Development of Microsoft Excel Features as A Complete Letter Creation Database in Supporting Indonesian Correspondence Learning

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Abstract. This research reveals the effectiveness of the using Microsoft Excel Features for making complete letter based on the excel database in supporting Indonesian Correspondence Learning. The research conducted in this research is a development research with ADDIE design stands for *Analysis, Design, Development or Production, Implementation or Delivery and Evaluations.* The system was developed based on technology i.e. the use of *Microsoft excel*. The advantage of *Microsoft Excel* is that it's free to access for a lot of people. The results showed that the development process based on the ADDIE model achieved includes analysis, design and development or Production, Implementation or Delivery and Evaluation. The feasibility level obtained by the media from the average material validation result is 3.00 with a decent category and from the results of validation media obtained an average of 3.44 with a very decent category. The system trials for students gained an average eligibility of 3.30 with a decent category. Thus, it can be concluded that the system in the Administrative Education study program can be used to improve knowledge for the student.

Keywords: Microsoft Excel, Letter Creation Database, Correspondence Learning, Administrative Education

1 Introduction

Indonesian Correspondence is one of the courses taught in many universities in Indonesia. This course learns how to write letters correctly and effectively. However, many students still experience difficulties in writing letters, especially in setting the correct letter format. The complete form of the letter includes the address, date, and letter number, opening greeting, opening paragraph, body paragraph, closing paragraph, and copy. Students are used to making these letters manually typed according to the order of completeness of the letters. One of the features in Microsoft Excel is the creation of a very systematic list or recap of data. With this feature, students can create a recap of mail data related to dates, letter numbers, opening greetings, and so on in order in the form of a table which can later be used as a database to make a full and

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complete letter without having to type manually. [1] One study showed that the use of Microsoft Excel-based learning media significantly improved students' ability to write letters in Indonesian correspondence courses. The average posttest score of the experimental class was higher than that of the control class. In addition, the results of data analysis show that the use of Microsoft Excel-based learning media can help students in planning and organizing the content of letters systematically, improve grammar and spelling, and improve the format and layout of letters accurately and consistently. [2] Other research revealed that the effective use of Microsoft Excel-based learning materials can improve students' ability to plan, organize, write, and revise letters systematically. The use of Microsoft Excel-based learning media can also help students improve grammar, spelling, formatting, and letter layout appropriately and consistently [3].

Students with Indonesian correspondence courses are very required to master making correspondence quickly and precisely, so it is felt that technological assistance is urgently needed to make their correspondence work more efficient. Technologies that can be used include features from Microsoft Excel. [4] In terms of handling business letters, the use of Microsoft Excel in teaching business correspondence can improve the effectiveness of learning and students' ability to write business letters. Excel has an important role in business communication. Therefore, it is recommended for business practitioners (in this case, students as prospective practitioners) to master the use of Excel as a tool in business communication [5]. Another thing that supports the use of excel can help students in managing the data and information needed in business letters [6]. The feature in Microsoft Excel can be used as a structured database which can later be initialized with Microsoft Word through the mail merge system to create a single letter with a complete form without having to be created manually. Another finding mentions that it is recommended for lecturers and lecturers in the business field to use Excel as a tool in teaching business correspondence and to consider including assignments that require the use of Excel [7]. Another advantage is revealed that Microsoft Excel can play an important role in improving the ability to write business letters in English. Therefore, it is recommended to integrate the use of Microsoft Excel in the teaching of business correspondence [8]. Based on the results of initial observations, it was found that the making of letters to students of the Office Administration Education study program is still carried out in a template and manual manner which can reduce the effectiveness of time and also efficiency in their work, especially in making letters. The use of one of the excel features which is used as a structured database which is then inaugurated with the Microsoft word application through the mail merge feature can make the table data list containing parts of the letter automatically turn into a full form of mail without having to format the letter template. This is considered to be very convenient and makes correspondence work more effective and efficient. Therefore, research on the Development of Microsoft Excel Features as a Database for Making Complete Letters in Supporting Indonesian Correspondence Learning is very important to be carried out.

1.1 Problem-Solving Approach

The problem of ineffective letter making, especially in learning Indonesian correspondence, has indeed been encountered in various universities. The creation of letters that are still templated and typed and formatted manually greatly reduces the effectiveness of time and also the efficiency of work in making letters in full and complete form. It takes a long time to make a letter manually and format it manually, sometimes errors also still occur due to inaccuracy or rush to complete the letter work. Therefore, one way to overcome the problem of still ineffective letter making, especially in the Indonesian correspondence course, it is necessary to develop a feature that can help this through the Microsoft Excel application which can be used as a comprehensive and integrated letter making database. Students do not need to make a letter in a template Return, they will only fill in data such as letter number, letter date, and so on in the form of a table in the Microsoft Excel application. This feature in Microsoft excel will be developed by integrating with the Microsoft Word application through the mail merging feature.

1.2 State of The Art and Novelty

Research on soft skill learning has been carried out by several researchers Although Microsoft Excel has become one of the most commonly used productivity software in various fields, its use in the context of learning Indonesian correspondence is still relatively limited. Previous research tended to focus on the use of Excel in data analysis or financial management, but not many have considered its potential application in language correspondence learning. Therefore, there is a need to fill this gap by investigating the development of Microsoft Excel features as a complete letter making database in support of Indonesian correspondence learning. Previous research has only focused on a few parts of the invitation letter that are integrated from Microsoft excel to Microsoft Word [9]. This research will present novelty by integrating Microsoft Excel in language correspondence learning by developing a full letter creation feature from letter number to copy with a Microsoft excel database integrated with Microsoft word in Indonesian correspondence learning. Thus, this research is expected to broaden the insight into the potential use of Excel in the context of language education and make a positive contribution to the development of curriculum and teaching methods.

2 Method

This research is development research. The product produced from this research is in the form of a full data-based letter format from Microsoft Excel. The development design that will be used in this study is ADDIE. The ADDIE model stands for Analysis, Design, Development or Production, Implementation or Delivery and Evaluations developed by Dick and Carry [10].

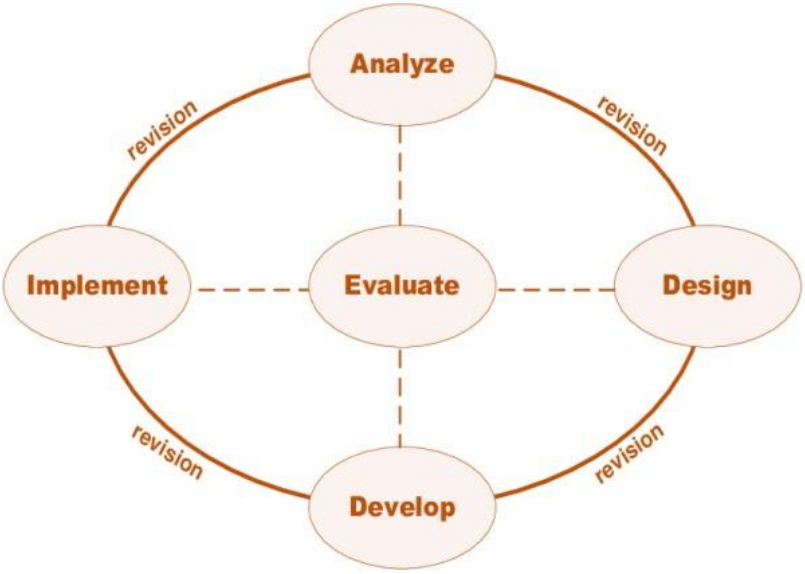

Figure.1. ADDIE Development Model Standards

Based on the figure above, the explanation of the ADDIE development stage in this study is as follows. (a) Analysis, the stage where the researcher analyzes the need for the development of teaching materials and analyzes the feasibility and conditions of development. Needs analysis is used to determine the right problems and solutions and determine student competencies. (b) Design, at this stage start designing the database from Microsoft Excel related to the previous analysis. Then determine the elements needed in the excel database such as the preparation of tables and database frameworks as well as references to be developed against the material. In addition, at this stage, instruments are prepared as a tool to measure the feasibility of the database to be developed. (c) Development, the development stage is the stage of product realization in the form of a Microsoft Excel database which is integrated with Microsoft Word through the Mail Merging feature in accordance with the development design. At this stage, the development is carried out according to the design. This media was developed using Microsoft excel and Microsoft word applications. After the development is carried out, an assessment or validation is carried out by expert validators, namely media experts, and material experts, using the instruments that have been prepared in the previous stage. (d) Implementation, at this stage a product trial was carried out for Office Administration Education students, UNNES who received 3 classes of Indonesian correspondence courses. The trial was carried out by lecturers who taught the course using a Microsoft excel database for making letters. The researcher serves as an observer and records everything on the observation sheet to assess the shortcomings of Microsoft excel as a database. After the trial process is completed, students are given a questionnaire to find out the students' response to the use of Microsoft excel as a database for making letters. (e) Evaluate, at this stage the researcher made the latest revision of the

Microsoft excel database which was developed based on the input obtained from the response questionnaire and field notes on the observation sheet. This is done so that the Microsoft excel database developed is in accordance with the needs of students and can be used in a wider realm. The Object Information Source in this study is students who take the Indonesian correspondence course in the Department of Office Administration Education, Faculty of Economics and Business, Semarang State University. Which consists of two classes, namely class A and Class B. Data Collection Procedure Data collection in this study uses an instrument in the form of a questionnaire that is independently developed based on relevant theories. There are two groups that will be observed, namely: (1) the experimental group; (2) control group. The experimental class was given treatment using the Microsoft excel database in creating letters, while the control group was not given treatment. The trial was carried out for 4 meetings. Furthermore, students are given a questionnaire related to the development of the Microsoft excel database and questionnaires related to learning motivation are given at the beginning and end of the meeting which aims to measure the effectiveness of the Microsoft excel database in increasing student learning motivation.

Research Instruments This research uses instruments in the form of questionnaires and observation sheets. The questionnaire was used to measure the effectiveness of the Microsoft excel database that was tested on students. While the observation sheet is used to record everything on the observation sheet to assess the shortcomings of the Microsoft excel database

Data Analysis Method The data in this study uses the results of a questionnaire that has been disseminated and then tested using the Paired Sample Test and Independent Sample Test to measure the difference before and after treatment and to determine the effectiveness of the use of the Microsoft excel database in making complete letters in the Indonesian correspondence course. The tool used in the analysis of research data is using IBM SPSS 25 software.

3 Result and Analysis

3.1 System Development Process

The first stage in this development research is a needs analysis by making observations in the Office Administration Education study program, Faculty of Economics, State University of Semarang. The results of the analysis will be used as a reference for the development of e-modules on teacher professional ethics. Referring to the needs analysis, an overview of the problems faced and the facilities in the Office Administration Education study program was obtained.

The second stage, namely the design stage, is a follow-up to the needs analysis, the design of the complete letter based on Microsoft Excel is adjusted to the needs analysis. Flow charts are used to help design Indonesian correspondence learning media.

The design in the form of a flowchart can be seen in the following image:

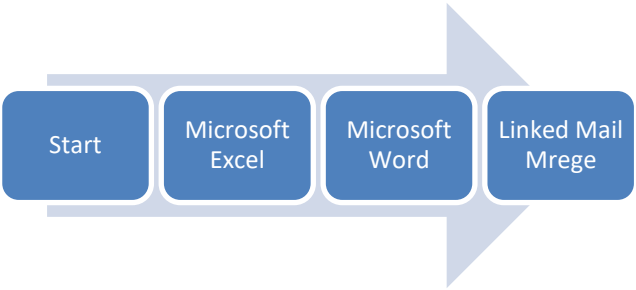

Figure. 2. Complete Mail System Flow Chart Based on Excel Database

The learning media flow chart above explains that the media starts when Microsoft Excel users fill in complete mail data from letter numbers to signatory officials in the form of tables as a database in Microsoft Excell. Then in Microsoft Word a complete letter arrangement is created, which then each part is connected to the Microsoft Word database using the mail merge sub menu.

The next step in the design stage after creating a flowchart is the preparation of a storyboard with a double-column model. This is used as a sketch using words. The complete letter creation system storyboard based on excel database is made in the table below.

Table 1. Storyboard Complete mail system using excel database

Display	**Interaction visual**	**Audio**
Start	Microsoft Excel View	No sound
Microsoft Excel	Table of parts of the letter from the letter number to the signing official	No sound
Microsoft Word	Full blank mail display	No sound
Mail Merge	Menus used to connect excel database tables with Microsoft word	No sound
Linked	Connect each letter section from Microsoft word with the letter section table in Microsoft excel	Power point, images, Without voice
Full Letter Results	Full letter view ready to print out	No sound

The plan contained in the storyboard is realized with multimedia elements in the form of text, images, and tables that can be accessed easily, quickly and for free. This system is realized with Microsoft Excel, while another service that is useful as a support is Microsoft Word. Third, the development stage, with the activity of actualizing the system planned at the design stage, until it becomes the final product. The development

stage has work procedures, including: (a) creating a complete letter creation system based on excel database; (b) conducting expert alleviation; (c) group trials.

The excel database-based complete letter creation system is able to display the complete letter from (1) letter number, (2) page, (3) attachment, (4) opening greeting, (5) inner address, (6) opening paragraph, (7) core paragraph, (8) closing paragraph, (9) closing greeting, (10) signing official, (11) signing official identification number, (11) copy. Which does not need to be made manually in Microsoft Word. Users only fill in the table based on the required data and will automatically display a letter with a complete format according to the excel database. The following is a complete letter creation system based on Excel Database in Figure 3.

The user first creates a table in Microsoft Excel in the form of (1) letter number, (2) thing, (3) attachment, (4) opening greeting, (5) inner address, (6) opening paragraph, (7) core paragraph, (8) closing paragraph, (9) closing salutation, (10) signing official, (11) signing official identification number, (11) copy. After that, the user creates a complete part of the letter in Microsoft word based on the data on the excel table from the letterhead delivered to the signing official.

Next, users fill in the details from the excel table based on the needs of the letter to be made. Followed by linking Microsoft word with the Microsoft excel database through the mail merge menu. The linking process must be appropriate, for example, the number table in Microsoft excel must be linked with the number part in Microsoft word, and so on until the signing official and a copy.

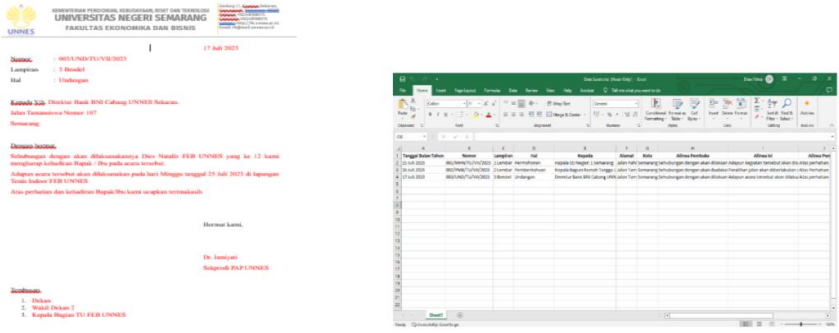

Figure. 3. Excel Database-based complete letter creation system

The fourth stage is the assessment of material experts, media experts, and e-module trials on 3 classes of students majoring in Economic Education with a concentration in Office Administration Education. The material expert who assessed was Mr. AS., S.Pd., M.Pd., as a lecturer in the Office Management study program at Office Administration Education, Faculty of Economics, State University of Semarang. Mr. AS., S.Pd., M.Pd.. provide some suggestions for improvement. Letterhead can be included in the database

so that it also gets automatic output in Microsoft word, can facilitate the forms of letters because the forms of standard letters are diverse, the display in excel is made in color for each part of the letter to make it more attractive.

On May 12, 2024, the media validation activity was carried out by Dr. BEP, S.Pd., M.Pd as a lecturer in Media and Language Literacy Teaching Materials, Faculty of Education, Sarjanawiyata Tamansiswa University, Yogyakarta. Comments and suggestions from Dr. BEP, S.Pd., M.Pd provide suggestions related to the activation of dictionaries on the letter feature in Microsoft word so that the use of standard language for letter creation is more maintained.

The trial will be conducted from May 12 to 15, 2024. Students are given an online response questionnaire through a google form to assess the feasibility of the media on the Likert scale. The results of the students' responses were successfully obtained, accompanied by some input to find out the lack of media from the user's point of view to serve as a reference for improvement.

3.2 System Eligibility Level

The validation of material experts is carried out to assess the aspects of the scope and accuracy of the material, the efficiency of the material and the suitability of the material with the student's learning motivation. The results and validation analysis of the materials expert can be seen in the following table:

Table 2. Results of Validation of Material Experts

Aspects	Indicator	score	Categories
Scope of Materials	Indicator conformity with Basic Competencies	3	Good
	Conformity Learning Objectives with indicator	3	Good
	Conformity material with learning indicators and objectives	3	Good
	Equipment Materials according to with Basic Competencies	3	Good
	Systematics of presentation	2	Quantity good
Material Accuracy	Language clarity	4	Excellent
	Clarity of terms	4	Excellent
	Clarity of material	3	Good
	Adequacy of training	2	Quantity good
	Display clarity	3	Good
	Systematics are appropriate withBasic Competencies	3	Good

	System difficulty level	3	Good
	Appropriateness of presentation	3	Good
Completeness of Dishes	Exist Listening activity *Input Data*	4	Excellent
	There is an activity to listen to *Letter Making*	3	Good
	There is a display of the letter to be corrected	3	Good
	There is a complete letter display	3	Good
Facilitates conceptual understanding	Exist table display that requires students to understand the concept of letters	3	Good
	There is a full letter presentation that increases students' understanding of the concept of a good letter	3	Good
	There is a concept presentation	3	Good
	There are results of the display of the letter that requires students to evaluate the truth	3	Good
Motivating Student Learning	Material push Student Curiosities	3	Good
	Adequacy of feedback	2	Quantity good
	There are activities that make students interact socially (processing)	3	Good
	Exist activity to present the material that has been studied	3	Good

Based on the results of the assessment, an average score of 3.00 was obtained with the category of feasible. The feasibility level of the excel database-based letter making system based on the validation of material experts is in the good category, therefore the media is suitable to be used as a learning medium for the Indonesian correspondence course of teacher training for the Office Administration Education study program.

The validation of media experts is carried out to assess aspects of media relevance, technical quality, display, and software engineering, as well as the accuracy of the media with students' motivation to learn. The results and analysis of the validation of media experts can be seen in the following table:

Table 3. Media Expert Validation Results

Aspects	Indicator	Score	Categories
Relevance	Media suitability with purpose learning	3	Good

media	Media suitability with characteristic student	3	Good
	Conformity language	4	Very Good
	Language skills used	3	Good
	Linkages between indicator	3	Good
	Relatedness to material	3	Good
	Conformity language	4	Very Good
Quality Technical	Clarity Use	4	Very Good
	Facilities Operation	3	Good
	Accuracy Menu Usage	4	Very Good
	Facilities Menu Selection	4	Very Good
	Consistency Order	4	Very Good
	Facilities process Appearance fill	3	Good
	Text efficiency	4	Very Good
	Display Efficiency	3	Good
	Facilities Process	2	Not Good
Quality Display and Impression	Conformity System Placement and *Lay Out*	3	Good
	Icon clarity and buttons	3	Good
	Linkages between	3	Good
	Highlights Display picture	3	Good
	Display compatibility with Material	4	Very Good
	Clarity letter symbol and symbol that Used	4	Very Good
	Type readability and font size	4	Very Good
	Clarity Display and color	3	Good
	Housekeeping media that pull	3	Good
	Conformity Display proportions Presented	4	Very Good
Software Engineering	Creative deep Pouring idea or ideas	4	Very Good
	Facilities and Simplicity deep Operation	3	Good
Motivation Learn	Display beginning Facilitate Determination Activities Next	4	Very Good
	Presentation of material allow Student Learning self-sufficient	4	Very Good
	Media can Use anytime and anywhere	4	Very Good
	Media pull attention to learn	3	Good
	Media can repeat the material learned	4	Very Good
	Media can display Practice Questions	3	Good
Sum		117	
Mean		3.43	Highly Worthy

Based on the results of the assessment from media experts, an average score of 3.44 was obtained in the Very Feasible category. The feasibility level of the complete letter

making system based on excel database based on the validation of media experts is in the good category, therefore the media is suitable to be used as a learning medium for Indonesian correspondence courses for the Office Administration Education study program.

The Validation aspects assessed at the trial stage are the quality of content, materials, display and presentation, software engineering, and the suitability of the media with students' learning motivation. The results of the full implementation phase can be seen in the following table:

Table 4. Student Response Assessment

Aspects	Indicator	Score
Content Quality and Purpose	Materials presented deep system in obviously,	3.4
	Materials in system Presented so complicated	2.8
	Display fit	2.8
	Understand concept material	3.3
Quality technical	Facilities Using *the e-module*	3.8
	Easy to operate system	3.6
	Inside menu *Excel* appropriate with material	3.6
	Inside menu *Excel*It's quick in displaying Materials Presented	3.6
	Easy in the process of working	3.4
Display and impression quality	System with good display	3.4
	Attractive display	3.4
	The display is in accordance with the material presented	3.3
Software engineering	Practical and flexible system	3.6
	There are shortcomings in the system	2.8
Learning motivation	The system increases motivation	3.4
	Not comfortable to use the system	3
	Difficulties in learning to use istem	3.1
	Feel lazy Learn with system	2.9
	Increasingly confused Understand Letter Making Materials After Using the System	3.1
	Satisfied with system	3.4
	Student can learn independently	3.5
	Can repeat material What to learn	3.5
	Sum	**76.5**
	Mean	**3.3**
	Category	**Proper**

Based on the results of the assessment, an average score of 3.30 was obtained with the feasible category. The feasibility level of the complete letter making system based on excel database based on student response assessment is in the appropriate category,

therefore the media is suitable to be used as a learning medium for Indonesian correspondence courses.

The development of a complete letter making system based on excel database through five stages, namely Analysis, Design, Development or Production, Implementation or Delivery, and Evaluation. The process of creating a system is carried out in stages and produces the right learning system, a series of material expert validation, media expert validation, and student responses are carried out.

The results of the validation of the material experts show that this Office 365 Onenote-based e-module is feasible with an average of 3.00. The assessment was carried out on the aspects of the scope and accuracy of the material, the completeness of the material, and the suitability of the material with the student's learning motivation. The feasibility level of the system based on the validation of material experts is in the good category, so the system is suitable for use as a learning medium for Indonesian correspondence courses for the Office Administration Education study program.

The results of the validation of media experts by Dr. BEP, S.Pd., M.Pd. showed that the complete letter creation system based on excel database was very good with an average score of 3.44. The validation of media experts is carried out to assess aspects of media relevance, technical quality, display and display, as well as software engineering, as well as the suitability of the media with students' learning motivation. Based on the results of the assessment from media experts, an average score of 3.44 was obtained in the Very Feasible category. The feasibility level of the system based on the validation of media experts is in the good category, therefore the media is suitable for use as a learning medium for Indonesian correspondence courses for the Office Administration Education study program.

After the feasibility is declared by material and media experts, this excel database-based complete letter creation system is tested on students. The number of assessment scores based on trial data for Office Administration Education students in grades A and B involving 25 students with 23 indicators was 1,913 with an average assessment of 3.30. Referring to the conversion result guide table, the criteria for the complete letter creation system based on excel database according to students are a feasible category.

Based on the results of the assessment of material experts, media experts and student responses as product tests of the excel database-based complete letter making system, it has advantages, for example: 1) The system can be accessed through the Microsoft excel application; 2) the system has fast response capabilities; 3) the medium has a good appearance; 4) the system displays materials that can be done independently or in groups; 5) The system can display text, table, mail data; 6) The media can be used anytime and anywhere. The developed system also has some disadvantages, such as 1) to access media you must first create a Microsoft account; 2) the media needs an internet network; 3) the system still does not facilitate various forms of letters; 4) Still susceptible to input errors in Excel tables

4 Conclusion

The assessment of the complete letter creation system based on excel database facilitates the creation of complete letters according to the parts of the letter without having to be made manually using the Microsoft excel database. The assessment of the subject matter experts obtained an average score of 3.00 in the Viable category. The evaluation of the excel database-based letter making system by media experts obtained an average of 3.44 with the category of Very Feasible. The feasibility of the media was tested on Office Administration Education students, who obtained a score of 3.30 which was also in the Feasible category. Based on this conclusion, this excel database-based letter creation system is suitable for use in the Indonesian correspondence course, Office Administration Education study program, Faculty of Economics, Semarang State University.

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