

# Needs Analysis of Teaching Materials for Editing Skills by Using 3D Page Flip Media: A Preliminary Study

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**Abstract.** Learning in the era of digital revolution 4.0 influences the direction of heutagogy learning which requires digital transformation by teachers to facilitate innovative learning and support the students' independent learning. Therefore, this study aims to develop digital teaching materials using 3D Page Flip to support and improve the students' learning independence. This article is part of a development research which focuses on the initial stage of need analysis of teaching materials for the editing skills by using prepared media. The study used a survey method. In this context, the survey study is designed to assess: (1) student characteristics, (2) teaching material resources, (3) learning competencies, and (4) teaching material design. The data were obtained by filling out an online questionnaire by using Google Form in which 125 students took the editing skills lessons. The questionnaire data were analyzed by using Weight Mean Score to obtain an interpretation of the variables average. The results of the student questionnaire analysis show that the students need digital teaching materials, and agree to the development of the 3D Page Flip E-Book in editing skills lessons which can provide and support the learning experiences either independently or assisted by the teachers.

**Keywords:** Editing Skills, Learning Independence, 3D Page Flip Media

## 1 Introduction

In education, digital transformation provides many conveniences in sharing and accessing various knowledge information. The ease of sharing and accessing various information from digital-based knowledge sources has encouraged the new patterns in learning at various levels, including in higher education, by implementing a heutagogy learning approach based on self-determined learning. Learning based on independent learning is one of the concepts of a constructive learning approach, which gives the students freedom to reconstruct their own knowledge through their activeness in the learning process [1].

Along with this, [2] revealed that heutagogical learning based on independent learning is an approach that suits the characteristics of students in the era of the digital revolution to support their freedom to learn. This was also revealed by research conducted [3], that the characteristics

of Z generation who have the ability to use information and communication technology devices really support the implementation of a learning approach based on learning independence. This approach allows the students to autonomously use and utilize digital technology devices as media and learning resources needed to improve their abilities and achieve the learning success.

To answer the challenges of the digital revolution which has created a independent learning approach, the teachers as the front guard in higher education must be able to increase their competence to face the RI 4.0 era. This is because the students today are the "digital native" generation who are already familiar with the digital world. A research conducted by [4], shows that the students show dissatisfaction with conventional learning methods and tend to prefer the use of digital technology to meet the academic needs. Apart from that, several studies related to the students' teaching material needs conducted by [5], [6], [7], [8], show that all the students prefer digital teaching materials that practically and flexibly can be used.

This study is a small part of the process on developing digital teaching materials for the editing skills lessons by using 3D Page Flip media to increase the students' learning independence of Indonesian Language and Literature Education Study Program. This article describes an analysis of students' needs for the developed teaching materials. The teaching materials that will be developed is in 3D E-Book form which is designed with pictures and videos related to Indonesian editing skills. The 3D Page Flip is a teaching media developed with an application that produces digital books which can be filled with text, images, videos, music or animation. This has become one of the popular digital media used to create independent learning [9].

Several previous studies have developed the teaching materials by using 3D Page Flip media as conducted by [10] entitled "RADEC-Based E-Book Development Assisted by 3D Pageflip Professional in Class V Elementary Schools". This study is motivated by the lack of learning resources and the use of technology in learning which is not yet optimal. The results show that the designed E-Book has adequate validity which is the material validity is 90%, media aspect is 86.25%, and language aspect is 90%, and with a test value is 81.26% which is categorized as very feasible so that the E-Book is RADEC using 3D Pageflip Professional is valid and practical for learning. Other research by [11] entitled "The Effects of Online-Based 3D Page Flip Science Module on Elementary School Students' Learning Motivation in Indonesia" conducted an experiment with a non-equivalent control group design to determine the effect of implementing the Flip Page 3D science module media on the students' learning motivation. The research results show that learning with the 3D Page Flip module media has a significant effect on the students' learning motivation, and contributes to the development of digital-based learning innovation.

The study on the success in developing 3D Page Flip digital-based teaching materials provides a contribution of ideas for being able to innovate the teaching materials for editing skills lessons using 3D Page Flip media. Therefore, before developing the design of teaching materials, this research conducted the students' needs mapping in an effort to identify the elements that will be included in the development of teaching materials. Based on a preliminary study at the Indonesian Language and Literature Education Study Program, it was found that the majority of the students do not yet have digital-based teaching materials which in this context is 3D Page Flip media. This research attempts to analyze the need for teaching materials based on 3D Page Flip media in editing skills at the Department of Indonesian Language and Literature, Faculty of Languages and Arts, Universitas Negeri Medan.

## 2 Method

This study used a survey approach in describing the respondents' answers [12]. The survey study is designed to assess: (1) students' perceptions, (2) teaching material resources, (3) learning competencies, and (4) teaching material design. The data were obtained by filling out an online questionnaire using Google Form for 125 students taking the editing skills course from the Indonesian Language and Literature Education Study Program, Universitas Negeri Medan. This questionnaire uses a Likert scale consisting of: strongly agree (5), agree (4), uncertain (3), disagree (2), strongly disagree (1). The questionnaire data were analyzed by using the Weight Mean Score (WMS) to obtain an interpretation of the trend in the average value of each variable. The following is the Weight Mean Score (WMS) table.

**Table 1.** Weight Mean Score (WMS)

Weight Mean Score	Interpretation	Weight
4.20 – 5	Strongly Agree	5
3.40 – 4.19	Agree	4
2.60 – 3.39	Uncertain	3
1.8 – 2.59	Disagree	2

## 3 Results and Discussion

The research produced a description of the needs analysis results for digital teaching materials in editing skills by using 3D Page Flip media. Previously, a research-based teaching materials had been developed by the author of this article [13]. The results of this research were able to increase the students learning independence. This research also seeks to present a new way from a previously prepared teaching material. Below are the research results and discussion based on the points of (1) students' perceptions, (2) teaching material resources, (3) learning competencies, and (4) teaching material design.

### 3.1 Students' Perceptions

The analysis of teaching material needs considers the students perceptions with the aim of examining the suitability of perceptions with the design for developing teaching materials [14]. The analysis of the student perceptions aims to see how the students as respondents view the potential use of digital teaching materials in the context of the developed 3D Page Flip media . The results of the student perception needs questionnaire can be seen in the following table.

**Table 2.** The Questionnaire Results on the Needs of the Students Perception

Indicator	Description	Score	Value
1. Students' knowledge	Having knowledge in using digital teaching materials on various types	505	4,04
2. Students' habits	Having the habit in using digital teaching materials (e-books/e-modules)	520	4,16
3. Motivation	Having an interest in using digital teaching materials	582	4,65

4. Perception of teaching materials	Having a positive view in using digital teaching materials	567	4,53
5. Development potential	Having an interest in using digital teaching materials based on 3D Page Flip E-Books	607	4,85
Average			4,49

Referring to table 2 above, it shows that there is a positive value regarding the use of digital teaching materials with a mean value of 4.49 in the WMS range 4.20 – 5 with the interpretation of 'strongly agree'. The student knowledge indicator obtained a value of 4.04 with the interpretation 'agree'. This shows that the majority of the students already have knowledge about digital teaching materials. The indicator of the students' habits got a score of 4.16 with the interpretation is 'agree' and stating that the students are getting used to using digital teaching materials, so there is a tendency to develop digital teaching materials based on 3D Page Flip e-books. On the other side, the indicator of motivation obtained a value of 4.65 and the perception of teaching materials was 4.53, with the interpretation is 'strongly agree'. This shows that the students have an interest and positive view of using the digital teaching materials. This was then proven by the score obtained on the development potential indicator which obtained 4.85 with the interpretation is 'strongly agree' for the development of digital teaching materials based on E-Book 3D Page Flip media.

### 3.2 Teaching Material Resources

Teaching material resources tells about the analysis of learning resources adopted by the students in the lecture process. The learning resources can include people, objects, methods, and the surrounding environment which have information that can be easily accessed by the students [15]. The resource analysis in this study is determined the content and presentation of the developed teaching materials, so that the teaching materials produced are contextually appropriate to the students' circumstances and conditions. The results of the score calculation for the need for teaching materials can be seen in the following table.

**Table 3.** The Questionnaire Results on the Needs for Teaching Material Resources

Indicator	Description	Score	Value
1. Source material	The substance of teaching materials is available and connected to journal articles, books, the surrounding environment and other sources	573	4,58
2. Technology availability	The students have technological items such as gadgets and laptops to support the use of digital teaching materials	610	4,88
3. Technology understanding	The students have the ability to use/operate digital-based teaching materials	514	4,11
4. Ease of access	The students can access digital teaching materials at any campus location and learning conditions	480	3,84
Average			4,35

Referring to table 3 above, it shows that the four indicators show positive values for student readiness and resources for using digital teaching materials, resulting in an average score of 4.35.. which is in the WMS range 4.20 – 5 with the interpretation of 'strongly agree'. The indicator value for material sources was obtained at 4.58 with the interpretation is 'strongly agree'. This indicator shows the students' agreement in selecting the learning resources that come from journal articles, books and the environment that are related to the editing skills course. The indicator of availability of technology got a score of 4.88, which states that almost all the students have laptops/gadgets that are used to access digital teaching materials. Then, the indicator of technology understanding got a score of 4.11 with the statement that the students are able to use/operate digital-based teaching materials. Finally, the indicator of ease of access got a score of 3.84 with the interpretation is 'agree' and that the students can easily access the digital teaching materials in the campus environment and in the learning process.

### 3.3 Learning Competencies

Learning competency analysis is meant to map the lessons achievements and learning materials through identifying the abilities and skills that the students must have in or after the learning process [16]. This competency analysis is from the learning objectives of the editing skills lesson, as well as the indicators related to the implementation of the learning process. The following are the results of the learning competency needs questionnaire.

**Table 4.** The Questionnaire Results on the Needs of Learning Competency

Indicator	Description	Score	Value
1. Basic Concepts of Editing	The teaching materials were developed starting from an understanding of the basic concepts of editing	560	4,48
2. Ability in Understanding Ethics and editing tools	The teaching materials support the process of understanding the code of ethics and editing tools in the editing skills lessons	523	4,18
3. Skills Development	The teaching materials support the process of developing editing abilities and skills	527	4,21
4. Learning Simulation	Teaching materials guide learning simulations in the independent editing practice	540	4,32
Average			4,29

Referring to table 4. above, it shows that the four indicators show positive values for the need for learning competencies that support the achievement of editing skills. An average score of 4.29 was obtained which is in the WMS range 4.20 – 5 with the interpretation of 'strongly agree'. The indicator 'basic editing concepts' obtained a score of 4.48 with the interpretation is 'strongly agree'. This shows that the students agree the teaching materials should be developed starting from an understanding of the basic concepts of editing. The indicator of 'ability to understand ethics and editing tools' obtained a score of 4.18 with an interpretation is 'agree', so this indicates the students' need for teaching materials in the process of understanding the code of editing ethics and editing tools (words, word choice, sentences, paragraphs and others that related). Apart from that, in the 'skills development' indicator, the students expect teaching materials that can develop editing abilities and skills, with a score of 4.21 and with the interpretation is

'strongly agree'. Moreover, the 'learning simulation' indicator got a score of 4.23 with the interpretation is 'strongly agree', so this shows that there is a hope from the students to develop teaching materials that can guide the learning process of independent editing practice.

### 3.4 Teaching Material Design

The analysis of teaching material design needs is related to identifying the presentation and form of teaching materials that respondents want [17]. This analysis will provide an overview of the teaching materials design of editing skills based on 3D Page Flip media. The results of the questionnaire regarding the design needs of teaching materials are seen in the following table.

**Table 5.** The Questionnaire Results on the Needs of Teaching Material Design

Indicator	Description	Score	Value
1. Physical form	The teaching materials of 3D Page Flip E-Book were developed by using a combination media of audio, text, image and video.	527	4,21
2. Teaching Material Format	The teaching materials of 3D Page Flip E-Book are presented electronically with HTML links	524	4,19
3. Contents of Teaching Materials	Each teaching materials contain a complete introduction, content and conclusion	515	4,12
4. Type and Size of Writing	The teaching materials were developed by using a combination of League Spartan and Sans-Serif writing types with the sizes according to needs	543	4,34
5. Cover	The cover contains the title of the book in a combination of dark colors such as grey, navy blue, black or dark green	495	3,96
Average			4,16

Referring to table 5. above, it shows that the five indicators show positive values regarding the need for designing teaching materials according to students' needs in learning editing skills. An average score of 4.16 was obtained, which means the WMS range is 3.40 – 4.19 with the interpretation 'agree'. The 'physical form' indicator got a value of 4.21 with the interpretation is 'strongly agree', which indicates the approval for the development of 3D Page Flip E-Book teaching materials with a combination of audio, text, image and video media. The indicator of 'teaching material format' got a value of 4.19 with the interpretation is 'agree' to present -Book 3D Page Flip electronically with an HTML link. The indicator of 'content of teaching materials' got a value of 4.12 with the interpretation is 'agree' that the teaching materials were developed completely in each material. In 'type and size of writing' with a value of 3.34 and with the interpretation is 'strongly agree' for teaching materials developed with League Spartan and Sans-Serif writing types and sizes according to the needs. The 'cover' got a score of 3.96 with the interpretation is 'agree' that the cover of the teaching material contains a title with a combination of dark colors.

## 4 Conclusion

Based on the needs analysis conducted to 125 students of the Indonesian Language and Literature Education Study Program, Unimed by using Weight Mean Score (WMS) interpretation data analysis, it was obtained the needs analysis value for 1) students' perception, with an average of 4.49 and with the interpretation is 'strongly agree', which states that the students have a positive perception of the development of the digital teaching materials, so that they agree to develop teaching materials for editing skills lessons based on E-Book 3D Page Flip ; (2) teaching material resources, obtained an average score of 4.35 with the interpretation is 'strongly agree' for developing teaching materials sourced from journal articles, books, and the surrounding environment in which the students also have readiness in efforts to access the developed digital teaching materials; (3) learning competency, with an average score of 4.29 with the interpretation is 'strongly agree' for the development of teaching materials that can support the students' editing abilities and skills through independent learning; and (4) design of teaching materials, obtained an average score of 4.16 with an interpretation is 'agree' for developing teaching materials for editing skills courses based on E-Book 3D Page Flip with a combination of audio, text, image and video media, presented with HTML link format, fully developed for each material by using League Spartan and Sans-Serif fonts and sizes according to the needs, and has a cover with a title in a combination of dark colors.

In developing the teaching materials, needs analysis activity is the primary thing that must be conducted. This aims to map the content and materials design that suit the students's characteristics and needs as consumers. This research makes an effort to analyze the need for teaching materials using 3D Page Flip E-Book for editing skills. It is recommended for other research to carry out a more specific needs analysis and material needs to provide truly high-quality teaching materials for the students to support the achievement of expected students' competencies.

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