

Usability Measurement: Chatbot as a Pedagogical Support for Learning French Grammar

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ABSTRACT

The use of technology media in the field of education is increasingly popular. Along with the needs of learning media that do not depend on space and time, the use of artificial intelligence is expected to be a support for language learning as well. This study discusses the use of artificial intelligence based on Chatbot and named ChatJours which is used as a media to support learning in French through telegram media. This research used a quantitative method and data were collected using a questionnaire containing questions about the usability system (SUS). In this study the aim is to see how useful this Chatbot technology media is as a pedagogical support. The results of the study, which were assessed using a Likert scale, showed that from the questionnaire filled in by the respondents, the overall score was 76%, which indicates that the Chatbot media is suitable to be used as a supporting medium for learning French grammar.

Keywords: Artificial intelligence, chatbot, scale of usability system (SUS).

1. INTRODUCTION

Information and communication technology is not only used by the business community or by state governments, but it is now widely used as a medium of learning like the use of business technology information and communication for education (TICE). Currently, many learning media are presented using various modern media such as the use of social media, videos, music and other media based on information and communication technology (TIC).

Learning materials have been developed to facilitate teachers and learners in the teaching and learning process. The presence of this medium certainly plays a very dominant role, especially in conditions that do not allow face-to-face contact, such as during a pandemic.

On the other side, the presence of technology does not work perfectly. This is due to the severe lack of facilities they have. For example, students who do not have a good Internet connection are due to economic problems and the location of the house which is difficult to reach through the Internet.

The development of technological innovations is always developed and improved every day. The existence of this development aims to improve the previous learning materials so that they become an appropriate support.

Artificial intelligence is used to understand and provide solutions to problems faster and more efficiently. Artificial intelligence is present and capable of providing a new learning space, if it generally only uses videos, presentations, smartphone applications or multimedia applications based on flashes, here the AI can run all these media. with one touch, because the AI is able to connect to various other media.

So, we really want to create a simple Chatbot based learning medium on Telegram is one of the biggest communication mediums used by all the people in the world so it will be easier to access without taking a lot of time. The application we are going to make is called ChatJours. In this app, you will use chatbot media to present any information about French grammar. Why we choose grammar in the Chatbot, because grammar is an important component of language learning.

Although there is a lot of access to learning grammar on the internet, accessing it requires a lot of time to visit from one website to another, using Chatbot, users can easily select grammar material that they want to learn with one touch and can choose a practice room to practice their language skills.

2. LITERATURE REVIEW

2.1. ICT

Information and communication technologies (ICT) offer many advantages in various fields. ICTs are also very important in the field of education which can improve the quality of resources so that the well-being of the country also develops. Information technology is a knowledge that includes various things, such as: computer hardware and software systems, LAN (Local Area Network), MAN (Metropolitan Area Network (metropolitan area,)), WAN (Wide Area Network) and Management Information System, (Anshori, 2018).

The use of ICT has started to be used by various government sectors, including one in education. According to Collis in (Castillo, 2009), he stated that “new opportunities are appearing, the integration of new educational and technological resources making it possible to increase the flexibility of learning, to improve communication between teachers and students. and to strengthen interaction between teachers”. The purpose of the above explanation can be concluded that with the advancement of technology, it is possible to make teachers more active and creative in creating learning materials, so that the ability to provide learning materials is a little more diverse and the communication between teachers and students can run smoothly.

TICE (Information and Communication Technologies for teaching) TICE (Information and Communication Technologies for Education Tools) is a comprehensive and well-categorized database offering descriptions of digital software and hardware tools for general education, where the function of TICE is to play a role in the preparation of teaching and learning materials in the world of education. The same is true in the world of FLE learning, according to Sansberro and Veronica (2017), “...New technologies make it possible to enrich teaching-learning and also to carry out authentic practices by adapting pedagogical activities to their use. ...”. Based on the above theory, it can be concluded that the role of ICT here will make it easier for teachers to create learning material to accelerate students' understanding in understanding learning material.

Artificial intelligence (robotics) has the ability to mimic human intelligence, perform various tasks that require thinking and learning, solve problems, and make various decisions. Software or artificial intelligence programs that are inserted into robots, computers or other related systems that they need a thinking ability. Shabbir and Anwer (2018), claim that artificial intelligence (AI) tools with the capacity to process huge amounts of data by computers can give those who control them and analyze all the information.

Artificial intelligence is a field of computing that specifically aims to create software and hardware capable of fully mimicking some of the functions of the human brain or the branch of computing that studies the automation of intelligent behavior, (Amrizal & Aini).

There are several types of artificial intelligence, according to Vijayakumar and Sheshardi (2015), artificial intelligence is divided into robotic intelligence (robotics), computer vision, natural language processing, pattern recognition, speech recognition, and expert systems.

2.2. Chatbot

Chatbots are a popular new technology with unprecedented business potential, galvanized by artificial intelligence (AI) and machine learning. Essentially, chatbots are computer programs that simulate human conversations via voice commands or text chats and serve as virtual assistants to users. (Leviathan & Mathias in Luo, Tong, Fang & Qu, 2019). Dahiya (2015) in her diary so the headline is "A Tool of Conversation: Chatbot" adds that a chatbot refers to a chat bot. It is a computer communication program. It's all about conversation with the user and conversation with a chatbot is very easy. It answers questions asked by the user.

Usually only with the chatbot (the virtual robot / figure) in artificial intelligence or AI having the ability to mimic human conversations as if you were chatting in voice with people. The AI capability that gives chatbots virtual intelligence allows them to judge the most appropriate answers to questions put to them.

In chatbots, there is a separate section that manages the transfer and understanding of messages between the human user and the artificial intelligence system, another section that stores key points useful during the chat that may be needed later, another department that handles the errors and so on.

Ultimately, the chatbot is implemented using pattern comparison, in which the sentence order is recognized, and a saved response pattern is acclimatized to the exclusive variables of the sentence. They cannot register and answer complex questions and are unable to perform compound activities

2.3. Chatbot Pedagogic Support

In the process of teaching and learning, a learning medium is needed which can support the process well. The use of appropriate learning aids should also be adapted to the appropriate learning method. We can say that one of the main functions of educational media is as an educational tool that influences the climate, conditions and learning environment that are organized and created by teachers (Arsyad, 2013). According to

Lebrun and Berthelot (1994) in (Rocheleau, 2008) assert that “the learning medium works together to support information e.g. in the service of a specific educational intention such as the computer, the videodisk, the printed matter”, From the above theory, it can be concluded that learning materials are means of information that can be used by teachers and students using various types of learning materials that can be used, such as computer or printed media.

3. METHOD

Based on the introduction, this research will make a product from the research results so that the necessary research method is to use the Recherche and Development (R & D) research method. Research for development is research used to make a product and test its effectiveness, Research and experimental development (R&D) encompasses the creative work undertaken in a systematic way with a view to experimenting with the sum of knowledge, including knowledge of man, of culture of society, so use this amount of knowledge for new applications.

On the other hand, this R&D research requires several steps as a product manufacturing process. According to Quivy and Van Campenhoudt (1995) in Guichon (2003), divides the stages of R&D research into 7 stages, such as starting question, exploration, problematization, construction of the scenario, intermediate evaluation, verification of hypotheses and the last is finalization of realization.

The product of this research will come in the form of artificial intelligence media, namely Chatbots, robot servers which are used to create new and innovative learning media and are easy to use as they are accessible on the web. social media, namely Telegram. In the Chatbot, there will be 4 rooms, such as gramamire room, exercise room, teachers' room and student room.

The assessment criteria used are 5 points for totally agree, 4 for agree, 3 for doubtful, 2 for disagreement and 1 for not agree at all. The results of this product have yet to go through the testing process step to assess the effectiveness of its use in helping learners understand French grammar.

We will produce learning materials with French grammar material that can be used by all levels. We will create the support media in the form of a chatbot through the Telegram chat platform, with the name ChatJours without spaces, comes from the words Chat and Days which means daily chat which the user can access anywhere and anytime.

For product testing, we will perform testing based on ISO / IEC 25010 standards, namely functional suitability, reliability, performance efficiency,

portability, usability and maintainability (Muhyidin, 2019).

3.1. Research Variables

In this study, we use two variables, namely the independent variable or variable X (independent variable) and the dependent variable or variable Y (dependent variable). This can be explained as follows:

Variable X: Learn French grammar using Chatbot media on Telegram.

Variable Y: Results of learning French grammar in using chatbot on telegram media.

3.2. Population and sample

In this research, we decided that the population came from all characteristics of general grammar learning among FFL learners at Universitas Pendidikan Indonesia.

3.3. Data collection technique

Some of the steps taken to collect data in accordance with the purposes are determining the population and the research sample, consulting with the grammar teacher who will be invincible with the material to be published in the application, preparing two books on the grammar method that will be research material, designing and compilation of grammatical material that will be published in the application, making the chatbot and compiling all the material that has been prepared, preparing the research instruments, consulting the research advisor, and determining the exact date of the experiments using chatbot application for students

3.4. Research Instruments

3.4.1. The Bibliographic Study

In this research, literature review techniques are used to collect data, sort and select data according to the formulation of the problem in this study. Thus, researchers collect data and then study books or other reading sources, namely sources relevant to this research, namely on French grammar.

3.4.2. Questionnaire

The questionnaire itself is a form of flexible data collection instrument. A questionnaire is a number of written questions that are used to get information from a respondent in the sense of their personal report, or what the respondent knows, (Arikunto, 2010).

In this study, we used a questionnaire to collect data on the results of the system feasibility test from the

criteria according to ISO / IEC 25010 to assess the quality of the software.

3.4.3. Measuring scale

After obtaining the results of the distributed questionnaire, the measuring instrument used to measure the results of the respondent's completion of the questionnaire uses a numeric scale. Responses to each instrument that uses a numeric scale have a rating in the form of words and receive a score for the answer. The following assessment measures identified in this study.

From the above evaluation metrics, it will be entered into a percentage, where the maximum score for each questionnaire is 5 and the minimum score is 1, or ranges from 20% to 100%, then the distance between adjacent scores of 16%, (Sugiyono, 2019). Percentage values can be seen in Table 1.

The value of the score interpretation can be obtained from the score value based on the responses of the respondents through a questionnaire that was distributed.

3.4.4. Usability instrument

The usability finding aid will use the SUS questionnaire. The System Usage Scale (SUS) is a questionnaire that can be used to measure the usability of a computer system from the subjective point of view of the user. By performing SUS calculations using a 5-point Likert scale. Respondents were asked to provide an assessment of the 10 elements of the SUS statement based on their subjective assessment. The SUS questionnaire can also be used to measure the level of user satisfaction with a product (Brooke, 2013). The SUS questionnaire uses a 5-point Likert scale. Respondents were asked to provide a rating of "Strongly disagree".

Table 1. Percentage values

Results	Category
0-20%	Very insufficient
21-40%	Insufficient
41%-60%	Enough
61%-80%	Very good
81%-100%	Excellent

4. RESULTS AND DISCUSSION

After preparing several appropriate research instruments to be used in research, several survey results were produced regarding the use of Chatbot. Through a questionnaire containing 10 questions about the usability of the Chatbot. The questionnaire has been filled out by 22 students majoring in French, with

varying answers. All the answers from the respondents will be added up and then the final total value is sought to assess the usefulness of this Chabot. In the first question about whether I will use this application, many respondents answered Totally Agree, namely 10 people, then 11 people chose Agree, 1 person chose Doubtful. In the second question which states that this application is very difficult to use, 4 people answered doubtful, 5 people chose to disagree, 10 people chose not to agree at all, and 3 people chose to agree.

In the third question, all functions in the application are very easy to access and use, 9 people chose Agree and 13 people chose totally to agree. In the fourth question about using this application, it requires a technician to use it, 6 people chose doubtful 10 people chose not to agree at all, 2 people chose to agree, and 4 people chose disagreement.

In the fifth question about all applications and systems in the application that have been packaged well, 15 people answered Agree, 6 people answered totally agree, and 1 person answered doubtful. Then on the sixth question with questions about many things that are inconsistent in this application, 6 people answered doubtful, 9 people answered disagree, 5 people answered not agree at all, 2 people answered agree.

In the seventh question, about users who will quickly be able to use this application, 7 people choose to agree, 4 people choose doubtful, 11 people choose not to agree at all, and the eighth question about this application, which is too heavy to use, 8 people chose to disagree, 5 people chose doubtful, 6 people chose not to agree at all, 3 people chose agree.

The ninth question about this application, which is very helpful in learning French grammar, 5 people chose totally to agree and 17 people chose to agree. The last question is the tenth question, that users must first learn about this application before using it, 9 people chose doubtful, 1 person chose to disagree, 5 people chose not to agree at all, 4 people chose Agree, 3 people chose totally to agree.

The results of all respondents' answers are then added up and multiplied by 2.5 to get the results of the assessment, with a final score of 1672.5. The final value is then divided by the total number of respondents, which is 22 so that:

$$167,25:22 = 760227272 (76), 76\%.$$

Based on the results of the questionnaire this app is feasible to use as it reaches 76% is on very good scale.

4. CONCLUSION

Based on the results of the research, it can be concluded that in the research titled Usability Measurement: Chatbot As A Pedagogical Support For Learning French Grammar, a chatbot app was created

under the name ChatJours via Telegram social media, equipped with 17 features, and equipped with 4 main menus, namely the grammar learning material room, the teacher's room, which students use to contact the teacher directly, then equipped with a practice room, which is connected directly via google form, which can be accessed by students to practice after studying grammar, and the last , equipped with a student room, where students in the same subject can communicate directly with each other who will be connected via WhatsApp group. which is all neatly made to help students learn French grammar, and then which is made using research and development research methods, then its usefulness is measured using ISO usability theory on application testing which shows good results with the research results from the distribution of the questionnaires were completed by 22 respondents, with a total of 10 questions which questions are made using SUS theory, and are calculated based on the SUS scale with 76% of results, indicating that there are at the level Very good to be used as learning aids.

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