the inner parts of the human body. The course allows students to explore the structure and function of human body, including the respiratory system, digestive system, circulation system, and understanding of various diseases that can affect human health. This perspective reflects the student's interest in scientific aspects related to the health and anatomy of human bodies. The material taught in the anatomics course provides a deeper understanding of how to maintain body health and prevent viral, bacterial, and other diseases.

It is important to note that perceptions about the degree of difficulty of human physiological anatomy courses can vary between individuals. Factors such as educational background, interests, and previous experience can influence the way students view these courses. Further research can provide a deeper insight into the factors that influence students' perceptions of human physiology anatomy courses and their implications for their understanding of health and biological sciences.

The topics considered difficult by biology students are calculus, chemistry, physics, genetics and basic mathematics. The result is tabulated below.

Tabel 3. Percentage of hard courses

Hard Courses	F
Calculus	32,5%
Chemistry	20%
Physics	20%
Genetics	15%
Basic Mathematics	12,5%

A total of 32.5% of students in the biology study program considered calculus courses to be challenging. The difficulties frequently encountered by students in the Calculus course include various aspects such as the ability to draw graphs, solve mathematical equations, understand algebraic functions, concepts of function derivatives, broad computation, constraints, and the use of integral formulas. Factors presented as causes of difficulties in Calculus courses include misunderstanding in function reduction operations, difficulty in operating fractional quarters, lack of interest in studying Calcus material, as well as problems in mixed fractioning operations and function aggregation.

A deeper understanding of the difficulties encountered by students in calculus courses can provide valuable insights in developing more effective learning strategies. Further research could be undertaken to explore the underlying factors behind these difficulties and find appropriate solutions to help students overcome the existing challenges.

Chemistry ranks second as a course considered difficult by about 20% of students in the biology study program. The difficulties often encountered in these courses include limitations in chemical computational abilities, difficulty in visualizing abstract concepts of chemical molecular structures, as well as difficulty understanding chemical theory that tends to be abstract. Previous findings identified various factors that contributed to difficulties in chemistry courses, including lack of adequate resources and teaching staff, dense class groups, mathematical skills required for chemical calculations, the scientific language used in chemistry, as well as indirect factors such as student educational backgrounds and socio-economic conditions (Munawwarah & Side, 2022).

The ability to understand chemistry requires specialized skills and a deep understanding of chemical concepts. Therefore, further research can provide a deeper insight into the difficulties encountered by students in chemical courses and help in the development of more effective learning approaches to overcome these challenges.

Twenty percent of students in the biology curriculum face difficulties in physics courses. These courses are considered to be difficult because students feel that physics requires a lot of effort, requires an in-depth understanding in answering questions of physics, and requires repetitive practice as well as external support. The other difficulty is the number of formulas that need to be taught in a lot of physics courses. In addition, the course also introduces a variety of complex physics theories, including

Newton's theory of motion, general relativity theory, and special relativity, as well as various laws of physics such as the first, second, and third laws of newton motion, and the rules for the aggregation and reduction of vectors. (vektor gaya atau kecepatan).

Previous research has shown that one of the factors causing difficulties in physics courses is a strong mathematical background. Physics requires a good understanding of mathematics, and adequate mathematical skills are often the key to success in understanding complex concepts of physics (Battiston et al., 2021; Hilbert, 2019). Difficulty in physics courses requires a more in-depth learning approach and appropriate support for students to cope with the challenges they face. Therefore, further research can provide a more comprehensive insight into the factors that influence students' perception of physical courses and help in developing more effective learning strategies.

About 15 percent of students in the biology study program face difficulties in genetic courses. This course is considered difficult because the concepts in Genetics have certain characteristics that make it challenging. Some of these characteristics include the use of terms that may seem strange to students, the number of concepts that need to be understood, and the abstract and complex nature of the concept, which makes genetic understanding difficult for some students.

There are three factors influencing the difficulties of genetic courses, namely the lack of access to biological laboratories that can be used for genetic practices, the limited time available to study difficult topics in the context of biological courses and the possible ineffective teaching methods, which make genetic topics difficult to understand (Adelana et al., 2023).

Genetics is a course that requires an in-depth understanding of the basic principles of genetics and its applications in a variety of biological contexts. Therefore, more effective learning approaches, the provision of resources, and appropriate support are essential in helping students overcome the difficulties they encounter in genetics courses. Further research can provide a deeper insight into the factors that affect students' perception of genetic courses and help in improving curricula and teaching methods more effectively.

A total of 12.5% of students in the biology study program have difficulties in basic mathematics courses. These courses are considered to be difficult and boring by some students because there are various challenges to overcome in understanding mathematical concepts. Some of the obstacles faced include the considerable number of calculations and formulas to be solved, as well as the cognitive obstacles to understanding mathematical expression as a process to be followed rather than as an object that can be manipulated.

Difficulty in understanding mathematics can often make students uncomfortable and tend to use mathematical procedures that they remember rather than understand the underlying concepts. The degree of student confidence in learning mathematics can also influence their efforts to overcome such difficulties. The majority of students consider mathematics difficult due to various factors, such as uninteresting teaching methods, difficulty in following instruction, limited understanding of mathematical material, as well as difficulties in solving math problems (Gafoor & Kurukkan, 2015).

Overcoming difficulties in basic mathematical courses requires more intensive efforts in teaching and learning mathematics, including applying more attractive teaching methods, providing support in overcoming cognitive barriers, and building student confidence in understanding and dealing with mathematic material. Further research can provide a deeper insight into the factors that influence

student perception of basic mathematics courses and help in the development of more effective learning approaches.

The results of the study showed that the perception of students in the biology study program towards biological courses that were considered easy was as follows: as many as 20 people considered general biology courses easy, 13 people considered plant morphology course easy, 4 people considered the anatomy of the physiology of the human body easy, and 3 people considered that animal zoology course simple. On the other hand, the courses considered difficult by students in Biology study programs were as following: as much as 13 people thought that calculus courses were difficult, 8 people considered chemistry courses difficult, 6 people considered physics courses to be difficult, 5 people considered genetic courses hard, and 8 people felt that basic mathematics course was difficult. This perception provides an overview of the courses considered challenging by students in a biology study program, and this information can be used to design more effective learning strategies as well as provide better support to students to overcome difficulties in such courses.

This belief may be based on the experience of students in this course, where they are more engaged in the analysis and understanding of concepts as well as basic theories in biology, including the scope of biological, cellular, and tissue of plants and animals. In the second place, the course of plant morphology is also considered easy by students. This may be due to the fact that in the course of plant morphology, students study the outer parts of plants, such as stems, leaves, and roots, which can be seen and held directly by the human eye. The existence of easily observable components may make this material easier to understand by students. This perception reflects how the teaching approach and material presented in the course can influence the student's perception of the level of difficulty. The use of effective teaching methods and practical approaches that allow students to interact directly with the material may be an important factor in feeling that such courses are the easiest.

Students tend to consider calculus difficult because they may not see a clear relationship between these courses and studies in biology. Moreover, their perception of calculus as a course that requires many counts and formulas can be an obstacle to those who do not have a strong inclination to mathematics. Previous findings also reflect that students have difficulty understanding calculus material that is considered complicated and often requires the help of more skilled individuals (Purnomo et al., 2018).

In the second place, chemistry and physics courses were also considered difficult by students. The difficulty in understanding these courses may be due to abstract concepts to be understood as well as the need to think high-level and apply logical reasoning in solving problems in both courses. Students often find it difficult to understand foreign terms and understand concepts in physics and chemistry. Moreover, they may have difficulty seeing the practical applications of matter in everyday life, especially in the context of studies in biology. Physics and chemistry also require greater thoroughness and understanding, which can be challenging for some students (Sarabi & Gafoor, 2018).

Genetics courses was considered the most difficult by students in biology majors. The difficulties experienced in understanding genetic concepts may be due to the abstract and complex nature of the material. Moreover, factors such as the lack of biological laboratories for practices and less effective teaching methods can make it difficult to understand genetic material (Lidi & Daud, 2019).

The difficulties experienced in these courses reflect the differences in the way students view courses that are more focused on biological concepts and that require a deeper understanding of

mathematics, physics, and chemistry. Considering these difficulcies can help teachers design more effective learning strategies and provide better support to students in addressing these challenges.

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CONCLUSION

The most dominant subjects considered difficult by students in biology major have some common features. These features include too much counting, the use of less familiar foreign terms, as well as concepts that are abstract and complex. Students may find it difficult to deal with matters that require a deep understanding of mathematics, as well as understand concepts that are not always directly related to the field of biology. On the other hand, courses considered easy by students tend to be more analytical in nature and can be associated with everyday life. These courses may be easier to understand because the subject matter can be applied in the context of everyday lives, so that students can see its relevance and benefits in their lives. Knowledge of student perceptions of these various courses can help universities and teachers design more effective curricula and appropriate teaching methods. In addition, providing extra support to students in courses that are considered difficult can help improve their understanding and reduce the level of difficulty they face.

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