

The Analysis of Politeknik Negeri Ujung Pandang Students' Perceptions on the Effectiveness of Paper-Based Media and Google Forms in Learning Reading Comprehension

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ABSTRACT

The shift toward digital learning has encouraged educators to combine traditional and technology-based methods in the classroom. This study examines how students from the Mechanical Engineering Department at Politeknik Negeri Ujung Pandang (PNUP) perceive the use of two learning media; paper-based materials and Google Forms in developing their reading comprehension skills in English for TOEFL course. Adopting a quantitative descriptive-comparative design, the research involved 66 students who responded to a 15 item Likert scale questionnaire measuring ease of use, comfort, comprehension, and overall preference. Findings revealed that most students favored paper-based materials, describing them as more comfortable, focused, and helpful in understanding texts. Meanwhile, Google Forms was recognized for its accessibility and convenience but was perceived as less effective in maintaining engagement and concentration. Interestingly, many participants believed that combining both platforms would yield better learning outcomes. These results highlight that integrating printed and digital media can create a more interactive, balanced, and effective approach to teaching reading comprehension in vocational English contexts.

Keywords: *paper-based learning, Google Forms, reading comprehension, student perception, blended learning.*

1) INTRODUCTION

Technological developments in today's digital era have significantly influenced various aspects of life, including education. One of the most noticeable changes is the growing variety of media used in the teaching and learning process. Politeknik Negeri Ujung Pandang (PNUP), as one of the leading vocational education institutions in eastern Indonesia, has also kept up with these technological advances, especially in the delivery of learning. Since the outbreak of the Covid-19 pandemic in 2020, all educational institutions in Indonesia from elementary schools to universities have been required to switch to online learning. This situation forced educators to adapt quickly by selecting learning models that incorporate technology to ensure that students could continue learning effectively. One platform that has gained popularity during this period is Google Forms. Initially known as a tool for surveys or

quizzes, Google Forms is now widely used in classrooms, including for teaching reading comprehension.

In the Mechanical Engineering Department at PNUP, English is offered in several semesters. One of the key English courses is English for TOEFL, which is taught in the seventh semester of the D4 Mechatronics Engineering program. This course aims to prepare students for the TOEFL test in their final semester, in accordance with the Director's Regulation No. 2 of 2020, which requires students to achieve a minimum TOEFL prediction score of 350 or take the test a maximum of four times before graduating.

One of the core skills tested in the TOEFL exam is reading comprehension. This skill plays a vital role in learning English, as reading helps students expand their vocabulary, deepen their understanding of grammar and sentence structure, and gain new knowledge. Traditionally, reading instruction at PNUP especially in English for TOEFL course has relied on printed (paper-based) materials, which have been considered effective and familiar to both students and lecturers. However, along with the advancement of digital tools, media like Google Forms are increasingly being used as alternatives. These tools allow reading texts and comprehension questions to be delivered in an interactive and accessible format. Fitriani (2021) found that students perceive Google Forms as practical and easy to use for online reading assessments. Similar findings by Sukmawati (2024) and Iswari & Ahada (2024) suggest that many students benefit from the flexibility and simplicity of digital platforms, though some still struggle with technical issues such as unstable internet and screen fatigue.

On the other hand, a number of studies show that paper-based materials remain a preferred choice for many learners. Pardede (2019) emphasizes that reading printed texts tends to promote better concentration and understanding. Hasby and Mohammed (2021) also found that students feel more comfortable using printed books compared to e-books or digital reading tools. This is supported by Singer & Alexander (2017), who state that reading on paper often results in deeper comprehension than reading on screens. Given these diverse perspectives, it is important to explore how students perceive the use of both types of media, printed and digital, particularly in reading comprehension instruction. Each medium has its own advantages and drawbacks. While printed materials may provide a better sense of focus and familiarity, digital platforms like Google Forms offer time efficiency, interactivity, and greater accessibility.

Unfortunately, there is still a lack of research that specifically compares students' perceptions of paper-based and Google Forms-based learning, especially within the context of vocational education like that offered at PNUP. Therefore, this research is necessary to better understand how students assess the effectiveness of these two types of media and which one they prefer for improving their reading comprehension skills. The results of this study are expected to serve as valuable input for instructors in selecting appropriate learning media, and for educational institutions to evaluate and enhance the quality of learning delivery. This research also aligns with national efforts toward digital transformation in education ensuring that these changes remain centered around student needs and learning comfort. Ultimately, this study not only provides insights into student preferences but also offers practical contributions to improving English language instruction in vocational higher education.

Based on the above background, the research questions in this study are:

1. How satisfied are students with the use of paper-based media in Reading Comprehension learning?
2. How satisfied are students with the use of Google Forms media in Reading Comprehension learning?
3. Which media is preferred and considered effective by students?

2) METHODS

This research adopts a quantitative approach using a descriptive comparative design. This method was chosen because the study aims to gather measurable data that can be analysed statistically to explore students' perceptions of how effective paper-based media and Google Forms are in supporting reading comprehension, particularly in English for TOEFL course. A descriptive comparative study is considered suitable, as it allows for a clear comparison between students' views on the two different types of media.

The research was conducted over a period of three months, from September to November 2026, at Politeknik Negeri Ujung Pandang. The population in this study consists of all students in the Mechanical Engineering Department who are studying English for TOEFL course. This course includes a focus on reading comprehension and is taught during the odd semester of the 2025/2026 academic year. The selected population is considered relevant to the research focus, which specifically investigates reading comprehension learning.

The sample for this study are students from the D4 Mechatronics Engineering program who are in their seventh semester during the odd semester of 2025/2026. These students are currently taking the TOEFL English course, which is designed to prepare them for the TOEFL test scheduled in the following semester before they begin their final project. The sample comprises 66 students across three different classes.

To collect data, the study uses a questionnaire as the main research instrument. The questionnaire is designed to measure students' perceptions of the effectiveness of both paper-based media and Google Forms in reading comprehension. The questions are developed based on several key aspects of perception in learning, including: Ease of use, reading comfort, Effectiveness in understanding the text, accessibility of the media, overall student preference. Each item on the questionnaire is rated using a 5-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5). This format allows for the quantification of students' responses, making it possible to compare and analyze their views statistically.

3) RESULTS AND DISCUSSION

This study involved 66 students from Politeknik Negeri Ujung Pandang. As an initial step, the participants were asked to complete a Likert-scale questionnaire (1 to 5) consisting of 15 items. The items were divided into three main categories:

- a. Student satisfaction with paper-based media;
- b. Student satisfaction with google forms;
- c. Media preference and perceived effectiveness.

A summary of the questionnaire results can be seen in table 1 below.

Tabel 1: *The result of Likert Questionnaire*

A	Perception of Paper-Based Media	SD	D	N	A	SA
1	The material on paper sheets is easy to understand.	0	2	7	37	20
2	Paper sheets help me focus better when reading texts	0	1	4	33	28

3	I feel comfortable doing reading exercises in paper form.	0	3	6	34	23
4	Paper-based media make it easier for me to take notes or highlight important parts of the text.	0	1	6	34	25
5	Paper-based media are effective in improving my understanding of reading texts.	0	0	9	36	21
B	Perception of Google Forms Media	SD	D	N	A	SA
6	Google Forms is easy to access using my device.	0	0	7	27	32
7	The appearance of questions in Google Forms is clear and easy to understand.	0	2	14	30	20
8	I feel more motivated to do reading exercises through Google Forms.	0	9	22	23	12
9	Google Forms makes it easier to submit answers quickly.	0	0	8	31	27
10	Google Forms media are effective in improving my understanding of reading texts.	0	9	19	24	14
C	Media Preference	SD	D	N	A	SA
11	I prefer using paper-based media rather than Google Forms.	0	3	17	25	21
12	I prefer using Google Forms rather than paper-based media.	2	11	26	19	23
13	The medium I consider most effective for understanding reading texts is paper-based.	1	4	19	25	17

14	The medium I consider most effective for understanding reading texts is Google Forms.	0	14	25	18	9
15	A combination of paper-based and Google Forms media will be more effective in learning reading comprehension.	1	3	16	27	19

The mean score for each item was calculated using the following formula

$$\bar{X}_j = \frac{\sum_{i=1}^n X_{ij}}{n}, \quad j = 1, 2, \dots, 15 \quad 1$$

where:

$\bar{X}_j$ = mean score for the j^{th} item

X_{ij} = score given by the i^{th} respondent to the j^{th} item

n = total number of respondents.

To calculate the overall mean for each section, the following formula was used:

$$\bar{X} = \frac{\sum_{j=1}^k \sum_{i=1}^n X_{ij}}{n \times k}, \quad 2$$

where:

k = number of items in one section

X_{ij} = score for the j^{th} item from the i^{th} respondent

n = number of respondents.

a. Student satisfaction with paper-based media

The mean score for this section, calculated using Equation 2, was:

$$\bar{X} = 4,22.$$

The mean score for this section, calculated using Equation 2, indicated that on average, students expressed satisfaction with the use of paper-based media for improving reading comprehension. These findings are consistent with previous studies showing that printed texts help learners focus better, comprehend deeply, and feel more comfortable when reading on paper (Pardede, 2019; Hasby & Mohammed, 2021; Singer & Alexander, 2017). Pardede (2019) and Hasby and Mohammed (2021) highlight that learners often demonstrate improved concentration and retention when using paper-based materials. Likewise, Singer and Alexander (2017) found that reading on paper results in deeper comprehension than reading digitally.

b. Student satisfaction with google forms

The average score for this section was

$$\bar{X} = 3.98.$$

The average score for this section showed that students were also generally satisfied with using Google Forms as a medium for reading comprehension activities, although the mean was slightly lower than that for paper-based media. These results align with previous findings that Google Forms is perceived as a practical and accessible tool for online learning, especially for reading and assessment activities (Hanif, 2021; Fitriani, 2021; Sari et al., 2022; Sukmawati, 2024; Iswari & Ahada, 2024). Fitriani (2021) reported that Google Forms is considered convenient and easy to navigate for reading tests, while Sari et al. (2022) and Sukmawati (2024) noted that digital tools support faster feedback and improved accessibility. However, several students still reported challenges related to limited interactivity and eye strain during screen-based reading (Huang, 2014).

c. Preferred and perceived effective media

In this section, item-level analysis was conducted using Equation 1. The results are as follows: Item 11 ($\bar{X}_{11} = 3.97$) showed that students generally expressed a preference for paper-based media, although the level of agreement was moderate rather than strong. Many reported feeling more comfortable and inclined to choose printed materials over Google Forms, echoing earlier research

highlighting the benefits of tangible materials for focus and annotation (Pardede, 2019; Hasby & Mohammed, 2021).

Item 12 ($\bar{X}_{12} = 4.44$) indicated a higher preference for Google Forms, suggesting that students appreciate the accessibility and flexibility offered by digital media (Fitriani, 2021; Sukmawati, 2024). Those more digitally literate or accustomed to online platforms found Google Forms easier to use (Subaveerapandiyan & Sinha, 2022).

Item 13 ($\bar{X}_{13} = 3.80$) further supported that students consider paper-based media more effective for developing reading comprehension. This supports previous claims that reading printed texts enhances cognitive engagement and visual comfort (Singer & Alexander, 2017; Pardede, 2019; Ivić, 2019).

Item 14 ($\bar{X}_{14} = 3.33$) reflected a tendency among students to doubt the effectiveness of Google Forms for reading comprehension when compared with paper-based media. Similar reservations were reported by Huang (2014), who found that digital reading often imposes higher cognitive load due to the absence of tactile cues and note-taking ease. Additionally, dependency on stable internet connections was cited as a limitation (Fitriani, 2021; Sukmawati, 2024).

Overall, these results show that a majority of students prefer and perceive paper-based media as more effective for reading comprehension. However, Item 15 revealed that students also appreciate the combination of both media, suggesting that integrating paper-based and Google Forms media can complement each other's strengths. This supports a hybrid learning approach, in which digital and traditional tools are combined to optimize learning outcomes (Pardede, 2019; Sukmawati, 2024). Paper-based materials provide comfort and focus, while Google Forms facilitates efficiency, accessibility, and real-time assessment (Fitriani, 2021; Sari et al., 2022; Sukmawati, 2024). Such hybrid integration aligns with broader research on blended learning effectiveness, which indicates that a balanced mix of traditional and digital media enhances learner engagement and comprehension (Singer & Alexander, 2017; Pardede, 2019; Huang, 2014).

Both media types paper-based and Google Forms have their respective strengths. Paper-based materials foster better concentration, engagement, and comprehension (Singer & Alexander, 2017; Pardede, 2019; Hasby & Mohammed, 2021), while Google Forms enhances accessibility, data collection, and time efficiency (Hanif, 2021; Fitriani, 2021; Sari et al., 2022; Sukmawati, 2024). Therefore, a hybrid model utilizing both approaches may represent an ideal solution for improving

reading comprehension effectiveness in vocational education contexts (Pardede, 2019; Fitriani, 2021; Sukmawati, 2024).

4) CONCLUSIONS

Based on the findings and analysis presented, the research questions of this study have been comprehensively addressed. Students of the Mechanical Engineering Department at Politeknik Negeri Ujung Pandang demonstrated overall positive perceptions toward both paper-based and Google Forms media in reading comprehension learning. Specifically, paper-based media were perceived as more effective for enhancing focus and understanding, while Google Forms were valued for accessibility and practicality (Pardede, 2019; Fitriani, 2021; Sukmawati, 2024). These results indicate that while traditional printed materials remain preferable for deep reading engagement, integrating digital platforms can provide complementary advantages in assessment and flexibility (Singer & Alexander, 2017; Sari et al., 2022; Huang, 2014).

Consequently, a hybrid approach that combines paper-based and Google Forms media is recommended as the most effective model for TOEFL English instruction at PNUP. This integration not only aligns with the institution's digital transformation initiatives but also reflects students' adaptive learning behavior in a technology-supported environment (Subaveerapandiyan & Sinha, 2022; Sukmawati, 2024). Students generally favored paper-based media because it offered greater comfort, better concentration, and stronger support for understanding reading materials. Although Google Forms was recognized for its accessibility and convenience, it did not always succeed in maintaining students' motivation or deepening their comprehension. Overall, the findings indicate that learners still tend to rely on traditional paper-based formats for effective learning. However, they also acknowledge that combining printed and digital tools such as Google Forms can provide a more engaging and effective approach to developing reading comprehension skills.

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