The Feasibility of Developing Electronic Student Worksheet in English Course

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Abstract. This study aims to assess the viability of using digital student worksheets in English classrooms at Medan State University's Faculty of Primary School Teacher Education. This research and development project employs the ADDIE approach, which stands for analysis, design, development, implementation, and evaluation. In terms of the validity of the product, the average percentage of validation results from media experts was 84.35%, while the average percentage from material experts was 76.78%. Both of these findings fall into the valid category.

Keywords: Development, Electronic Student Worksheet, Feasibility

1 Introduction

Universities and the goal of education are closely intertwined. Education seeks to create people with character, life skills, and the capacity to make constructive contributions to society in addition to academic intelligence. Through formal instruction, character development, research, and professional and social activities, universities serve as higher education institutions that guide students toward accomplishing these learning objectives. Teaching resources are essential to the university educational process in order to meet these learning objectives. By giving students the information, useful skills, and insights they need to grow both personally and professionally, effective instructional materials help students reach their learning objectives. Universities contribute to the development of a generation that is capable, creative, socially conscious, and knowledgeable by offering a wide range of resources addressing theory, practice, and ethics. Teaching materials are a collection of organized, comprehensive, and simple-to-understand resources designed to assist teachers and students in meeting learning goals [1]. Additionally, teaching materials are a collection of educational resources that include media and communications organized in a methodical and logical manner [2]. Then, teaching materials are resources created to assist teachers and students in successfully achieving learning goals [3]. According to the following viewpoint, teaching materials include textbooks, modules, and technology-based instructional resources, among other types of materials used to impart knowledge [4]. According to a different viewpoint, teaching materials are educational resources that are organized methodically and come in a variety of formats, such as text or visual aids that enhance learning [5]. According to the aforementioned expert viewpoints, teaching materials are a collection of materials organized in a comprehensive, systematic, and structured way with

the primary goal of facilitating the achievement of learning objectives by both educators and learners.

The process of education can make use of a wide variety of instructional resources. Books, modules, and student worksheets are examples of printed teaching materials that continue to play a significant role in the educational process. When it comes to assisting students in understanding the topic on their own, printed teaching materials are thought to be more valuable [6]. Additionally, online presentations, learning videos, and e-books are examples of digital instructional resources. In the digital age, these instructional resources are becoming more and more crucial as they let students learn at any time and from any location [7]. Then, blended learning options mix online and in-person training. This provides students with a customizable learning experience and optimizes the engagement of teachers in the learning process [8]. According to the second viewpoint, project-based learning resources motivate students to learn via hands-on, real-world experiences. This approach enhances not just technical proficiency but also critical and cooperative thinking abilities [9]. It may be inferred from the aforementioned expert comments that the different kinds of instructional materials demonstrate a range of approaches that are tailored to the requirements and advancements of technology. The variety of instructional resources provides a more suitable and flexible method to satisfy the many demands of contemporary education.

The previously printed Student Worksheet must be replaced with a non-printed version per the curriculum. This student worksheet features more interesting, student-relevant questions and brief material. The student worksheet is one teaching tool that aligns with the Course Competency Achievement. Lecturers utilize it to introduce learning topics and provide resources, summaries, and instructions for students to follow while completing learning tasks. As times have changed, Student Worksheet has also changed to include electronic media or technology in its creative presentation. This is called Electronic Student Worksheet. Lecturers may now more easily conduct learning activities because to the availability of electronic student worksheets, which, when paired with a learning model, boosts student engagement.

A new invention that makes studying simpler both within and beyond the classroom, electronic student worksheets can help students study more efficiently and realistically [10]. The goal of electronic student worksheets is to help students follow lectures effectively so they may learn more effectively and practically. on order to foster interest and active competence, students must be able to answer issues on electronic student worksheets [11]. As a means of encouraging pupils to participate actively in their education, lecturers in charge of the courses have innovated by providing electronic student worksheets, which are more accessible, affordable, and practical. There are resources in electronic student worksheets that help pupils learn on their own. Electronic student worksheets can save time since they can be utilized on smartphones and outside of the classroom, and their contents are less likely to be lost or destroyed [12]. The usage of electronic student worksheets as instructional resources serves a specific function. Encouraging students to actively engage in the development of material concepts is one of the objectives of electronic student worksheets. Student involvement in the teaching and learning process has increased, 3). Helping pupils discover and develop their skills is the aim of training, 4). Electronic student worksheets are meant to make it easier for teachers to create lesson plans [13].

Students may improve their ability to be creative, reason, and critically evaluate with the use of learning models and electronic student worksheets. In class, students actively participate in the learning process as well. One of the learning strategies that educators might employ during the teaching and learning process is the Cooperative Group Investigation (GI) Model. This is due to the fact that, in addition to GI, which stresses student engagement and activity in seeking

out educational content from printed books, the internet, newspapers, and other sources, the GI Cooperative Model is a task that may be utilized in conjunction with Electronic Student Worksheets. Respecting other people's opinions, encouraging participation, having the courage to ask and answer questions, taking turns with different tasks, and speaking in front of an audience all require an understanding of cooperative abilities. Thus, by using the GI Cooperative Learning Model, all students may actively engage, whether they are studying in groups or alone, they should pay attention, ask questions, and listen to conversations..

Essentially, both individually and in groups, the English lecture teaching method enables students to actively seek for, research, and really discover subjects and ideas. Enrolling in an English program allows students to have firsthand experiences that improve their comprehension, retention, and opinion formation of the content they learn. Naturally, this condition forces the professorial author to think of fresh teaching materials for English language acquisition classes.

Digital technology can provide new chances and techniques for distant learning, which might enhance the teaching and learning process utilizing digital devices, according to the 2018 Program for International Student Assessment (PISA) research. A computer and an internet connection are undoubtedly necessary for at-home online study. According to 2018 PISA statistics, there are significant differences in the availability of computers at home for educational purposes both within and across nations. More than 95% of respondents from across the world said they use a computer at home for online learning. However, just 34% of students in Indonesia reported having a computer for online learning. Digital technology, which has the highest correlation with educational achievement and equity, is linked to the digital resources and assistance that educators and students may require. The survey's results are rather alarming, and they may make it difficult for students without computers to learn online.

Based on the GI Type Cooperative Learning Model and taking into consideration the present circumstances, researchers have developed an electronic student worksheet for the English course in Elementary School Teacher Education at Medan State University's Faculty of Education. The teacher may encourage more creativity and improve learning results depending on the individual traits of each student by presenting difficulties in the classroom.

The research title "Development of Electronic Student Worksheets Based on English Subjects in Primary School Teacher Education, Faculty of Education, Medan State University" aligns with the previously indicated justification. The purpose of the study is to determine if using electronic student worksheets in English classes at Primary School Teacher Education, Faculty of Education, Medan State University, is feasible given the background information previously supplied.

2   Research Method

This study was carried out using the ADDIE methodology, which stands for Analysis, Design, Development, Implementation, and Evaluation.   Based on the Group Investigation (GI) Type Cooperative Learning Model, an electronic student worksheet was created for the English course at Medan State University's Faculty of Primary School Teacher Education. The following graphic illustrates the several stages used in the ADDIE development paradigm.

Fig. 1. ADDIE Development Model

The research was conducted at Medan State University's Faculty of Education's primary school teacher education study program. 225 students from 11 classes—both regular and extension—who were all enrolled in the third semester of 2023 at Medan State University's Faculty of Education's Elementary School Teacher Education program participated in this study. The research sample was picked at random, and one class—Class B Regular 2023—with a total of 28 pupils was chosen.

In this study, questionnaires and observation are the methods used to gather data. To ensure that the final output aligns with the findings of the observations, information on learning-related issues will be gathered through observation. One method of gathering data is observation, which is seeing something or something happening in the open. Observations can be carried out in a participatory or non-participatory fashion, depending on the researcher's position in the field and degree of engagement in the situation being observed [14]. In the meanwhile, questionnaires were used to gather data on media expert validation, material expert validation, and student evaluations of the goods under development. By posing a sequence of questions to respondents, a questionnaire seeks to objectively gather data. how crucial it is that participants can easily complete the questionnaire and that it aligns with the goals of the study [15]. Questionnaires for students, media professionals, and material specialists were developed using a Likert scale. A score of 1 indicates significant disagreement, a score of 4 indicates agreement, a score of 3 indicates disagreement, and a score of 5 indicates strong agreement.

Qualitative and quantitative descriptive analysis procedures are the methods of data analysis that are employed. Responses or recommendations from students, media experts, and material experts are used to gather qualitative descriptive analytical approaches. On the other hand, quantitative descriptive analysis methods are derived from the percentage findings of students, media experts, and material experts.

The feasibility of the resulting Electronic Worksheet is evaluated using the formula $Vs = \Sigma x / \Sigma n \times 100\%$. After that Vs is consulted with the % module validity classification to ensure whether the product produced is valid or not.

Table 1. Classification of Percentage of Validity of Electronic Student Worksheet

Validity Level	Validity Criteria
$85,01\% \leq Vs \leq 100,00\%$	Very valid
$70,01\% \leq Vs \leq 85,01\%$	Valid
$50,01\% \leq Vs \leq 70,00\%$	Less valid
$01,00\% \leq Vs \leq 50,00\%$	Invalid or may not be used

3 Results and Discussion
3.1 Results

T The research findings in this article only include the phases of analysis, design, and development since, at the time this article was produced, the research was still in its development stage. At the analysis step, there are several activities.

The process of analyzing student characteristics involves determining the traits that students possess as the primary focus of the Electronic Student Worksheet. Based on this analysis, it is known that students require instructional materials to facilitate the lecture process. Based on observations from 77 students, 94.8% of them like Electronic Student Worksheets that can support the material. 98.7% of students said that lecturers' Electronic Student Worksheets should be easily accessible anytime and taken anywhere, and 97.4% of students said that they can be used and make it easier to learn independently. These findings suggest that lecturers' teaching materials should be easily accessible at any time and from any location without being restricted by time or space. The purpose of the analysis of learning objectives is to determine the LKS Elektronik that is required for development in accordance with CPMK in the R*encana Pembelajaran Semester* (RPS) throughout the learning process. RPS in English language instruction at the Guru Sekolah Dasar of Universitas Negeri Medan provides an analysis of the learning objectives. As a result, it is said that in order to achieve the learning objectives that are in line with RPS, it is necessary to develop and give students electronic work samples that are in line with CPMK.

The design step comes after the analytical stage is completed. In order to incorporate various interactive aspects, the product is first created as a storyboard, then it is realized and designed using Canva. The final product is a PDF file that is loaded into the Flip PDF Professional program. The outcome of this process will then be shown as a link. In development research, the design stage includes a number of actions, including initial media design, benchmark test preparation, media selection, and format selection.

A design blueprint and other materials were supplied in order to develop an electronic student worksheet based on the Group Investigation Type Cooperative Learning ModelThe electronic student worksheets are then assessed by a validator using the Investigative Group Type Cooperative Learning Model. Based on the created Cooperative Learning Model of the Group Investigation type, validators offer evaluations, recommendations, and remarks on the electronic LKS. The Electronic Worksheet based on the Group Investigation Type Cooperative Learning Model is created using the validator's critique and recommendations as a guide to enhance the final output based on the assessment results. This guarantees that the electronic worksheets produced are beneficial in terms of both content and appearance. The evaluation results of media professionals are as follows:

Table 2. Results of Material Expert Validation

Aspect	Score	Max Score	Percentage	Information
Material Suitability	22	28	78,57%	Valid
Language Compatibility	9	12	75%	Valid
	Average		**76,78%**	**Valid**

It is possible to infer from the preceding table of material validation findings that the Electronic Student Worksheet's appropriateness evaluation has a percentage of 78.57%, indicating that the content is comprehensive and compliant with CPMK and Sub CPMK. An evaluation of the Electronic Student Worksheet's language compatibility shows that the content contains communicative language, with a proportion of 75%. According to this study, the Electronic Student Worksheet has a 76.78% rating, indicating that it is appropriate for use in the learning process of English courses. The evaluation results of media professionals are as follows:

Table 3. Media Expert Validation Results

Aspect	Score	Max Score	Percentage	Information
Display Design	41	48	85,4%	Very Valid
Ease of Use of Electronic Student Worksheet	10	12	83,3%	Valid
Average			**84,35%**	**Valid**

The electronic worksheet display design has an evaluation with a percentage of 85.4%, according to the media validation results table above. This indicates that the arrangement of the display, menu, and buttons, as well as the font type, size, and color, are all well-arranged. A rating of 83.3% was obtained for the usability evaluation of electronic student worksheets, indicating that they are user-friendly and beneficial for students' teaching and learning assignments. According to this assessment, the Electronic Student Worksheet has an 84.35% assessment, indicating that it is appropriate for use in English course instruction.

3.2 Discussion

The researcher's electronic worksheet was then verified by two validators, a media expert and a material expert. It is possible to infer from the preceding table of material validation findings that the Electronic Student Worksheet's appropriateness evaluation has a percentage of 78.57%, indicating that the content is comprehensive and compliant with CPMK and Sub CPMK. An evaluation of the Electronic Student Worksheet's language compatibility shows that the content contains communicative language, with a proportion of 75%. It is possible to draw the conclusion that the Electronic Student Worksheet is appropriate for usage in the English course learning process since it has an assessment of 76.78%. The aforementioned media validation results table suggests that the display design of the Electronic Student Worksheet has an evaluation with a percentage of 85.4%, meaning that it has the correct menu and button arrangement in addition to the right size, color, and font type. With an ease of use assessment score of 83.3%, the Electronic Student Worksheet is unquestionably easy to use and competent to assist students in their educational pursuits. The results of this assessment indicate that the Electronic Student Worksheet has an 84.35% assessment, indicating that it is appropriate for usage in the English course learning process. According to the research conclusion, the degree of device design development [16] and research methods or techniques—that is, a set of actions

meant to create new goods or enhance current ones to take them into consideration [17]—are linked to the aspect of validity.

4 Conclusion

The evaluation of the viability of Electronic LKS has a percentage of 78.57%, indicating that the content is thorough and complies with CPMK and Sub CPMK requirements, according to the table of material validation findings above. With an assessment percentage of 75% for language appropriateness, electronic worksheets feature communicative language in their content. The Electronic Student Worksheet received a rating of 76.78% from this review, indicating that it is appropriate for use in English course instruction.

The electronic worksheet display design has an evaluation with a percentage of 85.4%, according to the media validation results table above. This indicates that the display design has the proper menu and button arrangement in addition to the appropriate text size, color, and type. Electronic student worksheets have been shown to be user-friendly and beneficial to students' academic endeavors, as seen by their 83.3% usability evaluation score. According to this assessment, electronic worksheets have an 84.35% assessment, making them appropriate for use in English course instruction.

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