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The Influence of Feedback Learning on Student Engagement and Student Performance

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Research Article

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Abstract

Background/purpose. The paradigm shift in education from lecturer-centered to student-centered learning demands an approach that involves students more actively. In this context, providing feedback becomes a crucial element in improving student engagement and academic performance; therefore, it is necessary to examine its strategic role in supporting the effectiveness of learning in higher education.

Materials/methods. The method employed is a quasi-experimental design with a Pretest-Posttest Control Group Design approach, involving 30 students from four classes who received both positive and negative feedback. The analysis used is the independent t-test.

Results. Based on the independent t-test analysis, there is a statistically significant difference in engagement between classes given positive and negative feedback with grades (Sig. = 0.012 < 0.05). This shows that the way lecturers provide feedback to students can affect their level of engagement in the learning process. The performance of students given positive and negative feedback is not significant (Sig. = 0.102 > 0.05). This means that statistically, the type of feedback (positive or negative) does not show a strong enough influence on student performance results.

Conclusion. Positive feedback significantly increased student engagement in learning compared to negative feedback. Providing feedback, both positive and negative, had no significant impact on student academic achievement.

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1. Introduction

Student involvement in learning is a crucial factor that influences their academic success and intellectual development (Svanum & Bigatti, 2009). Students with a high level of engagement tend to exhibit better learning motivation (Kong, 2021), participate more actively in discussions, and demonstrate a deeper understanding of the course material. Engagement in learning not only includes active participation in class but also involves emotional and cognitive aspects that support an effective learning process. When students feel engaged, they are more motivated to develop critical thinking skills (Yuan et al., 2020), complete tasks well, and achieve better academic results. Academic performance is another equally important aspect in assessing the effectiveness of the learning process (Honicke & Broadbent, 2016). Student performance is often measured through academic grades, the ability to complete assignments, and the level of understanding of the material. Good academic performance reflects the extent to which students are able to internalize and apply the knowledge acquired during their studies. However, various studies reveal that many students face obstacles in achieving optimal academic results, especially when they do not receive clear and constructive feedback on their learning.

Student engagement and performance in learning are crucial aspects that determine the effectiveness of the educational process. Students who are actively engaged in the learning process tend to have a better understanding, sharper critical thinking skills, and higher academic achievements. However, in practice, not all students have optimal levels of engagement and academic performance, so strategic interventions are needed to improve these aspects. The intervention can take the form of feedback, which plays a crucial role in enhancing student engagement and academic performance. Feedback that is provided in a timely, clear, and constructive manner can help students understand their strengths and weaknesses, as well as provide motivation to improve their academic performance. One of the approaches that has been extensively researched in improving engagement and academic performance is the provision of feedback. Effective feedback can provide clear guidance to students, enhance their learning motivation (Jørgensen, 2019), and help them understand areas that need improvement. However, the implementation of optimal feedback still faces various challenges. The study by Prabhu et al. (2020) demonstrates that non-specific, delayed, or non-constructive feedback frequently leads to students losing motivation and confidence in their learning. Furthermore, Ngwenya's (2019) research revealed that in the context of education.

Feedback also enables lecturers and students to improve their performance in the learning process (Van Rompay-Bartels & Geessink, 2023). In the ongoing learning process, feedback is very important because it can facilitate interaction between lecturers and students (Attiogbe et al., 2023). This interaction plays a crucial role in fostering critical thinking and deep learning within the context of higher education. Therefore, feedback strategies that can strengthen interaction and information exchange between lecturers, students, and colleagues are crucial for enhancing student engagement in the ongoing learning process (Morris et al., 2023b). From a global perspective, feedback is considered an essential element for the success of learning (Ifenthaler & ŞAHİN, 2023). For example, in the United States, activities such as assigning tasks, self-evaluation, peer assessment, and periodic assignments with direct feedback are considered effective strategies and important factors in education (Lubuva et al., 2024). Similarly, (Gopinath, 2015b) notes that feedback is a helpful mechanism and a key factor in the success of learning. Thus, feedback is understood as an interaction between students (peers) or as something produced by the students themselves. Furthermore, in an Australian study, it was found that feedback encourages peer engagement and subsequently enhances student learning (Moore & Teather, 2013).

Then, the problems currently occurring in the education sector, as seen from the survey results (Cyberthreat.id), indicate that there are weaknesses in online learning at present. The number of

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respondents interviewed was 237,193 students from various universities in Indonesia. Female students were the majority of respondents, accounting for 67.42 percent, while male students made up 32.58 percent. The majority of students were from the 2019 cohort (37.50%), followed by the 2018 cohort (28.58%) and the 2017 cohort (23.17%). This data provides insights into the learning experiences of students over the past four years, which can reflect the effectiveness of the teaching methods applied. Then, this data highlights the challenges faced by educational institutions in collecting representative feedback and using it effectively to improve the quality of learning. The lack of participation from certain groups and student cohorts can hinder the necessary improvement efforts. To address the phenomenon of low learning feedback, an in-depth analysis involving learning feedback on students' perceptions and experiences is necessary. This can be done through interviews, focus group discussions, more targeted surveys, and comprehensive evaluations of educational policies and practices in higher education.

Therefore, feedback is very valuable when providing guidance to students to improve self-regulation (Mohamed Hashim et al., 2024; McKellar et al., 2020). This feedback strategy impacts the improvement of students' learning and academic performance (Ion et al., 2019). Challenging feedback also encourages reflective thinking (Gopinath, 2015a) and is very important for mature learners (Henderson et al., 2019). It is argued that providing feedback is a challenge; a related study conducted in Hong Kong by Espasa et al. (2018) reported a lack of understanding about feedback by students and instructors in higher education. However, with the emergence of discussions or learning combinations such as chat rooms, forums, or video meetings, they can be utilized. These tools can facilitate a rich feedback experience for both lecturers and students. Class participants showed that the selection of the right tools enables quick feedback and enhances student-faculty participation.

The study on the role of feedback in improving students' academic competence has long been believed by education practitioners. This refers to the theory of entity intelligence and social comparison (Jonsson & Beach, 2012). Feedback in the form of praise includes positive evaluations, work achievements (products, appearance, and other attributes (Jonsson & Beach, 2012). Several educational studies mention that feedback activities among prospective teachers, mentors, and supervisors can enhance students' academic competence (Prilop et al., 2019; Prilop et al., 2021a). Feedback is the main source of self-efficacy improvement. Basically, there are three categories of feedback: positive feedback, neutral/balanced feedback, and negative feedback. Good behavior and social comparison will encourage prospective teachers to conduct more meaningful learning (Prilop et al., 2021a).

The concept of feedback learning is rooted in various learning theories, such as behaviorism, constructivism, and cognitivism (Chen et al., 2021; Bian & Zhou, 2022). In behaviorism theory, feedback is viewed as a stimulus that provides information about the responses generated by students to actions or responses. Meanwhile, in constructivism, feedback is considered a tool that helps students build their own understanding through reflection on learning experiences (Asher & Hibbard, 2020). With the advancement of this learning theory, the role of feedback in enhancing learning effectiveness is increasingly recognized. The shift in educational paradigms also affects the emphasis on the use of feedback in higher education (Hiebert et al., 2019). In the past, education tended to be more centered around a lecturer-oriented teaching model, where lecturers actively taught and students passively received information. However, this paradigm has shifted towards a more student-centered approach, which emphasizes student engagement in the learning process (Picallo et al., 2022). In this context, feedback becomes key in helping students improve their understanding and academic performance. This reflects the importance of using feedback to support an effective and sustainable learning process in higher education.

Research on the effects of positive and negative feedback on engagement and student performance has found that positive feedback can increase students' perceived competence and

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intrinsic motivation (Vallerand et al., 2016). Research by Hurlock shows that consistently praised children experience improved performance compared to those who are reprimanded or ignored (Henderlong & Mark R Lepper, 2002). Other research shows positive feedback causally improves subsequent performance, while negative feedback has no significant impact (Goller & Späth, 2024). Collaborative experiments combined with structured feedback significantly increase engagement both cognitively and behaviorally and increase students' self-confidence (Ramadan et al., 2024). Research in China with 402 vocational students in China showed that perceptions of both positive and negative feedback directly affect online engagement (Cao & Cheon-Woo Han, 2024). Although feedback generally improves performance, about one-third of feedback interventions (negative feedback) decrease performance (Cutumisu & Schwartz, 2018). In the context of higher education, negative feedback often elicits negative emotions such as sadness, anger, and anxiety in instructors, which can affect the effects of subsequent feedback (Mendzheritskaya et al., 2025). Other research has found that self-praise ("You are great") is the least effective and risks reducing the potential for improvement, as it does not provide enriching information about the task or process. At the self-level, negative feedback or disconfirmation is more impactful than praise, as it can trigger deeper reflection (Hattie & Timperley, 2007a). Another study found that excessive praise for children with low self-esteem tends to cause them to avoid challenges for fear of not meeting high standards (Brummelman et al., 2016). Recent research Experimental research using Generative AI has shown that emotionally enriched feedback can reduce negative emotions such as anger but does not directly increase engagement or work quality (Alsaiari et al., 2024).

Although the literature has demonstrated the importance of feedback in supporting student engagement and academic performance, there are a number of gaps that have not been fully addressed by previous research, particularly in the context of online learning in higher education. Thus, this study examines in more depth the differential impact of positive and negative feedback on engagement and academic performance, particularly in the context of online learning. Two primary research questions are addressed to address these gaps:

Question 1: There is a significant difference in student engagement with positive and negative feedback.

Question 2: There is a significant difference in academic performance of students with positive and negative feedback.

2. Literature Review

2.1. Effect of Feedback Learning on Learning Engagement and Student Performance

Providing timely and high-quality feedback will encourage better student learning in higher education (Panadero et al., 2018). Groups that are given learning feedback have more systematic learning strategies so that they perform better (Vollmeyer & Rheinberg, 2005). Feedback related to the standards expected to be achieved by students can shorten the gap between students' current knowledge and the level expected by the instructor (Hattie & Timperley, 2007; Van der Kleij & Lipnevich, 2021). Feedback provided by teachers will affect student engagement in learning (K. Handley et al., 2011). The Feedback Learning Theory emphasizes the importance of feedback in the learning process as a tool to enhance students' understanding, engagement, and academic performance (Yang et al., 2021). Feedback in learning is not just a correction of mistakes, but also an interactive process that helps students reflect on their understanding and continuously improve their performance. According to Sadler (1989), effective feedback must meet three main elements: providing information about the gap between current performance and expected goals, offering clear guidance for improvement, and encouraging students to take action based on the feedback given (Hattie & Timperley, 2007; Thurlings et al., 2013).

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Feedback can encourage student engagement with academic tasks (Zhang & Hyland, 2018). Academic engagement is a psychological construct consisting of affective, behavioral, and cognitive dimensions as a form of academic commitment (Lam et al., 2014). The Self-Determination Theory explains that student engagement is influenced by three basic psychological needs: autonomy (freedom in learning), competence (the ability to understand and master the material), and social relatedness (interaction with peers and lecturers) (Ryan & Deci, 2000). Academic engagement plays an important role in supporting academic achievement (Lei et al., 2018). Academic performance is the achievement of students in the learning process that reflects the level of understanding, skills, and competencies acquired during their studies. The theory of academic performance explains that students' learning outcomes are influenced by various factors, including cognitive abilities, motivation, learning environment, and interactions with lecturers and peers. Piaget's cognitive theory emphasizes that students' intellectual development depends on how they adapt to new concepts (Sidik, 2020), while Vygotsky's constructivist theory highlights the importance of social interaction in enhancing academic understanding.

Studies have shown a stronger relationship between feedback variables of student engagement and academic performance. Student engagement can play a mediating or moderating role when predicting academic performance (Máñez et al., 2024). Feedback fosters positive perceptions in students and improves their academic performance (Mahoney et al., 2019). While recent studies have found that feedback positively affects academic outcomes, especially when students have low levels of academic engagement (Máñez et al., 2024).

3. Methodology

3.1. Participants

The data in this study were randomly selected from two universities with the same criteria, namely PTNBH (State University with Legal Entity). The following is the distribution of data based on respondent characteristics:

Table 1. Respondents Based on Course

Class	Location		Treatment	Total Students
Control Class	Surabaya University	State	Without feedback learning	30
Control Class	Padang University	State	Without feedback learning	30
Experimental Class	Surabaya University	State	Positive feedback learning	30
Experimental Class	Padang University	State	Positive feedback learning	30
Experimental Class	Surabaya University	State	Negative learning feedback	30
Experimental Class	Padang University	State	Negative learning feedback	30

Source: Processes primary data (2024)

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The first control class is located at Surabaya State University, and the second class is located at Padang State University. Both classes apply positive feedback and negative feedback treatments using a case study approach. Both classes implement a feedback-based learning model, which allows for interaction between teachers and students as well as continuous feedback to improve students' understanding of the subject matter. This treatment has a total of the same number of students, which is 30 people each. The criterion used in this study is PTNBH, an abbreviation for "Perguruan Tinggi Negeri Berbadan Hukum/ Autonomous Public University," which refers to the level of student learning performance in understanding and applying the taught subject matter. By using this criterion, the researchers will measure and compare the students' learning performance from the four classes after participating in the lessons for a certain period.

3.2. Instruments

To obtain data in this study, the author administered tests to both sample classes at the beginning and end of the research. The test given corresponds to the material taught to the students during the treatment period in the form of objective multiple-choice tests. To obtain good data, the test must be valid and reliable. Then the instrument used in this research is a questionnaire. The questionnaire used in this study is employed to measure the affective content. The measurement scale used is a five-point Likert scale derived from Fredricks et al (Fredricks & Paris, 2004). Affective content is manifested in three dimensions: behavioral, emotional, and cognitive engagement. Assessment and Feedback are conducted at each meeting. Each meeting consists of formative assessments, such as discussion forums and reflection tasks, and summative assessments, like case studies with an applied approach. The type of feedback is constructive and affirmative (reinforcement-based) to build students' confidence and learning motivation.

3.3. Procedures

This research uses a type of quantitative research with a quasi-experimental design method using the Pretest-Posttest Control Group Design, because in this design, the researcher can control all external variables that affect the course of the experiment (M. A. Handley et al., 2024). This research explores the research question using a six-week mixed longitudinal design. This means that the researchers will collect data repeatedly over a six-week period to gain a better understanding of the phenomenon being studied. During the six-week period, this research also involves a repeated measure quasi-experimental design, meaning that the research subjects will receive certain interventions or treatments repeatedly (CLIFFORD et al., 2021) during that period. The interventions provided consisted of giving positive feedback and negative feedback. The categories of the interventions are as follows:

Table 2. Learning Feedback Categories

Category	Subcategory	Description	Example	Frequency	Reference
Cognitive Content	Problem Identification	Identifying cognitive content issues in pre-service education involves recognizing and addressing challenges related to the knowledge and thinking skills that prospective	Students recommend enhancing flipped learning by diversifying announcements about video clips through email and virtual learning environments, highlighting the importance of watching them, emphasizing key content in videos and classes, and expressing	7	(Matosas-López et al., 2019)(Prilop et al., 2021a) (Prilop et al., 2019)(Lai & Lo-Fu, 2013)(Young et al., 2018) (Prilop & Weber, 2023)

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	educators need to possess. This can include identifying gaps in understanding, misconceptions, or areas where students may struggle to grasp certain concepts. Basically, this is about identifying potential obstacles in the cognitive development of pre-service teachers and finding ways to overcome them.	that preparation, including recording video clips, creating quizzes, and assignments, takes a lot of time, up to three hours.		
Revision-oriented suggestions	Revision-oriented suggestions refer to feedback and improvements aimed at enhancing the learning experience and outcomes. This may include revising the approach to service activities, refining learning objectives, or adjusting the methods used to integrate service and academic content. This is a process of reflection and adjustment to ensure that the components of service and learning are optimized to	This involves providing feedback to students on their writing and encouraging them to revise their work. Revision-oriented suggestions can be done in various ways, such as rewriting for a different audience or purpose, exploring peer reviews, and requesting a visit to the Academic Center for Excellence (ACE). Teachers can also serve as revision models for students by sharing their own writing processes as examples of good practice. Additionally, teachers can teach students how to provide revision suggestions by forming feedback groups and practicing giving high-quality feedback.	4	(Matosas-López et al., 2019) (Courtney et al., 2017)

		achieve the most meaningful and effective impact.			
Affective content	Positive	Affective content in positive service learning focuses on the emotional aspects and attitudes of the learning experience. This involves the development of emotions, attitudes, and positive values in students through their involvement in service activities. This can contribute to personal and social development, empathy, and a sense of civic responsibility. In essence, it is about creating a positive emotional and affective environment that enhances the overall impact of the service learning experience.	Students and teachers can involve students in community service projects that focus on real-world issues, such as health and fitness campaigns, social media advocacy, or environmental protection. Service learning can have a positive impact on students in various ways, including enhancing personal efficacy, developing resilience, and fostering critical awareness. Students can also demonstrate what they have learned through final presentations, books, portfolios, graphs, charts, infographics, slideshows, videos, and plays. Celebrating their hard work and success can also help students develop a sense of achievement and pride.	5	(Lai & Lo-Fu, 2013) (Kilgour et al., 2014) (Prilop et al., 2019) (Tatli et al., 2018) (Prilop et al., 2021a)
	Negative	Affective content in service learning that is negative involves the handling and management of emotions and attitudes that may arise during the learning process. This can	Students may experience negative emotions when they encounter difficulties in their service placements or when they are faced with social issues that they might not know how to handle. It is important to help students manage these negative	5	(Prilop et al., 2021b)

	include negative emotions such as frustration, disappointment, or discomfort that students may experience when faced with challenging aspects of service work. Although negative affective content is not the goal, it is recognized as a natural part of the learning process. The key is to acknowledge and handle these emotions constructively, turning them into opportunities for reflection, growth, and ultimately, a more comprehensive understanding of oneself and the community being served.	emotions and develop problem-solving strategies to ensure a positive learning experience. Teachers can provide support by offering emotional support, fostering open communication, and providing resources to help students face challenging situations.	
Balance	Maintaining a balanced affective content in the teaching and learning process is very important for a holistic and positive educational experience. This involves managing positive emotions and potentially negative	Balance for pre-service students can take the form of reflective activities that allow students to acknowledge the positive and negative emotions they experience during service learning. This can include keeping a journal about their emotions, discussing them in a supportive group environment, and identifying strategies to effectively	(Großschedl et al., 2019; Kazunga et al., 2023)

		emotions in a way that supports the overall learning and personal development of students. Here are some key points to achieve balanced affective content: Positive Reinforcement, Reflection on Challenges, Emotional Support, Cultural Sensitivity, Community Impact	manage both positive and negative emotions. By recognizing and addressing the various emotions that arise during service learning, students can develop a more comprehensive understanding of their experiences and enhance their emotional resilience.		
Metacognitive content	Evaluation	Involving students in critically reflecting on their own thinking processes and strategies to assess the effectiveness of their learning approaches	Teachers can use direct observation, questioning, and self-assessment to gather data on students' current understanding and adjust their teaching strategies accordingly. Additionally, creating and using rubrics can help students understand success criteria and evaluate their own work. By using a combination of these strategies, students can actively participate in their own education and develop a deeper understanding of their learning approaches and progress.	3	(Kindall et al., 2017)(Young et al., 2018)(Prilop et al., 2019)(Matosas-López et al., 2019)(Prilop et al., 2021a)
	Reflection	Metacognitive content in reflection requires students to examine and contemplate their own	Creating a journal: Assigning students to create a personal journal where they can write about their thoughts, feelings, and experiences related to service learning or	6	(Kindall et al., 2017) (Courtney et al., 2017) (Weber et al., 2018) (Prilop et al., 2019)(Liesa et

	thinking processes, fostering self-awareness, and enhancing learning strategies.	other educational experiences.		al., 2023) (Olande & Lindström, 2023)
Regulation	Metacognitive content in regulation involves students actively monitoring, controlling, and adjusting their cognitive processes to optimize their learning strategies.	Teachers can ask students to set specific learning goals for each lesson or unit and then monitor their progress in achieving those goals. Another approach is to encourage students to use self-questioning strategies to monitor their own learning. For example, teachers can ask students to ask themselves questions like "What do I already know about this topic?" or "What strategies have I used in the past to learn the same material?" to help them manage their learning.	2	(Morris et al., 2023a) (Morrison & Jacobsen, 2023)

The activities over the six-week period in the experimental courses include Development Planning and the History of Economic Thought. Introduction to Accounting 1 and Introduction to Development Economics with synchronous (Zoom) and asynchronous (LMS) learning models:

Meeting 1: Explaining the introductory material for each course with the aim of helping students understand the scope and urgency of each course. The activities conducted are:

1. Pre-test and learning motivation
2. Identifying problems through open discussion
3. Playing educational videos through the LMS
4. Individual reflection

The positive feedback given is appreciation for the initial participation and active involvement of the students. Negative feedback is given if the students' understanding is not deep enough.

Meeting 2: In the second meeting, we continue the weekly topic on the history of economic thought, focusing on Ancient Greek Economic Thought, Scholasticism, Mercantilism, and Physiocrats. The goal is for students to analyze the foundations of economic history and compare the early schools of thought. The activities carried out include:

1. Group discussion about early figures and schools of thought
2. Supporting video on Mercantilism

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3. Case study on Physiocrats

4. Written reflection in the LMS

The positive feedback given is in the form of reinforcement of students' understanding and connection to the current context. Negative feedback is given if the discussion contribution is lacking in depth.

Meeting 3: In the third week, we will continue the discussion topic on Classical Economic Thought – Focus on Adam Smith. The goal is for students to critically explore and analyze Adam Smith's theories. The activities carried out include:

1. Interactive discussion on Zoom

2. Video about classical theory

3. Applied case study assignment

4. Feedback from the lecturer and fellow students

The positive feedback given is an appreciation for the critical analysis and the contextual application of the theory. Negative feedback on misunderstanding or lack of analysis

Meeting 4: The fourth meeting continued with weekly topics for each course, such as the topics of other classical figures (Malthus, Say, Ricardo, Mill). The goal is for students to understand the comparison of thoughts among classical figures. Activities conducted:

1. In-depth discussion via Zoom and LMS forum

2. Learning video about Ricardo and Mill

3. Cross-character case study assignment

4. Personal reflection of students

The feedback provided includes reinforcement of the synthesis of theory and the students' critical thinking skills. Negative feedback for analytical errors or weak discussions.

Meeting 5: In the fifth meeting, the topic will be Socialist Thought and Critique of Classical Economics. The goal is for students to evaluate the criticism of classical theory and understand the beginnings of socialism. The activities carried out are:

1. Exploration of early socialism critiques

2. Video about socialist thought

3. Case analysis and open discussion

4. Reflection on perspective change

The feedback provided is in the form of support for diverse thinking and theoretical integration. Negative feedback if the connection between theory and practice is not yet evident.

Meeting 6: In the sixth meeting, the final material on Marxism and the Renewal of Socialist Thought was continued. The goal is for students to understand the development of socialist thought post-Marx. The activities carried out include:

1. Discussion on the synthesis of Marxist and post-Marxist thought

2. Advanced learning video

3. Final case study assignment and comprehensive reflection

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The feedback provided emphasizes the depth of understanding and the applicative ability of students in responding to economic issues. Negative feedback for the final evaluation that has not yet addressed the core theory.

3.4. Data Analysis

The analysis technique can be carried out in two stages, namely descriptive analysis and inductive analysis. Descriptive analysis techniques are intended to describe research data, including mean, median, standard deviation, and data trends. Inductive analysis to test whether there is a significant difference between groups of respondents who were given treatments such as positive feedback and negative feedback used the independent sample t-test.

4. Results

To answer the research questions posed, the analysis was conducted through two approaches, namely descriptive analysis and inductive analysis. This approach aims to provide a comprehensive picture of the research data while statistically testing the differences that occur between treatment groups. The descriptive analysis of the indicators in the research is as follows:

Table 3. Total Criteria Respondent (TCR)

Feedback	Course	Indicator	TCR (%)	Category
Positive	Learning Planning	Assignment Efforts	83	Good
		Time Constraints	53	Enough
		Focus of Assessment	89	Very Good
		Competition	83	Good
		Listening	74	Good
Negative		Assignment Efforts	81	Good
		Time Constraints	52	Enough
		Focus of Assessment	85	Very Good
		Competition	77	Enough
		Listening	73	Enough
Positive	History of Economic Thought	Assignment Efforts	89	Very Good
		Time Constraints	49	Not Good Enough
		Focus of Assessment	90	Very Good
		Competition	87	Very Good
		Listening	82	Good
Negative		Assignment Efforts	83	Good

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		Time Constraints	49	Not Good Enough
		Focus of Assessment	89	Very Good
		Competition	83	Good
		Listening	80	Good
Positive	Introduction to Accounting 1	Assignment Efforts	87	Very Good
		Time Constraints	48	Not Good Enough
		Focus of Assessment	90	Very Good
		Competition	86	Very Good
		Listening	80	Good
Negative		Assignment Efforts	85	Good
		Time Constraints	50	Not Good Enough
		Focus of Assessment	88	Very Good
		Competition	80	Good
		Listening	82	Good
Positive	Introduction to Development Economics	Assignment Efforts	89	Very Good
		Time Constraints	63	Enough
		Focus of Assessment	93	Very Good
		Competition	86	Very Good
		Listening	85	Very Good
Negative		Assignment Efforts	89	Very Good
		Time Constraints	62	Enough
		Focus of Assessment	93	Very Good
		Competition	86	Very Good
		Listening	85	Very Good

Source: Processes primary data (2024)

This analysis is conducted on the research data from Surabaya State University and Padang State University, specifically on the Learning Planning course conducted at Surabaya State University. This research uses a questionnaire distributed with a learning orientation approach. This approach aims to measure how prepared students are to participate in the lecture process. In the course on Learning

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Planning, there are several indicators that are evaluated through positive and negative feedback from the students. The results of the descriptive analysis of the Learning Planning course show that the respondents' achievement level (RAL) is generally in the good category. The indicator with the highest TCR value is the Focus on Assessment in positive feedback with a score of 89%, which falls into the very good category. This indicates that students pay great attention to the evaluation aspect in the learning process, where they feel that the focus of assessment in this course is very clear and directed, making it easier for them to understand the expectations set by the lecturer. On the other hand, the indicator with the lowest TCR value is Time Constraints in negative feedback, with a value of 52%, which falls into the sufficient category. These findings indicate that students face challenges in managing their time to complete assignments and engage in the learning process optimally.

If compared between positive and negative feedback, the Assignment Effort indicator has relatively consistent values, namely 83% in positive feedback and 81% in negative feedback, both of which fall into the good category. This indicates that students generally have a positive perception of the assignment system in this course, although there are still some challenges that need to be addressed. On the Competition indicator, the TCR score for positive feedback is 83% (good), while for negative feedback it is 77% (satisfactory). This indicates that the aspect of competition in learning is perceived differently by students, where some feel assisted by competition in the classroom, while others may feel burdened. For the Listening indicator, it has a TCR value of 74% in positive feedback and 73% in negative feedback. Both of these values fall into the good and sufficient categories, indicating that listening skills in the learning process still need to be improved to have a more optimal impact on student understanding.

The next analysis was conducted at Padang State University specifically on the courses of the history of economic thought, introduction to accounting 1, and introduction to development economics. In the course of the History of Economic Thought, students demonstrated very good performance in assignment efforts (89%), assessment focus (90%), and competition (87%). In addition, listening skills (82%) also fall into the good category. This indicates that students have a high level of dedication in completing tasks, understanding evaluation aspects, and are able to compete well in class, and the majority of students feel that the tasks given greatly support their learning. However, there are constraints in time limitations (49%) that still fall into the less satisfactory category, indicating that many students feel the time allocated for materials or assignments is insufficient. Although in the negative aspect, the effort in assignments (83%) and competition (83%) remains in the good category, and the focus on assessment (89%) remains very good, the effectiveness in time management needs to be improved so as not to hinder academic performance.

Descriptive analysis of the Introduction to Accounting 1 course shows that the evaluation of several learning indicators was conducted through positive and negative feedback from students. Based on the evaluation results, the Assignment Effort indicator with positive feedback received a percentage score of 87%, indicating that the majority of students feel that the assignments given are relevant and support the learning process. The Time Limitation Indicator with positive feedback shows a lower percentage value, namely 48%. This indicates that many students feel the time provided for learning is insufficient. On the Assessment Focus Indicator, it received high appreciation with a score of 90%, indicating that students feel the assessment system in this course meets their expectations and supports learning. Next, the Competition Indicator received a score of 86% with a very good category, indicating that students feel there is healthy competition in the class. The last indicator of positive feedback, Listening, received 80% with a good category, indicating that the listening skills during lectures were rated quite well by students, suggesting that this assessment is relatively stable across all student groups.

The treatment of negative feedback in the Introduction to Accounting 1 course shows that the indicators of Assignment Effort, Assessment Focus, Competition, and Listening from negative

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feedback received very good categories with percentages of 85%, 88%, and good with percentages of 80% and 82%, indicating that despite the criticism, the majority of students still gave positive assessments. On the other hand, the Time Limitation indicator received a percentage of 50% with a Fair category, reflecting that many students feel the learning time is insufficient. Evaluation of time allocation, such as adding discussion sessions or flexibility in assignments, is necessary to improve the effectiveness of learning.

Lastly, in the introductory course on development economics, with both positive and negative feedback, it shows that students generally gave a good assessment of the assignments given, with a percentage score of 89%. For the Time Constraint indicator with positive feedback, the lower percentage score of 63% in the less favorable category indicates that students feel there is a significant time constraint in the implementation of the lectures. The Assessment Focus Indicator received very high appreciation, with a percentage score of 93% in the very good category. This shows that students highly appreciate the assessment system used in the lectures. The Competition Indicator received a percentage score of 86% with a very good category, indicating that students feel there is healthy competition in the class. And on the Listening Indicator, it received a percentage score of 85%, which indicates that students feel that the listening skills in this class are rated as good.

From the perspective of negative feedback, the Assignment Effort indicator received the same percentage score as positive feedback, namely 89% with a very good category, indicating that despite some criticism, the majority of students still consider the assignments given to be relevant and supportive of their learning. The Time Constraints Indicator with negative feedback received a percentage score of 62% with a "less than good" category, indicating student dissatisfaction with the time allocation in class. Next, the Assessment Focus indicator with negative feedback received a percentage score of 93% in the very good category, indicating that despite the criticism, students still consider the assessment focus in this lecture to be good. Lastly, on the listening indicator, with a percentage of 85%, it shows that the majority of students feel that the listening skills in this class are good.

Normality testing using the Kolmogorov-Smirnov and Shapiro-Wilk tests was conducted on four class groups with positive feedback, namely the Economics Education class at Surabaya State University (UNESA) and three courses at Padang State University (SPE, PA1, and PEP). The test results show that the data in the UNESA class (KS = 0,200; SW = 0,669), PA1 (KS = 0,143; SW = 0,303), and PEP (KS = 0,200; SW = 0,421) with values greater than 0,05 indicate that the data is normally distributed. Then, in the negative feedback, the test results also show that in the UNESA class, the Shapiro-Wilk test produced a significance value of 0,909 > 0,05, indicating that the data is normally distributed. After conducting the normality test, it is followed by the hypothesis test as follows:

Table 4. Descriptive Analysis

Criteria	Engagement		Student Performance	
	Feedback Negative	Feedback Positive	Feedback Negative	Feedback Positive
Maximum	138	139	30	30
Minimum	77	79	13	17
Mean	104.83	112.03	23.60	25.17
Std. Deviation	13.792	15.641	3.914	3.719

Source: SPSS data processing

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In table 4, the average student engagement was higher when they received positive feedback (112.03) compared to when they received negative feedback (104.83). This shows that positive feedback tends to increase student engagement. Positive feedback, which generally contains reinforcement, appreciation, is able to create a more emotionally and psychologically supportive learning atmosphere. When students feel appreciated for their efforts and achievements, they tend to be more motivated to participate actively, listen attentively, and engage fully in learning activities. In addition, the slightly larger standard deviation value in the group that received positive feedback indicates a higher variation in engagement in that group. This shows that although positive feedback generally increases engagement, students' responses to it can vary depending on individual characteristics, such as self-confidence levels, motivational backgrounds, or previous learning experiences. Next, the average student performance increased when they received positive feedback, from (23,60) to (25,17). Although the increase was not very large, this pattern supports the view that positive feedback has the potential to help students achieve better learning outcomes.

Table 5. Results of the Independent Sample Test for Engagement with Negative and Positive Feedback

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Engagetment	Equal variances assumed	1.573	0,213	2.560	92	0,012
	Equal variances not assumed			2.729	90.442	0,008

Source: SPSS data processing

Based on Table 3, the F value is 1.573 with a Sig. of 0,012. Because the Sig. value (0,012) is greater than 0.05, the assumption of equal variances (equal variances assumed) is accepted. Then the t-value is 2.560 with 92 degrees of freedom (df). The Sig. (2-tailed) value of 0,012, which is greater than 0.05, indicates that the difference in average engagement between the positive feedback experimental class and the negative feedback experimental class is statistically significant. This shows that providing positive feedback has a strong impact on student engagement at the State University of Surabaya and the State University of Padang in the introductory courses of Accounting, History of Economic Thought, and Introduction to Development Economics and Planning.

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Table 6. Results of the Independent Sample Test on Student Performance with Negative and Positive Feedback

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Student Performance	Equal variances assumed	0,098	0,756	1.658	72	0,102
	Equal variances not assumed			1.658	71.743	0,102

Source: SPSS data processing

Based on Table 4, the F value is 0,756 with a Sig. of 0,756. Because the Sig. value (0,756) is greater than 0.05, the assumption of equal variances assumed is accepted. Then the t value is 1.658 with 72 degrees of freedom (df). The Sig. (2-tailed) value of 0,102, which is greater than 0,05, indicates that the average performance difference between the experimental class with positive feedback and the negative feedback class is not statistically significant. Based on the analysis results, the provision of positive feedback in the experimental class did not result in a statistically significant difference in student performance compared to the class that received negative feedback.

5. Discussion

5.1. Student Engagement With Positive And Negative Feedback

The results of the research at Padang State University and Surabaya University, particularly in the courses of Introduction to Accounting, History of Economic Thought, and Introduction to Development Economics and Learning Planning, indicate that the provision of positive feedback has a significant impact on increasing student engagement compared to negative feedback. The average student engagement in the experimental class that received positive feedback was higher (112,03) compared to the class that received negative feedback (104,83). The significance of the difference can be seen from the p-value result (0,012 < 0,05). This shows that the way lecturers provide feedback to students can affect their level of engagement in the learning process. Positive feedback creates a more supportive learning environment and encourages students' intrinsic motivation. Based on learning motivation theories such as Self-Determination Theory (Ryan & Deci, 2000), when students feel appreciated and receive positive reinforcement for their efforts, their basic psychological needs such as competence, autonomy, and social relatedness are met. This encourages them to be more actively involved in the learning process. Students who receive positive feedback tend to feel more appreciated, more confident, and more motivated to actively participate in discussions and academic tasks.

This finding is also explained in the social learning theory developed by Bandura (1986), where positive reinforcement in the form of supportive and constructive feedback can enhance student motivation and engagement in the academic environment (S. Macalisang & G. Bonghawan, 2024). Bandura explains that individuals learn through observation, modeling, and reinforcement. Positive feedback can serve as a reinforcement, strengthening students' academic behavior by appreciating their efforts. In the research conducted by Martinez et al. (2024), it is also explained that positive

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feedback can enhance motivation and motor skills in adolescents. The group that received positive feedback experienced an increase in self-efficacy, intrinsic motivation, and interest in continuing to practice. Then, Fong et al. (2018) explain that constructive feedback has a different influence compared to positive or negative feedback in shaping the emotions and judgments of the recipient.

On the other hand, negative feedback often induces anxiety, fear of failure, and negative perceptions of the material or the instructor, which ultimately decreases participation and engagement. Negative feedback can cause students to feel less confident (Weidinger et al., 2016 ; Kim & Lee, 2019) and less motivated to actively engage in learning (Xing et al., 2023). Corrective but non-constructive negative feedback can lead to a decrease in motivation and self-efficacy among students (Fong et al., 2018), thereby hindering their engagement in learning. Negative feedback can create less conducive psychological conditions, where students feel undervalued and tend to withdraw from academic interactions. Thus, the results of this study provide empirical evidence that a reward-based feedback approach is more effective in enhancing student engagement compared to an approach that emphasizes criticism without positive reinforcement.

Feedback on this research with the course History of Economic Thought or Introduction to Development Economics has content that demands deep understanding and critical reflection. When students receive positive support through feedback, they will be more motivated to read literature, engage in discussions, and relate concepts to real-world contexts. This is also relevant for courses like Introduction to Accounting, which is known for its technical complexity. Positive feedback helps reduce psychological barriers in understanding difficult material.

5.2 Academic Performance Of Students With Positive And Negative Feedback

Research conducted on the courses History of Economic Thought, Learning Planning, Introduction to Accounting 1, and Introduction to Development Economics at Padang State University and Surabaya State University shows that students who receive positive feedback have a higher average academic performance (25,17) compared to those who receive negative feedback (23,60). These findings practically indicate that a positive reinforcement approach in learning has the potential to enhance students' learning achievements. Positive feedback usually contains elements of recognition of effort, appreciation of progress, and the ability to strengthen students' self-perception of their competence, which can later improve academic performance. Theoretically, this aligns with the feedback model in learning developed by (Hattie & Timperley, 2007), which emphasizes that effective feedback consists of three important components: feed up (what the learning goals are), feedback (how current achievements are), and feed forward (what the next steps are). In this context, positive feedback tends to include all three elements, thereby encouraging students to continue developing through constructive and motivating guidance.

However, the results of the statistical test using the independent sample t-test indicate that the difference in average performance has not yet reached a statistically significant level, with a significance value (p-value) of 0,102, which is greater than the significance threshold of 0,05. This means that, statistically, there is not enough evidence to state that the difference between the two groups occurred solely due to the feedback treatment, but rather it could be influenced by other factors outside the treatment. These findings underscore the importance of considering mediating and moderating variables such as individual motivation levels, self-directed learning abilities, and student self-efficacy. In the perspective of Self-Regulated Learning Theory (Zimmerman, 1990), students with high self-regulation skills will be more able to benefit from the feedback given, compared to those who have not yet developed these abilities. Therefore, although there is an average trend of improved academic performance with the provision of positive feedback, this practical significance is not yet statistically significant due to variability among individuals and learning contexts. This is explained by (Brown et al., 2016) in their research that students' perceptions of the

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quality and quantity of feedback do not directly correlate with academic achievement; what is more important is the extent to which students actually utilize feedback to regulate their learning. Next, Keller (2025) found that positive feedback can enhance self-confidence or self-concept, especially in female students, but this effect is temporary and does not always lead to improved academic performance. The effects of feedback are greatly influenced by individual factors such as psychological strength, academic self-concept, and the characteristics of the recipient; for example, students with a positive self-concept may actually experience a decline in performance after receiving feedback, while students with a negative self-concept do not show any improvement in performance (Baadte & Schnotz, 2014) (Straub et al., 2023). Thus, although positive feedback has the potential to improve academic performance, its effectiveness greatly depends on the students' internal readiness to receive and utilize it adaptively. Therefore, in designing effective feedback strategies, it is important for educators to not only consider the form and content of the feedback but also to pay attention to the psychological characteristics, self-concept, and self-regulation skills of students as the main determinants of the success of the learning intervention.

These findings provide practical implications for lecturers that feedback not only serves as an evaluative tool but also as an important component in building supportive communication between lecturers and students. Therefore, the delivery of constructive, positive, and learning principle-based feedback should be made an integral part of classroom teaching strategies. In curriculum design, explicit guidelines on how to provide effective feedback need to be formulated, so that lecturers have a consistent reference and students can benefit from it in their learning process. Thus, even though the statistical effect of positive feedback has not yet been significant, its role remains important in creating a learning environment that empowers and supports the overall academic growth of students.

6. Conclusion

The research results indicate that providing positive feedback has a significant impact on increasing student engagement in learning, especially in the courses of Introduction to Accounting, History of Economic Thought, and Introduction to Development Economics and Learning Planning at Padang State University and Surabaya University. However, the provision of feedback, whether positive or negative, does not have a significant impact on student performance. Therefore, although positive feedback can increase student engagement, it does not automatically improve their academic performance without a more comprehensive pedagogical approach. Thus, the recommendation from this research is the need for equipping students with good self-regulation skills so that they can optimally utilize feedback to enhance their academic performance. Then it is hoped that lecturers can apply a more personal approach in providing feedback.

7. Suggestion

Based on the findings that positive feedback significantly increases student engagement in learning, it is recommended that lecturers be more consistent and strategic in using positive feedback throughout the teaching and learning process to encourage active student participation. Although no significant effect of feedback type on academic achievement was found, it is important for educators to continue providing feedback as part of reflective learning and long-term motivational development. Further research is recommended to explore more optimal forms and frequencies of feedback, as well as consider other mediating variables such as motivation, self-efficacy, or learning styles that may influence the relationship between feedback and academic achievement.

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8. Limitations

This research provides important findings regarding the influence of feedback on student engagement and academic achievement, but it still has several limitations that need to be considered when interpreting the results more broadly.

First, the main limitation lies in the number and diversity of the sample. The research was conducted only at two universities, namely Padang State University and Surabaya State University, and was limited to certain courses such as Introduction to Accounting, History of Economic Thought, Learning Planning, and Introduction to Development Economics. This limits the generalization of the findings because the learning context, student characteristics, and teaching styles of lecturers can vary significantly in other institutions and study programs. To gain a more comprehensive understanding, further research should involve more institutions, study programs, and different levels of education.

Second, the duration of the feedback intervention in this study is relatively short, so its impact on the final learning outcomes (academic performance) has not yet been significantly observed. The effects of feedback, especially those related to improving academic performance, are often long-term and require more time to show significant changes.

Third, this study has not thoroughly controlled or measured individual student factors, such as self-efficacy levels, self-regulation abilities, intrinsic motivation, or metacognitive strategies. However, based on the Self-Regulated Learning theory students' success in responding to feedback heavily depends on these internal factors. Students with high self-regulation abilities tend to be more capable of optimizing the benefits of positive feedback, while students with low self-regulation may not respond effectively even when receiving positive support.

Fourth, although there are differences in the average scores of engagement and academic achievement between the groups receiving positive and negative feedback, statistical significance was only found in the engagement variable, while academic achievement was not statistically significant (p-value = 0.102). This indicates that although the reward-based approach encourages more active student participation, its effect on formal academic outcomes still requires data reinforcement and replication in different contexts.

Considering these limitations, further research is needed to address these factors, both in terms of sample expansion, extension of intervention duration, measurement of students' psychological variables, and more structured feedback design. This is important to strengthen the theoretical and practical foundation in integrating effective feedback strategies in higher education learning.

Declarations

Author Contributions. Y Y. and L.H.: Conceptualization, Literature Review, and Survey Design. Y.Y, R.S and D.N.: Methodology and Data Analysis. D.R.Q.P., V.S.N.Q., and Y.R and R.S.: Data Collection and Writing – Original Draft Preparation. Y.Y and Y.R: Supervision and Final Review-Editing. All authors have read and approved the final version of the manuscript.

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Ethical Approval. This study was conducted in accordance with the principles of the Declaration of Helsinki. Participants were informed about the purpose of the study and participated voluntarily, providing informed consent. Steps were taken to ensure anonymity, privacy, and confidentiality of data.

Data Availability Statement. The data are available from the researcher upon request.

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