



Implementation of Computer Assisted Instruction Media to Improve Understanding of English Education Materials In SMA Subang

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ABSTRACT

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Computer Assisted Instruction (CAI) is a learning aid media that places the computer as an individual learning system device, where students can interact directly with computer applications and is designed to improve students' ability to understand the various subject matter that has been conveyed. CAI-based learning is able to bring a new atmosphere when the teaching and learning process is being carried out in the classroom. This study aims to develop and evaluate the Computer Assisted Instruction method that was developed through English subjects, while the research method used was development research through the results of field tests. So the results of this study explain that the product development of English teaching materials based on Computer Assisted Instruction (CAI) in improving student learning outcomes in the high school environment of Subang Regency is carried out by analyzing and developing these products starting from the instructional design stage, one-on-one test. one, small group test and field test results using students' pretest and posttest calculations, the feasibility of the Computer Assisted Instruction method got a positive response from all students and teachers, because the media helped students understand various English subject matter and was able to stimulate the mind, feelings, concerns and abilities or skills of students so that there are significant differences in student learning outcomes before and after using CAI media. In other words, CAI media for learning English is considered effective and can improve overall student learning outcomes.

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1. Introduction

The development of the world is always progressing rapidly every day, as well as the development of existing technology, almost all aspects of our lives require the role of technology to facilitate various activities and jobs to run quickly and effectively, for example with the emergence of computers, the internet and smart phones. , is now increasingly being used by all human beings, because basically the presence of technology and these devices is very helpful and facilitates various human activities, not least in the educational process, the use of technology in the teaching and learning process has indeed been going on for a long time and brought a myriad of changes. which is significant in the development of students in accepting new sciences, especially those related to technology and information (Uswatun et al., 2016).

Utilization of technology in the world of education must be utilized optimally because the process involves many intermediary media as well as an important and very strategic instrument in determining the success of the teaching and learning process of students. The role of technology can also stimulate the thoughts, feelings, attention and interests and willingness of students so that the teaching and learning process can take place in a fun and targeted manner. This explanation is in accordance with the preamble to the fourth paragraph of the 1945 Constitution, namely education is an effort to educate Indonesian people and develop their potentials, because in the learning process there is a process of changing the behavior of someone who initially does not know something then becomes aware, in other words, a process of behavior



change occurs. transfer of knowledge between teachers and students even by using some additional media.

Educational media is an important instrument in the process of student development while in the school environment because it includes messages, people, materials, tools, techniques and the environment that can affect student learning outcomes, besides that the media can also be used as a learning resource and can replace the teacher's role in the learning process, by using the media students can participate in the learning process so that the learning objectives are achieved according to the targets that have been previously set, but in measuring the quality of the learning process students the teacher can judge it from three important elements including (1) the level of participation and the type of learning activities experienced by students (2) The role of teachers in conveying their learning methods (3) Learning atmosphere, namely the more intensive student participation in teaching and learning activities, the higher the quality of the learning process. A high level of participation from students in teaching and learning activities can be achieved if they have direct opportunities to carry out various forms of assessment, especially gaining knowledge and understanding cognitively, personally, socially, and psychomotorically (Astuti, 2016).

The role of technology can also be applied in English learning methods, one of which is through the CAI (Computer Assisted Instruction) technique. CAI is the development of integrated information technology consisting of communication (interactive), audio, video, image display which is also known as multimedia technology. This media includes the use of computers in direct contact between teachers and students. Language is a communication tool used by humans as well as being a differentiator between humans and other living things, both individually and between individuals and between groups, the introduction of English in the teaching and learning process is a mandatory subject that must be mastered by students as a challenge in the era of globalization. English has become a second language that is widely used not only in the scope of education, but in society and to communicate both orally and in writing.

English subjects are the most studied foreign languages at various levels of education in Indonesia, which means that English is often used in the context of daily communication by various groups of people, but in fact the process of delivering English learning material so far is still often experiencing obstacles. and difficulties, due to various differences in both vocabulary and language structure when compared to Indonesian. So the introduction of the CAI method as an alternative in delivering English subjects is expected to speed up the learning process because it takes place in a fun way. Computer Assisted Instruction (CAI) is a form of learning that places computers as individual learning system tools, where students can interact directly with computer systems that are intentionally designed or utilized by teachers. The learning process is in the form of computer software which includes titles, objectives, learning materials and learning evaluations (Radjendra, 2020).

The CAI model developed must be oriented towards learning objectives according to competency standards, and meet the indicators achieved in each learning activity. In addition, by using the CAI method, students will be more interested in participating in the learning process which in the end the learning objectives will be achieved with maximum results. Computer Assisted Instruction (CAI) is a learning program that uses software in the form of a computer program that contains subjects, while Computer Assisted Instruction is classified into four presentation formats, namely tutorials, drills, simulations and games. The development of Computer Assisted Instruction (CAI) media will be presented in the form of continuous practice, through the help of computer devices and then clarified again by the understanding conveyed by the teachers. So based on the background description above, the researcher can focus on the core problem on how the CAI (Computer Assisted Instruction) method helps the student learning process, especially in the delivery of English subjects and whether the CAI (Computer Assisted Instruction) learning media is effectively used for learning English in Indonesia. among students and teachers.

2. Method

The development model that will be used in this research is the Research and Development development model. Research and Development is a research method used to develop or validate products that describe concepts that are interrelated from one step to another. This development design model has steps that must be taken to produce effective, efficient and attractive media. The steps include (1) potential problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product testing, (7) product revision, (8) trial use, (9) product revision, and (10) mass production. Meanwhile, data collection techniques were carried out by observation and interviews where in determining a data collection



method and data type, it should be adjusted to the data source and data to be taken. In this study, the methods that will be used to collect data on the development of the Computer Assisted Instruction (CAI) media use data collection instruments in the form of structured interviews (Saidah, 2020).

3. Results and Analysis

3.1 Mechanism of computer-based learning (Computer Assisted Instruction)

CAI (Computer Assisted Instruction) based learning is learning based on the concept of computer and multimedia learning. CAI-based learning is able to present learning that is more interesting, fun, and can improve learning outcomes. This CAI-based learning ability then becomes an urgent need to achieve quality learning that follows the times and also to realize a higher quality education system. The presence of technology and its devices in the learning process is functioned as a tool in conveying some subject matter that will be conveyed to students, therefore the role of a teacher is required to master and understand this Computer Assisted Instruction model because it can support various learning processes, especially material - English education materials.

Table 1
Teaching materials Technology media-based materials to be developed in English subjects (material display aspects)

No	Rated aspect	Evaluation
1	Materials relevant to competency standards	3
2	Learning instructions are clear with the subjects you want to develop	4
3	Indicators of success are in accordance with the curriculum	3
4	The description of the material is clear	4
5	Giving practice questions is sufficient	5
6	The test questions are in accordance with the standards and competencies	4
7	Easy to understand and apply to students	5
	Amount	28
	Average score	3,60

Table 2
Teaching materials Technology media-based materials to be developed in English subjects (aspects of content truth)

No	Rated aspect	Evaluation
1	The material presented is clear and precise	3
3	Giving samples regularly	3
3	Use of language that is easy to understand	4
4	The images that are displayed support the learning material that will be conveyed	4
5	Use of application media according to the material	5
6	Formulation of questions according to indicators	3
7	The level of learning materials is in accordance with the achievement of competency standards	4
	Amount	26
	Average score	3,33

Based on the assessment of the table above, it can be concluded that the acquisition of total scores on the development of learning methods through the use of technology based on Computer Assisted Instruction, especially in English subjects has a fairly high ratio, but with such an average score, it is necessary to re-test the all existing components, to suit the needs of students in understanding the various learning materials they want (Kartikasari, 2013).

The application of CAI has the advantage of widely available, fast, precise information, as well as the convenience of the learning process and technology support to facilitate the teaching and learning process. CAI also has the distinctive advantage that it is not limited by space and time. Information and communication technology is the study or use of electronic equipment, especially computers, to store, analyze and distribute any kind of information, including words, numbers, and pictures. Thus, CAI covers two aspects, namely information technology and communication technology. Information technology includes everything related to the process, use as a tool, manipulation, and management of information.

While communication technology is everything related to the use of tools to process and transfer data from one device to another. So information and communication technology contains a broad understanding, namely all activities related to processing, manipulating, managing, transferring information between media.

Computer Assisted Instruction (CAI) is a computer system that can deliver teaching directly to students by interacting with the subjects programmed into the system. The computer system presents a series of teaching programs to students in the form of information and practice questions. CAI generally refers to all educational software that is accessed via computers where students can interact quickly, precisely and efficiently. CAI is the use of computers as learning machines to present various kinds of lessons that have their own characteristics in an effort to achieve educational goals. CAI as a learning method that uses computers to teach students, where the computer contains teaching materials designed to teach, as a learning resource, and as a tool for evaluating student learning skills to the desired level of skills that should be mastered (Syakur et al., 2020; Sidiq et al., 2021).

After the CAI media was developed with an evaluation and revision process for students, the CAI media was tested formatively by conducting group tests and field trials, while the stages were testing the CAI media when used independently by students, while the group test was used by students in groups and field tests. conducted to measure the feasibility of CAI media products for English subjects. The purpose of this formative evaluation is to collect data to identify problems in learning, so that learning becomes better. In the field test, the researcher gave a pretest and posttest to students about the content of the CAI media program material. To see whether there is a significant difference in student learning outcomes before and after using the CAI media, a Statistical T Test was performed. So far, the teaching and learning process of English education is only done through lecture and discussion methods, while the use of computers is only used during the student presentation process.

For this reason, the presence of the CAI model is expected to make the learning process more different and attract a lot of interest from students. After analyzing and applying the pattern of Computer Assisted Instruction on English language material, namely, describing people, places, and things, which is a material that according to students is difficult to understand because the material is also studied grammar or grammar, some students think that they do not understand about the material and they feel bored with the methods that have been applied by teachers, especially in some English lessons, because the intermediary tool used is only a book, without being assisted by a media that will make students motivated to learn the material, and the teacher has never used other learning media that can stimulate students' ability to understand English subject matter. So based on the explanation, we can understand that it is necessary to develop learning interventions on learning media materials that can help students understand grammar, describe people, places and things (Juniarta, 2019; Syam & Achmad, 2022).

After the introduction to grammar learning materials, describing people, places and things, then the next, the teachers will carry out the design stage, which in the process includes the preparation of media program outlines, compiling material descriptions, making flowcharts, and making storyboards. The preparation of the GBPM is the process of identifying the learning program that will be outlined in the CAI media, after the GBPM is made the next step is to compile a description of the material (JM). These two processes were carried out by discussing with a team of teachers who teach English subjects in the high school environment of Subang Regency.

The next process, the teachers will make a flowchart where the flowchart is a stage that shows the flow in the program logically, especially on learning objectives. The process of making flowcharts begins with the preparation of material that must be adjusted, because the material will be displayed on CAI media. The material will be reviewed by an English teacher who understands and is competent in its entirety, especially in delivering English teaching materials. After the flowchart is completed, the next step is to make a storyboard. Here the researcher will divide into several slides and material, each slide is further divided into audio and visual. In the audio section, it is divided into audio text and audio for background and material which will be displayed via audio. In the visual section consists of navigation text and illustrations. In the text section is the material that will be presented in the form of text. In the navigation section are the buttons that appear on the slide as well as additional information about these buttons. The illustration section covers images and motion graphics to help explain the material that will appear on each slide (Mardika, 2008).

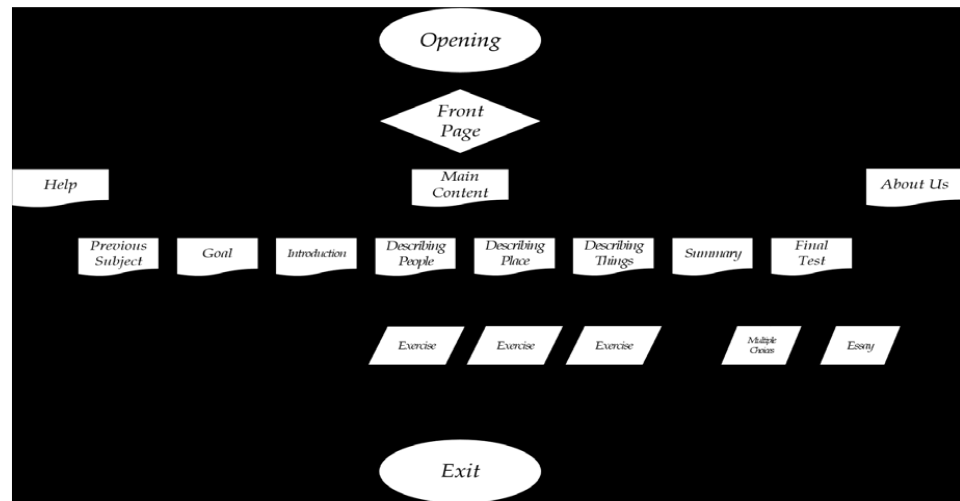


Fig 1. Flow Chart of CAI Media to be Developed

Based on the evaluation results from several stages that have been applied during the learning process using the Computer Assisted Instruction method, it can be concluded that, to determine the feasibility of CAI media products, it must be measured first through five important aspects, namely, content aspects, learning design aspects, aspects of instructions and use, aspects of display of material content and aspects of images and music, while the results obtained are 50 percent, it means that the CAI media is in a very good category, in accordance with the expected analysis results, learning media using computers (CAI) which was developed among Subang High School students has met the criteria for proper use in the learning process. However, to determine the effectiveness of the media, before being given this CAI model, students were first given a pre-test to determine the level of material achievement for students based on the learning objectives that had been formulated in the design phase.

After using CAI media in the computer laboratory, students were given a post-test. So, based on the data of student learning outcomes, the percentage of completeness of student learning outcomes after using CAI media is 90%, where 18 students meet the KKM out of 19, compared to the results of the pretest where only 3 people meet the KKM. When viewed from the average, it can be seen that the average pretest score is 56, while the posttest average value is 77.2, so it can be concluded that CAI media is proven to be effective as a learning medium that can improve student learning outcomes. To find out whether there is a significant difference in increase (Susanti et al., 2020; Maulida, 2020).

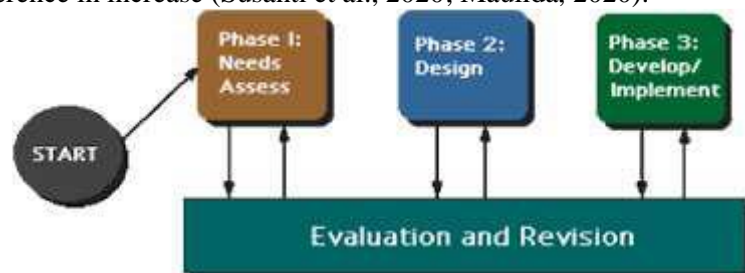


Fig 2. Stages of learning Computer Assisted Instruction

The name of the product from the results of this study is CAI (Computer Assisted Instruction) learning media in English subjects. In this media there are three scopes of material studied, namely material about describing people, describing places and describing things. The supporting factors in the use of computer-based learning media (CAI) in English subjects are the initiative and awareness of English subject teachers to use CAI media, so that a more conducive, varied and optimal learning atmosphere occurs from the aspect of achieving learning objectives. While the inhibiting factors in the use of CAI media are the high cost of procurement and maintenance of computer-based media (Firdania et al., 2016).

The advantage of applying CAI media in a lesson is to enable the delivery of material to be more interesting. Simplify and streamline learning time because students can better understand the material with the help of the media. Meanwhile, the weakness of using CAI media in learning is that there is a lot of time to

prepare, create, and develop media and the quality of human resources must understand the operation of computer technology as a whole. The function of Computer Assisted Instruction in the learning process has three main interrelated functions including the use of technology to function as a tool (tools), to assist the learning process, for example in processing words and numbers, then the role of technology also functions as science and the last is technology. serves as a material and a tool in the teaching and learning process.

4. Conclusions

Based on the results of the implementation of the development of English teaching materials based on Computer Assisted Instruction media on the material, describing people, places, and things, in the high school environment of Subang Regency, getting several important points including the limitations of teachers in developing learning methods, especially in subjects English, makes the atmosphere in the classroom less conducive and seems boring, for that the development of CAI media carried out at Subang High School for English subjects is considered suitable for use in teaching and learning activities. The results of the analysis of student learning outcomes showed a significant difference from the results of the pretest and posttest students. As for some of the indicators, it can be determined through the habits of the students in doing practical assignments, because they are supported by several intermediary media such as computers, then learning using the Computer Assisted Instruction method can be made more interesting, for example by bringing up audio visuals so that students are more enthusiastic to follow the process. learning. Therefore, it can be concluded that the application of CAI media to learning English subjects is proven to be effective in improving student learning outcomes.

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