

Biology Students' Response to the Implementation of Oral and Written Exams

Paulus Take¹, Aleksius Madu²

Abstract

This study aims to investigate students' responses to oral and written examinations. The research method involves a series of steps and techniques designed to collect relevant data, analyze the findings, and conclude the results. The study aims to provide in-depth insights using qualitative descriptions to measure student responses to the types of assessments used by lecturers in lectures involving all Biology Education study program students with a sample of 60 people. Data were obtained through a questionnaire containing structured and semi-structured questions related to student responses covering aspects of the level of preparation before the exam by students and lecturers and the type of evaluation used. The research procedure includes the stages of data collection, data analysis, and interpretation of results. Students who agreed to participate were given the questionnaire. The results showed that students prefer oral exams because they are more challenged to learn and remember all the material that has been taught and hone their ability to think and reason critically to the questions asked by the lecturer. In addition, by taking an oral exam, they make careful preparations to take the exam by studying lecture material from various learning sources and have high motivation and self-confidence.

Keywords: *Oral exam, written exam, student response.*

Introduction

Higher education plays a crucial role in shaping students' understanding and skills, especially in the discipline of biology. One aspect of evaluation that becomes the foundation of learning in higher education is the use of exams, both in oral and written form (Morris et al., 2021). This study aims to investigate the response of biology study program students to oral and written exams on carbohydrate and fat metabolism material. Carbohydrate and fat metabolism are two central topics in biological science that require in-depth understanding and application of complex concepts. A good understanding of these two processes is not only important in an academic context, but also relevant in the fields of health and scientific research (Javaid et al., 2023). Therefore, comprehensive evaluation through oral and written examinations is a necessity. In the ever-evolving era of education, diverse evaluation approaches are applied to ensure students' deep understanding and practical skills. Oral and written exams are two commonly used approaches, each with its own benefits and challenges. This study aims to explore how

¹ Program Studi Pendidikan Biologi, Universitas Nusa cendana, Email: paulustaeksonbai60@gmail.com, Orcid: <https://orcid.org/0009-0006-5103-9185>

² Program Studi Pendidikan Matematika, Universitas Nusa Cendana, Email: leksi_madu@staf.undana.ac.id, Orcid : <https://orcid.org/0000-0002-3439-1981>

biology students respond to both types of exams, as well as what factors might influence their responses.

As part of the academic community, biology students are tested not only on their theoretical knowledge but also on their ability to articulate and apply that knowledge. Oral exams present a platform where students can directly speak, explain and defend their knowledge in front of lecturers or fellow students. On the other hand, written examinations assess students' ability to compose clear, structured and analytical written answers. Students' perceptions and responses to these two types of exams can be influenced by various factors, such as individual preferences, level of preparedness, and previous experience (García-Aracil, et al., 2021). In addition, exam characteristics, such as time allotted, question format, and question difficulty, can also play an important role in detailing student responses.

The importance of this research lies not only in understanding student responses but also in developing more effective evaluation methods that support continuous learning. By understanding how students respond to oral and written examinations, educational institutions can consider necessary adjustments in their evaluation processes. In this way, students' learning experiences can be optimized, and biology education can become more relevant and immersive.

This study can contribute to the biology education literature by opening a new window into the preferences and challenges that biology students face in taking the carbohydrate and fat metabolism exam. With a better understanding of student responses, both lecturers and curriculum developers can develop better evaluation strategies, maximizing the benefits of higher education in biology (Bovill & Woolmer, 2019). In this context, this study will collect data from a number of biology students who are taking courses related to carbohydrate and fat metabolism. Qualitative and quantitative research approaches will be used to analyze student responses to oral and written examinations.

Focused questions will be asked in interviews and surveys to gain an in-depth understanding of students' perceptions, preferences and challenges. Through this research, we can identify more effective evaluation strategies for carbohydrate and fat metabolism, ensuring that students' learning experience refers not only to knowledge accumulation but also to the development of in-depth communication and problem-solving skills. Thus, this study is expected to contribute significantly to curriculum development at the tertiary level and provide new insights into evaluation practices in biology education.

Literature Review

Oral Exam

Oral examinations, as a form of academic evaluation, are a method that allows direct assessment of examinees' verbal communication and comprehension skills. In an educational context, oral exams provide an opportunity for learners to express their understanding of the subject matter orally, communicate clearly, and provide responses to specific questions or topics. This article will take an in-depth look at oral exams, including the purpose, preparation, advantages, and challenges that test takers may face.

An oral examination is a method to assess which student responds to one or more examiners' questions (Febriza & Fitria, 2022) The oral exam is a specialized type of test that differs in several important ways from the more static written exams Because exam questions are presented out loud, they can assume a conversational air that requires immediate comprehension, interpretation, and synthesis (Foote, 2016:10). Oral Examination is a form of assessment where a set of stimulus questions are developed that address critical areas of knowledge, or sets of abilities related to a competency or set of competencies (Rahman, 2011).

Oral exams have the purpose of (1) testing students' understanding of the teaching material. Oral exams allow teachers to measure students' understanding of the subject matter. Through direct dialog, the instructor can evaluate the extent to which students can apply the concepts they have learned; (2) develop speaking skills. Oral exams are a good platform to develop students' speaking skills. Students are invited to compose their ideas verbally, organize their thoughts, and convey them clearly and effectively; (3) Measuring analytical skills. In oral examinations, students are often asked to analyze information, conclude, and give arguments orally. This helps in measuring their analytical and critical thinking skills; (4) Assessing the ability to respond to questions. The ability of students to respond to questions spontaneously and think of their answers within a limited time can be measured by oral exams. It reflects interpersonal intelligence and quick thinking ability; (5) Assess presentation ability. The oral exam provides an overview of the examinee's presentation skills. It covers aspects such as the use of body language, voice intonation, and clarity of message delivery.

In addition, oral exams also allow teachers to gain deeper insights into students' understanding of the subject matter. By interacting directly, teachers can assess the extent to which students understand certain concepts, whether they are able to relate the knowledge to real-world situations, and the extent to which they can apply the knowledge in relevant contexts. Oral exams can also create a more interactive and dynamic learning environment. The question and answer process between teachers and students can build students' engagement in learning, motivating them to speak and think more actively (Johnson, 2017). In addition, oral exams can help reduce students' test-related anxiety, as they have the opportunity to talk and interact with the teacher, thus creating a more relaxed atmosphere.

Overall, oral exams are an important evaluation instrument in education as they provide a holistic picture of students' abilities. By actively engaging students in the communication process, oral exams not only measure their understanding of the material, but also develop speaking and critical thinking skills that are essential in everyday life and future careers.

Oral Exam Preparation

Preparation for an oral exam is a crucial step in ensuring that students can face the evaluation confidently and successfully. Oral exams put students in a situation where their communication skills and understanding of the material are directly tested, so good preparation can make a significant difference in the final outcome (Kang et al., 2019). In this context, there are several strategies and tips that can help students tackle oral exams successfully, namely (1) Mastery of the material. The most fundamental preparation is mastery of the subject matter. Students need to understand the key concepts and have a strong knowledge of the topics to be tested. A deep understanding of the subject matter is key in oral exam preparation. Students need to ensure that they understand the concepts that will be tested well. This involves reading the textbook, class notes, and other course materials thoroughly. It is important not only to rely on short-term memory, but also to try to understand the concepts thoroughly. This will help students feel more confident and be able to give better answers when tested. (2) Speaking practice. Speaking practice in front of a mirror or with friends can help students build confidence in public speaking. It also helps them improve their voice intonation and presentation style. Practice is key in improving speaking skills and overcoming public anxiety. Students can practice with their friends or even with family members. Talking about certain topics, explaining concepts, or even playing the role of a test person can help students build their confidence and communication skills. This exercise also helps students identify areas where they may need more preparation. (3) Question simulation. Students can simulate with a friend or teacher to answer questions that may arise in the exam. This helps them practice formulating answers spontaneously. (4) Understanding instructions. It is important to understand the exam instructions well. Students need to know the exam format, time

duration, and scoring criteria that will be used by the instructor. Detailing the structure of the oral exam and understanding the types of questions that may be asked can help students prepare more effectively. This involves understanding whether the exam will focus on theoretical knowledge, analytical skills, or argumentation skills. By knowing this, students can direct their preparation to meet the specific needs of the exam. Preparing answers to common questions that may be asked can also help students feel more prepared and reduce anxiety. (5) Time Management. Students should ensure that they can manage their time well during the oral exam.

This includes allocating time to think about answers, provide responses, and organize the presentation. During the preparation process, managing time wisely is also a key factor. Students should plan their study schedule carefully, allowing sufficient time for revision and practice. Planning time well helps to reduce pressure and increase the effectiveness of preparation. In addition, avoiding procrastination and dividing the material into smaller sections can make preparation feel more manageable. (6) Use of Technology. The use of technology can also be a very effective tool in oral exam preparation. Students can record themselves speaking on a particular topic and then play back the recording to evaluate their performance. This helps them identify areas that need improvement, such as voice intonation, clarity of delivery, or proper use of language. Technology also allows easier access to learning resources, presentations or recordings relevant to the subject matter. (7). Health. But no less important, is maintaining physical and mental health. Getting enough sleep, eating well, and getting enough rest can have a positive impact on concentration and overall performance. Mental health is also important; students need to be aware of the signs of stress and seek support if needed.

Overall, oral exam preparation involves a combination of understanding the material, speaking practice, and good time management. By paying attention to these aspects, students can maximize their chances of succeeding in oral exams and feel more confident when facing this evaluation challenge.

Pros of Oral Exams

Oral exams, as a form of evaluation in education, have a number of advantages that add value to the student learning process. Although often perceived as challenging, oral exams have a significant positive impact on the development of students' communication skills, concept understanding and confidence. In this context, let's explore some of the advantages of oral exams (Delson, et al., 2016). First of all, oral exams allow for direct measurement of communication skills. Students are not only tested in relation to their knowledge, but also their ability to convey information clearly and effectively. This is in line with real-world needs where speaking and communication skills are highly valued. Through oral exams, students can practice and improve their ability to formulate ideas, frame arguments, and convey messages appropriately.

In addition, oral exams open up opportunities for direct interaction between teachers and students. The question-and-answer process that occurs during oral exams allows teachers to give immediate feedback, provide clarifications, and give guidance instantly. This creates a dynamic learning environment where students can correct their understanding immediately and respond to questions or challenges immediately (Almusaed et al., 2023). This interaction promotes deeper learning and allows teachers to better understand individual learning needs (Sølvik & Glenna, 2022).

Another advantage of oral exams is their ability to measure holistic understanding of concepts. Students are not only tested on their ability to memorize facts, but also their ability to apply that knowledge in a specific context. Oral exams can include open-ended questions that encourage students to think critically, analyze information, and relate concepts to real-world situations (Mahmud et al., 2023). This helps students develop a deeper and more relevant understanding of the subject matter. Aside from the academic aspect, oral exams also benefit the development of students' interpersonal skills. The

process of public speaking can help students overcome discomfort, increase confidence, and develop effective speaking skills. This is particularly beneficial in preparing students for situations outside the classroom, where the ability to communicate well is highly valued.

Oral exams also provide opportunities for students to express their opinions and views more freely. In an oral exam setting, students can feel freer to express their ideas without the constraints of a written format. This can create space for creative and innovative thinking and encourage students to develop their own views on the subject matter. In addition, oral exams create a more engaged learning experience. In the process of preparing for an oral exam, students are actively involved in discussing and exploring the subject matter. Discussions with peers or teachers can enrich students' understanding through the exchange of ideas and views. In this way, oral exams not only measure knowledge, but also stimulate an active and collaborative learning process.

It is important to remember that oral exams also pay attention to non-verbal aspects of communication, such as body language, voice intonation and facial expressions. This creates an opportunity for students to develop non-verbal communication skills, which are important in a variety of contexts, including the professional world. The ability to read and respond to non-verbal expressions is also an important skill that can be honed through oral exams (Riggio, 2006). In multicultural and multilingual contexts, oral exams can also help students to develop cross-cultural communication skills. The process of talking with teachers or classmates can increase students' sensitivity to cultural differences, provide opportunities to understand diverse perspectives, and open up space for inclusive dialog.

Oral exams have significant advantages in enriching students' learning experience. Through measuring communication skills, concept understanding and interpersonal skill development, oral exams bring long-term benefits to students' development inside and outside the classroom. Therefore, although they are considered challenging, it is important to recognize and utilize the advantages of oral exams as an integral part of the educational process.

Written Exam

Written exams are a form of academic evaluation that is commonly used at various levels of education. The definition of a written exam includes the process of measuring students' knowledge and skills through the use of written texts, be it in the form of multiple-choice questions, essays, written assignments, or other writing formats (Sparks et al., 2014). Written exams are a form of academic assessment that asks students to convey their knowledge or understanding in writing. This can involve various question types, such as multiple-choice questions, essays, written assignments, or a combination of these formats. The main purpose of a written test is to measure students' understanding of the subject matter, critical thinking skills, and ability to communicate in writing. Test as the process of measuring single or multiple concepts, under a set of predetermined conditions (Adom et al., 2020)

The written exam has several purposes, including (1). Measuring student understanding of the material that has been obtained. One of the main purposes of written exams is to measure the extent to which students understand the concepts taught in the curriculum. By providing written questions or assignments, teachers can evaluate students' understanding of a particular topic or lesson. (2) To encourage students' critical thinking skills. Written exams can be designed to encourage students to think critically. Essay questions or written assignments often ask students to analyze, evaluate, or synthesize information, spurring the development of their critical thinking skills (Ujihanti, 2016). (3) develop students' written communication skills. Written exams assist in the development of students' written communication skills. The process of composing answers or essays requires the ability to convey ideas in a clear, logical, and organized manner. (4) Assess

the application of concepts in real contexts. Written exams can design questions or tasks that test students' ability to apply learned concepts in real-world situations. This can give an idea of the extent to which students can transfer their knowledge to practical contexts.

Characteristics of Written Examinations

The characteristics of written exams provide an important foundation in designing and administering written assessments to measure students' ability to express their thoughts and knowledge. Through well-defined characteristics, written exams become effective instruments in illustrating students' level of understanding, analytical ability, and written communication skills. The main characteristics that underpin written exams include (1) a variety of question forms. One of the main characteristics of written exams is the variety of question formats that can be used. This includes a variety of question types, such as multiple choice, essay, short fill-in-the-blank, or project work. The variety of question formats gives teachers the flexibility to assess different aspects of students' abilities. Multiple choice questions, for example, can measure factual knowledge, while essays can reveal students' ability to analyze and synthesize information.

The variety of formats also provides opportunities for students with different learning styles to demonstrate their understanding; (2) Clear assessment criteria. Clear assessment criteria are an important aspect in the characteristics of written exams. By setting well-defined criteria, teachers can provide more specific and objective feedback on student performance. These criteria include aspects such as accuracy of answers, grammar, clarity of ideas, and analytical ability. Thus, students can understand the areas where they succeed and where they need to make improvements. Clear grading criteria also help ensure consistency in grading between different teachers; (3) Limited time. Another characteristic inherent to written exams is that they are time-limited. The time restriction creates a situation similar to real-world demands where efficiency and the ability to respond quickly become essential skills. This measures students' ability to manage time wisely, select questions to be answered first, and structure answers effectively within the time limit. Limited time also encourages students to focus on the subject matter and avoid wasting time on irrelevant details; (4) the importance of language and grammar. The ability to use language appropriately and good grammar are key elements in written exams. Students are expected to convey their thoughts clearly and logically (Moats, 2020). Word choice, good grammar, and proper sentence structure are important factors in the assessment.

This ability not only reflects students' written communication skills, but also shows the quality of thought execution and concept understanding possessed by students; (5) Ability to analyze and synthesize. Written exam questions are often designed to test students' ability to analyze and synthesize information. This creates an opportunity for students to demonstrate their critical thinking skills, namely the ability to break down information into smaller parts (analysis) and the ability to combine information from various sources into a new conclusion (synthesis) (Ramadhani et al., 2023).

This supports the development of higher-order thinking skills which is a major focus in education; (6) Application of concepts in real contexts. Written exams can design questions or tasks that test students' ability to apply learned concepts in real-world contexts. This creates relevance and gives an idea of the extent to which students can transfer their knowledge to practical situations. The ability to apply concepts in a relevant context is a strong indicator of deep understanding.

The characteristics of written exams, which include a variety of question formats, clear assessment criteria, limited time, proficiency in language and writing, the ability to analyze and synthesize, and the application of concepts in real-world contexts, provide a strong foundation for measuring students' abilities. By understanding these characteristics, teachers can design effective written exams to measure student understanding and develop written communication skills needed in various aspects of life.

Advantages of Written Exams

Written examinations, as one of the evaluation methods in the education system, have a number of advantages that make them effective and relevant instruments. These advantages include aspects such as objectivity of assessment, measurement of deep understanding, development of written communication skills, and flexibility in the use of question formats. (1) Objectivity of assessment. Written exams tend to provide a high degree of objectivity in the assessment process. This is due to the fact that students' answers can be assessed with reference to clear and well-defined assessment criteria. In multiple-choice questions, correct and incorrect answers can be measured directly (Dikli, 2003). Even in essays, with good scoring criteria, teachers can give consistent and objective assessment of each answer. (2) Measurement of deep understanding. One of the striking advantages of written exams is their ability to measure students' deep understanding of the subject matter. Essay-like question formats allow students to explain, analyze, and synthesize information in greater detail than in multiple-choice question forms. Students are given the opportunity to express their understanding thoroughly, creating a more accurate picture of the extent to which they understand the concepts taught. (3) Development of written communication. Written exams play an important role in the development of students' written communication skills. Through the preparation of essay answers or other written assignments, students are encouraged to convey their ideas and arguments clearly and logically.

This process assists students in building effective writing skills, including word selection, grammar, and sentence structure. These skills are valuable in educational contexts as well as in everyday life. (4) Flexibility in the use of question formats. Written exams have the advantage of flexibility in question format. Teachers can choose from a variety of question formats, such as multiple choice, essay, short form, or project task, according to the purpose of the evaluation and the characteristics of the subject matter. This variety of question formats allows for a comprehensive and thorough assessment of a wide range of student abilities. Students with different learning styles can be measured in a way that suits them best. (5) Measurement of critical thinking skills. Written exams, especially essays, provide a good platform for measuring students' critical thinking skills. In answering open-ended questions, students must analyze information, evaluate arguments, and develop their own thinking. This critical thinking process is not only beneficial in an educational context, but also an important provision in facing the challenges of everyday life and future careers (Moon, 2008). (6) Encourage independence and creativity. In answering written exams, students are often faced with tasks that require independence and creativity. They need to be able to formulate their own answers, construct original arguments, and express their ideas in unique ways.

This can stimulate students' creativity and give them the opportunity to develop new ideas. (7) Deep understanding of students' thinking process. Written exams provide a deep understanding of students' thought processes. Teachers can see how students structure their answers, whether they follow consistent logic, and the extent to which they are able to link concepts in their answers. This provides valuable insight into the cognitive aspects of students that are difficult to measure with other assessment methods. (8) Individualized consideration in assessment, written exams provide room for individualized consideration in assessment. In assessing essay answers, teachers can understand the context and students' views more holistically. Although there are clear grading criteria, teachers have the flexibility to consider students' individual frameworks and approaches to responding to questions.

Written exams have a number of significant advantages in evaluating student understanding, developing written communication skills, and preparing students for real-world demands (Defazio et al., 2010). Clarity of assessment, flexibility of format, and development of communication skills are some of the aspects that make written exams a valuable evaluation instrument in education. While written exams have a number of

advantages, there has been some criticism regarding their inability to measure practical skills or the ability to communicate orally. Therefore, many modern curricula try to incorporate various forms of assessment, including oral exams, practical projects, and presentations, to provide a more comprehensive picture of students' abilities.

Student Response

The definition of student response includes various aspects of responses, attitudes and reactions that arise from students to learning experiences and the academic environment. Student responses are not only limited to academic aspects, but also include responses to social interactions, teaching methods and other factors that influence their learning experience at higher education institutions (Hollister et al., 2022). In general, student responses include reactions to learning, assessment and teaching in the classroom. This factor involves students' understanding of learning materials, satisfaction with lecturers' teaching methods, and evaluation of the format of exams and assignments. In this context, students' responses reflect their understanding of education as a process and how it affects their academic and personal development.

One of the student responses relates to the evaluation of assessment forms, including exams, assignments and projects. Students may respond with satisfaction or disappointment depending on the extent to which they feel that the assessment is fair and reflects their understanding of the material (Deeley et al., 2019). Feedback from lecturers can also play a key role in shaping students' responses to their evaluation results. Student response encompasses a complex dynamic of multiple factors that influence how students respond to their learning experience. Involving academic, social, emotional and technological aspects, this understanding helps educational institutions design environments that support students' holistic growth and development. By understanding student responses more deeply, educational institutions can design better strategies and policies to enhance the learning experience and create optimal conditions for student academic success (Munna & Kalam, 2021).

Higher education is a critical stage in students' academic and professional development. One important component in the evaluation of learning achievement is examinations, which serve as a measure of students' ability to understand and apply the subject matter. In this context, the two forms of evaluation commonly faced by students, both at the undergraduate and postgraduate levels, are written and oral examinations. Students' responses to these two types of exams are an interesting phenomenon that reflects their challenges and successes in dealing with various evaluation methods.

Factors Affecting Student Response

Student responses to written and oral examinations in the context of higher education are the result of the interaction of various factors that create a unique dynamic in the evaluation process (Gray & Diloreto, 2016). An in-depth understanding of these factors is essential to creating an examination environment that supports students' academic growth and comprehensive skill development. Some of the key factors that influence students' responses to written and oral examinations include preparation, confidence, and type of evaluation, learning preferences, and emotional factors. (1) Student preparation. One of the main factors affecting students' responses to written and oral examinations is their level of preparation. Students who seriously prepare, engage in active learning, and have a deep understanding of the exam material may be more likely to respond with confidence and skill. Preparation includes not only understanding concepts, but also practicing specifically for certain types of evaluations. (2) Self-confidence is also a key factor in student responses. Self-confidence Students who are confident in their ability to express ideas in writing or orally may face the exam more calmly and positively. Conversely, students who lack confidence or have social anxiety may experience greater stress when tested orally. Support from lecturers, classmates and other resources can play an important role in helping to boost students' confidence.

The type of evaluation also has a significant impact on student responses. Written exams often emphasize the ability to express ideas in writing, construct arguments, and provide detailed answers. Meanwhile, oral exams highlight verbal communication skills, spontaneous responses, and clarity of presentation. Students may respond differently depending on their preferences and strengths in each type of evaluation. Some students may be more comfortable with written exams because they can think through their answers, while others may excel at conveying their thoughts orally. (3) Students' learning preferences are also an important factor. Students who tend to learn better through practical experience or observation may show better responses to written exams, where they can explore concepts in more depth. Meanwhile, students who utilize verbal power and social interaction may respond more positively to oral exams. Lecturers can consider students' learning styles in designing and delivering exams to create a more suitable and effective experience. (4) Emotional factors. Emotional factors also play a role in shaping students' responses to written and oral exams. Anxiety, stress or fear of assessment can significantly affect student performance. Emotional support from lecturers and a supportive learning environment can help students overcome this pressure. On the other hand, students who feel confident and motivated may approach exams with a positive response, seeing them as an opportunity to gauge their understanding and demonstrate their knowledge. (5) Environmental factors. Exam environment factors also have an impact on students' responses. A conducive classroom atmosphere, clear instructions, and equality of treatment during the exam can shape students' experience. The sustainability of the exam environment with consistent and transparent policies can give students a sense of fairness and help them respond positively to the evaluation.

In addition to these factors, previous experience can also influence students' responses. Students who have had positive or successful experiences in written or oral examinations may respond more positively in the future. Conversely, previous negative experiences or failures may create anxiety or uncertainty. It is important to note that these factors are not mutually exclusive and often interact with each other. For example, students who prepare well (preparation factor) may tend to be more confident (confidence factor) and have more positive responses to written or oral examinations. Lecturers and educational institutions need to understand the complexity of these dynamics to create an evaluation environment that supports student growth.

Students' responses to written and oral exams are the result of a number of interconnected factors. From preparation and confidence to the type of evaluation and emotional factors, all contribute to a student's experience of academic evaluation. Lecturers, as learning facilitators, can play a key role in creating conditions that support positive responses and help students achieve their academic success.

Research Method

This research method involves a series of steps and techniques designed to collect relevant data (Taherdoost, 2022), analyze findings, and conclude research results with the aim of providing in-depth insights using qualitative descriptions to measure student responses to the types of assessments used by lecturers in lectures involving all Biology Education study program students with a sample in this study totaling 60 people using a questionnaire including structured and semi-structured questions designed to explore student perceptions, emotions, and preferences related to student responses which include aspects of the level of preparation before the exam by students and lecturers and the type of evaluation used. The research procedure will include the stages of data collection, data analysis, and interpretation of results. Students who agree to participate will be administered. After the data is collected, the data will be analyzed to determine the students' responses in order to draw conclusions.

Results and Discussion

Research Results

This study involved 60 Biology Education study program students in the third and fifth semesters. The first semester students have not been involved in this study because they have not experienced the implementation of written and oral exams before. The results of this study are grouped into 4 parts, namely student preparation, lecturer teaching preparation, learning process, and learning evaluation as follows.

Student preparation

Student preparation in learning includes the media used, learning resources, students' ability to do assignments, and students' self-preparation before the lecture takes place.

Table 1. Student preparation in learning

Number	Question	Answer	Frequency	Percentage (%)
1	Do you have learning media such as cell phones, laptops, and other media in learning?	a. Mobile phone	60	100
		b. Laptop and mobile phon	40	66,67
		c. Laptop	25	41,67
		d. Other	10	16,67
2	Do you have learning resources that are appropriate to the lecture material?	a. Printed book	15	25
		b. Teaching module	10	16,67
		c. Internet	40	66,67
		d. Other	5	8,33
3	Do you do and submit assignments given by the lecturer?	a. Yes	60	100
		b. No	0	0
4	Do you prepare yourself well before attending lectures?	a. Yes	55	91,67
		b. No	5	8,33

In this study, it was found that 100% of students have learning media in the form of cellphones, 66.67% have laptops and cellphones, 41.67% have laptops and 16.67% other media. In addition, students have learning resources that are in accordance with lecture material, namely 25% of students have printed books, 16.67% have teaching modules, 66.67 % are sourced from the internet, and 8.33% other sources. When lecturers give assignments to be done and collected, 100% of students do and collect assignments given by lecturers.

Teaching Preparation

Teaching preparation is related to information on the lecture schedule before the lecture is held and the provision of material before the lecture.

Table 2 Lecturer Teaching Preparation

Number	Question	Answer	Frequency	Percentage (%)
1	Do lecturers communicate	Yes	25	41,67

	the lecture schedule to students?	No	35	58,33
2	Do lecturers deliver the lecture schedule before the scheduled lecture takes place?	Yes	10	16,67
		No	50	83,33
3	Do lecturers provide a recovery contract with students?	Yes	60	100
		No	0	0
4	Do lecturers distribute Semester Course Design (SSP) to students?	Yes	45	75
		No	15	25
5	Do lecturers distribute groups to students according to the SSP to present lecture material?	Yes	50	83,33
		No	10	16,67
6	Do lecturers distribute materials according to the RPS to each group formed?	Yes	60	100
		No	0	0
7	Do lecturers prepare facilities and infrastructure before the lecture starts?	Yes	50	83,33
		No	10	16,67
8	Do lecturers announce the assessment criteria to students at the beginning of the meeting?	Yes	60	100
		No	0	0
Average			Yes	75
			No	25

At the stage of preparation of teaching lecturers, the results showed that 75% of lecturers made teaching preparations according to the questions asked in this study and only 25% of lecturers were not maximized in making teaching preparations.

Implementation of Evaluation

The implementation of this evaluation is related to the tests used by lecturers in measuring students' abilities on the lecture material that has been presented. This test includes written tests and oral tests. Student responses to these two types of tests can be seen in the following table 3.

Table 3. Student Response to Written Tests and Oral Tests

Number	Question	Answer	Frequency	Percentage (%)
1	Does the lecturer provide a final evaluation of the lecture process?	Yes	60	100
		No	0	0

2	Is the type of evaluation or test used by the lecturer a written test?	Yes	45	75
		No	5	25
3	Is the type of evaluation or test used by the lecturer an oral test?	Yes	5	25
		No	45	45
4	Which type of evaluation or test do you prefer?	Yes	50	83,33
		No	10	16,67

Table 3 shows that Biology students prefer oral tests (83.33%) when compared to written tests (16.67%). This has certain reasons from students who choose the exam to be done orally. The results of the confirmation of this question obtained information that students feel that by giving oral exams they are more challenged to learn and recall all the material that has been taught and hone their ability to think and reason critically to the questions asked by the lecturer. In addition, students think that by taking an oral exam, they are more challenged to prepare themselves carefully for the exam by studying lecture material from various learning resources.

Discussion

Higher education is an important stage in shaping and developing students' academic abilities (Bashir et al., 2016). One common form of evaluation in higher education is examinations, both in oral and written form. Students' responses to the implementation of oral and written exams can provide valuable insights into the effectiveness of these evaluation methods. In particular, in the context of Biology Education Study Program students, this aspect becomes more interesting due to their involvement with complex and diverse materials.

The results of this study show a variety of student responses to oral and written exams. Overall, it illustrates that students prefer oral exams over written exams. Students' responses to oral and written examinations reflect the complex dynamics of their learning experiences. While some students may prefer one form of evaluation over another, it is important for lecturers to understand variations in individual preferences and needs. By creating an evaluation atmosphere that supports and considers individual differences, testing can become a more effective means of measuring biology students' understanding and abilities.

The results of this study are also in line with those conducted by Theobold who concluded that oral exams excel not only in their ability to differentiate student understanding, but also in the freedom of expression they permit. Although they are potentially more time-intensive than a written exam, the wealth of information they provide instructors is unparalleled. Furthermore, I believe oral exams have the ability to increase student self-efficacy and sense of belonging (Theobold, 2021). Another study concluded that student feedback suggests that oral assessments are promising alternatives or additions to existing forms of assessment (Sabin et al., 2021).

As an assessment tool, oral examinations allow for more thorough evaluation of students' content mastery, problem-solving skills, and conceptual misunderstandings and provide students the opportunity to practice one-on-one oral communication (James & Campbell, 2023). Potential of oral examinations could be taken advantage of in order to enhance active learning and learning outcomes (Karlton & Karlton, 2014). Students enjoyed the

unique conversational style, and indicated that the oral exam was of comparable difficulty to a written exam, though they spent more time preparing (Ohmann, 2019)

Oral examinations involve direct interaction between the student and the lecturer or examiner (Mardiningrum & Ramadhani, 2022). Students are asked to answer questions orally or deliver a presentation on a specific topic. Oral exams provide an opportunity to assess speaking, communication and quick thinking skills (Burke-smalley, 2014). In addition, it creates an environment where students can defend their views or ideas verbally. The main advantage of an oral exam is its ability to evaluate students' communication and presentation skills. Students can demonstrate their speaking skills, in-depth knowledge, and argumentation skills. Oral exams also provide an in-depth experience in dealing with pressure and interacting directly with the lecturer (Fitzgerald, 2016; Vonen et al., 2023).

However, oral exams also have some pitfalls. Some students may feel anxious or lack confidence in delivering their answers verbally. Time constraints in oral exams can also be a challenge, especially if students need more time to formulate answers verbally. It is important to remember that the preference between written and oral exams may vary depending on individual student characteristics. Some students may feel more comfortable and able to express themselves in writing, while others may find their strength in speaking and communicating orally. In a holistic educational context, a combination of written and oral exams can be an effective approach. Lecturers can design evaluation strategies that include both to provide a more complete picture of students' abilities. By providing variety in evaluation methods, lecturers can create diverse learning experiences and support the development of all aspects of students' academic and professional abilities.

Conclusion

Written and oral exams each have advantages and disadvantages. Choosing the right type of exam should consider the learning objectives, student characteristics, and lecturers' evaluation skills. By understanding the differences between the two, the evaluation system can be more balanced and support students' holistic development. The results of this study prove that students prefer oral exams. The reason they prefer oral exams is because students feel that by giving oral exams they are more challenged to learn and recall all the material that has been taught and hone their ability to think and reason critically to the questions asked by the lecturer. In addition, by taking an oral exam, they are more challenged to prepare themselves carefully for the exam by studying lecture material from various learning sources and having high motivation and self-confidence.

Acknowledgments

The researchers would like to thank the students in the Biology Education Study Program who have taken the time to fill out the questionnaire and are also willing to be confirmed regarding the questionnaire filled out. We also thank the leaders of the Study Program, Faculty and University, who have facilitated administratively related to the needs of conducting research.

References

- Adom, D., Mensah, J. A., & Dake, D. A. (2020). Test , measurement , and evaluation : Understanding and use of the concepts in education. 9(1), 109–119. <https://doi.org/10.11591/ijere.v9i1.20457>
- Almusaed, A.; Almssad, A.; Yitmen, I.; Homod, R.Z. Enhancing Student Engagement: Harnessing “AIED”’s Power in Hybrid Education—A Review Analysis. *Educ. Sci.* 2023, 13, 632. <https://doi.org/10.3390/educsci13070632>

- Bashir, A.M., Kabir, R. & Rahman, I. (2016). The Value and Effectiveness of Feedback in Improving Students' Learning and Professionalizing Teaching in Higher Education. *Journal of Education and Practice* 7(16), 38–41. <https://files.eric.ed.gov/fulltext/EJ1105282.pdf>
- Bovill, C., & Woolmer, C. (2019). How conceptualisations of curriculum in higher education influence student-staff co-creation in and of the curriculum. *Higher Education*, Springer 407–422. <https://doi.org/10.1007/s10734-018-0349-8>
- Burke-Smalley, L.A. (2014). Using Oral Exams to Assess Communication Skills in Business Courses. *Business and Professional Communication Quarterly*. 77. 266-280. <https://doi.org/10.1177/2329490614537873>
- Deeley, S. J., Fischbacher-smith, M., & Karadzhev, D. (2019). Exploring the 'wicked' problem of student dissatisfaction with assessment and feedback in higher education. *Higher Education Pedagogies*, 4(1), 385–405. <https://doi.org/10.1080/23752696.2019.1644659>
- Defazio, J., Jones, J., Tennant, F., & Hook, S. A. (2010). Academic literacy : The importance and impact of writing across the curriculum – a case study. 10(2), 34–47.
- Delson, N., Baghdadchi, S., Ghazinejad, M., Lubarda, M., Minnes, M., Phan, A.M., Schurgers, C., & Qi, H. (2016). Can Oral Exams Increase Student Performance and Motivation?. *ASEE Annual Conference Excellence Through Diversity*, American Society for Engineering Education.
- Dikli, S. (2003). Assessment at a distance : Traditional vs . Alternative Assessments. 2(3), 13–19. <https://files.eric.ed.gov/fulltext/EJ1101956.pdf>
- Febriza, A., & Fitria, A. (2022). CASE STUDY ANALYZING THE ASSOCIATION OF ORAL EXAM WITH SOCA AND WRITTEN TEST USING MCQ ON MEDICAL STUDENTS. 11(4), 444–450. <https://doi.org/10.22146/jpki.43063>
- Fitzgerald, C. W. (2016). The Pros and Cons of Oral Examinations in Undergraduate Education. 1–10. https://www.westpoint.edu/sites/default/files/inline-images/centers_research/center_for_teching_excellence/PDFs/mtp_project_papers/Fitzgerald_16.pdf
- Foote, A.L. (2016). ORAL EXAMS: Preparing For and Passing Candidacy, Qualifying, and Graduate Defenses. Printed and bound in the United States of America, Copyright by Elsevier Inc. All rights reserved. <https://dl.acm.org/doi/pdf/10.5555/2843517>
- García-Aracil, A., Monteiro, S., & Almeida A.S., (2021). Students' perceptions of their preparedness for transition to work after graduation. *Sage Journals*, 22 (1), 49 -62. <https://doi.org/10.1177/1469787418791026>
- Gray, J. A., & Diloreto, M. (2016). The Effects of Student Engagement , Student Satisfaction , and Perceived Learning in Online Learning Environments. *NCPEA International Journal of Educational Leadership Preparation*, 11(1). <https://files.eric.ed.gov/fulltext/EJ1103654.pdf>
- Hollister B, Nair P, Hill-Lindsay S and Chukoskie L (2022) Engagement in Online Learning: Student Attitudes and Behavior During COVID-19. *Front. Educ.* 7:851019. <https://doi.org/10.3389/educ.2022.851019>
- James, A. R. S., & Campbell, D. (2023). Inquiry in oral communication: adapting oral examinations for teaching introductory physiology students to evaluate scientific research studies. 14853, 192–202. <https://doi.org/10.1152/advan.00087.2019>
- Javaid, M., Haleem, A., Pratap, R., Khan, S., & Haleem, I. (2023). BenchCouncil Transactions on Benchmarks , Standards and Evaluations Unlocking the opportunities through ChatGPT Tool towards ameliorating the education system. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 3(2), 100115. <https://doi.org/10.1016/j.tbench.2023.100115>
- Johnson, D. (2017). The Role of Teachers in Motivating Students To Lear. *BU Journal of Graduate Studies in Education* 9(1), 46-49. <https://files.eric.ed.gov/fulltext/EJ1230415.pdf>
- Kang, D., Goico, S., Ghanbari, S., Bennalack, K. C., Pontes, T., Brien, D. H. O., & Hargis, J. (2019). Providing an Oral Examination as an Authentic Assessment in a Large Section , Undergraduate Diversity Class. 13(2), 1–14.

- Karlton, A., & Karlton, J. (2014). Interactive Oral Assessment Supporting Active Learning. Proceedings of the 10th International CDIO Conference, Universitat Politècnica de Catalunya, Barcelona, Spain, June 16-19, 2014.
- Mahmud, M. S., Fasha, N., & Drus, M. (2023). The use of oral questioning to improve students' reasoning skills in primary school mathematics learning. May, 1–12. <https://doi.org/10.3389/feduc.2023.1126816>
- Mardiningrum, A., & Ramadhani, D. R. (2022). Classroom Oral Presentation: Students' Challenges and How They Cope. *Eralingua: Jurnal Pendidikan Bahasa Asing dan Sastra*, 6(1), 103–119.
- Moats, L. C. (2020). Speech to print language essentials for teachers. 1–11. http://slubdd.de/katalog?TN_libero_mab216782845
- Moon, J. (2008). *Critical Thinking: An Exploration of Theory and Practice*. First published 2008 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN. https://library.unismuh.ac.id/uploaded_files/temporary/DigitalCollection/M2I5YmE4YmVkZjY2Y2ZiYjQzMmViY2E3YjYxYjhmMTUxYWMyMmE3Yg==.pdf
- Morris, R., Perry, T., & Wardle, L. (2021). Formative assessment and feedback for learning in higher education: A systematic review. April, 1–26. <https://doi.org/10.1002/rev3.3292>
- Munna, A. S., & Kalam, M. A. (2021). Teaching and learning process to enhance teaching effectiveness: literature review. *International Journal of Humanities and Innovation (IJHI)*, 4(1), 1–4. <https://doi.org/10.33750/ijhi.v4i1.102>
- Ohmann, P. (2019). An Assessment of Oral Exams in Introductory CS. In SIGCSE '19: 50th ACM Technical Symposium on Computer Science Education, February 27–March 2, 2019, Minneapolis, MN, USA. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3287324.3287489>
- Rahman, G. (2011). Appropriateness of using oral examination as an assessment method in medical or dental education. 1(2). <https://doi.org/10.4103/0974-7761.103674>
- Ramadhani, N., Salija, K., Baa, S., Inggis, J. B., & Makassar, K. (2023). The correlation between students' critical thinking skills and their reading comprehension at undergraduate study program english department faculty of languages and literature universitas negeri. *Klasikal: Journal of Education, Language Teaching and Science*, 5(1), 25–36. <http://eprints.unm.ac.id/29183/2/28-Nurul%20Ramadani-2023.pdf>
- Riggio, R. E. (2006). Nonverbal skills and abilities. 79–98. https://www.sagepub.com/sites/default/files/upm-binaries/12330_Chapter5.pdf
- Sabin, Mihaela; Jin, Karen H.; and Smith, Adrienne, "Oral Exams in Shift to Remote Learning" (2021). Proceedings of the 52nd ACM Technical Symposium on Computer Science Education. 64. https://scholars.unh.edu/unhmcis_facpub/64
- Sølvi, R. M., & Glenna, A. E. H. (2022). Teachers' potential to promote students' deeper learning in whole-class teaching: An observation study in Norwegian classrooms. *Journal of Educational Change*, 23(3), 343–369. <https://doi.org/10.1007/s10833-021-09420-8>
- Sparks, J. R., Song, Y., Brantley, W., & Liu, O. L. (2014). Assessing written communication in higher education: Review and recommendations for next-generation assessment (ETS Research Report No. RR-14-37). Princeton, NJ: Educational Testing Service. doi:10.1002/ets2.12035 <https://files.eric.ed.gov/fulltext/EJ1109266.pdf>
- Taherdoost, H. (2022). Data Collection Methods and Tools for Research; A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects. *International Journal of Academic Research in Management (IJARM)*, 10 (1), 10-38. fihal-03741847f =
- Theobald, A. S. (2021). Oral Exams: A More Meaningful Assessment of Students' Understanding Oral Exams: A More Meaningful Assessment of Students' Understanding. *Journal of Statistics and Data Science Education*, 29(2), 1–12. <https://doi.org/10.1080/26939169.2021.1914527>

- Ujihanti, M., Meirani, W., & Evawati, N.M. (2016). Critical Thinking Models And Reading Comprehension Instruction: A Theoretical Study. *Journal Polstri*, 1- 10. <https://jurnal.polsri.ac.id/index.php/holistic/article/view/662/497>
- Vonen, M. N., Solem, M. S., & Skovholt, K. (2023). Managing students ' insufficient answers in oral examinations. *Classroom Discourse*, 14(3), 258–280. <https://doi.org/10.1080/19463014.2022.2079694>