Development of a Website-Based Pancasila Student Profile Detection Application Using the Forward Chaining Method as an Alternative to Civic Education Learning Assessment

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Abstract. This research focuses on developing a website-based application called the Pancasila student profile detection website using the forward chaining method, which is designed to provide an alternative PPKn learning assessment for one of the CPMK requirements for evaluating PPKn learning outcomes for the FIS UNIMED PPKn major. The research location is in the PPKn Department, Faculty of Social Sciences, Medan State University, with a research sample of students from the PPKn FIS UNIMED Department in the class of 2023. The research method used is the development research method with the ADDIE model. Data collection tools include observation, questionnaires, and test techniques. Data analysis uses several types, ranging from Likert scale measurement scales to Guttman scales, and also using Miles and Hubermann data analysis to analyze observation data. The orientation of the results will be focused on the benefits of developing and implementing a website-based Pancasila student profile detection application to help improve students' technological skills or technological literacy so that they have alternative civics learning assessments, especially digital-based, high-quality, and interesting Pancasila student profile assessments that they can later use. take advantage of when they have taught in the field or at school.

Keywords: *Pancasila Student Profile, Assessment, and Website Application.*

1 Introduction

Globalization and social media have really provided major changes to the current educational paradigm, which has opened up space for uncertainty, complexity, and ambiguity. Which has an impact on the emergence of a big challenge for the world of education, namely the problem of character, an educational problem that has received the most attention globally. Whatever issues we discuss in this world, they will always be related to a person's character. "At the core

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of any response to the global challenges that face us is the question of a person's character" (Conrad, 2022)[4], and the education sector also has the same problem or challenge, namely the question of character. Alex Agboola and Kaun Chen Tsai say that a child's future is determined by the character embedded within him (Agboola & Tsai, 2012)[1]. That is how big the influence of character is in the world of education. If character is not educated and developed properly and correctly, it will have an impact on the child's future.Indonesia, of course, also felt a significant impact, as explained above. Character issues are also the center of attention in education in Indonesia. Bullying, Cyberbullying, Plagiarism, Gadget Addiction, FoMo Syndrome, Social Media Anxiety Disorder, Gaming Disorder, Narcissistic Personality Disorder, Depression, Promiscuity, Sponge Citizen, and others are a number of big problems that are based on the problem of a person's bad character. currently happening in Indonesia. The character of the Indonesian nation originates or is rooted in Pancasila, so the character problems that occur are strong evidence that there is still a need to develop and detect the Pancasila character of students in Indonesia.The Pancasila character development program is currently in full swing through the project program to strengthen the profile of Pancasila students, which is being launched in schools starting from the early childhood education unit level, elementary school to middle school (Educational Standards, Curriculum, and Assessment Agency, 2022) [5]. With six main characteristics, namely belief in the Almighty God and noble character, global diversity, mutual cooperation, independence, critical reasoning, and creativity (Sulastri, Syahril, Adi, & Ermita, 2022)[10]. These six traits or characteristics need to be reflected in social, national, and state life and are in sync and in harmony with the meanings of each of the Pancasila principles by upholding the principle of unity and continuity between one principle and another.If we review and analyze the guideline document for developing and strengthening the profile of Pancasila students prepared by the development team from the Educational Standards, Curriculum, and Assessment Agency of the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, theoretically-pedagogically, the guideline is very good based on the conceptualization of theoretical studies, planning program implementation, as well as up to the evaluation stage.However, if explored and analyzed explicitly, especially in the evaluation section, there is no specific innovative Pancasila student profile evaluation method. The method used still utilizes methods such as portfolios and journals, where the assessment is done with rubrics. This rubric still seems ordinary and less attractive because the form is still printed or traditional and the form is still filled in exclusively by the teacher, thereby reducing the quality of the transparency of the assessment process, the validity of the assessment, and the objectivity of the Pancasila student profile assessment that is prepared and implemented. There needs to be an innovative assessment of the Pancasila student profile program to create an attractive Pancasila student profile assessment method that is transparent in the assessment process, from testing to the final score, and valid and objective. For this reason, the use of technology is an inevitability that is urgently needed to respond to the problem of the lack of innovativeness of the current Panacasila student profile assessment method.The use of technology really helps the assessment process carried out by teachers to see the progress of student competencies, identify gaps in student knowledge, and support further or in-depth

learning (Promethean, 2020)[7]. Technology can also help learning assessments become more efficient (Behera, 2021)[3]. Technology also really supports the assessment process, which focuses on educators' efforts to diagnose the progress of students' knowledge, attitudes, and skills (Awang, 2021) [2]. The benefits and advantages of this technology are very suitable to be used as a basis for developing an innovative Pancasila student profile assessment method.

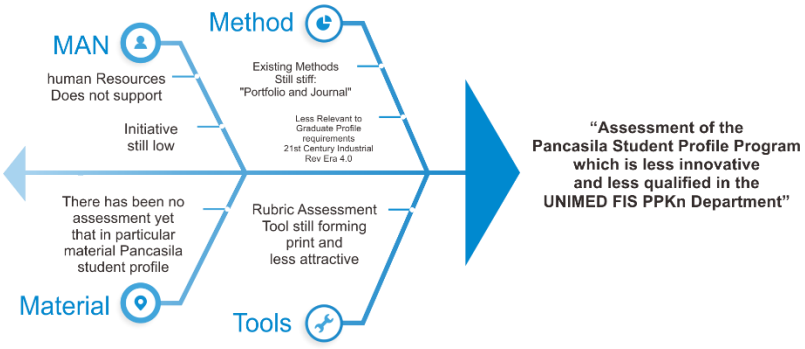

Figure 1. Fishbone Identification of Problems at the Research Location

Based on the fishbone diagram above, the problem of lack of innovation and initiative to develop a Pancasila student profile assessment also occurs in the Pancasila and Citizenship Education department, Faculty of Social Sciences, Medan State University (hereinafter PPKn FIS UNIMED). The results of the fishbone identification in the picture above are data that was identified, reduced, analyzed, and concluded from the results of initial observations carried out by the research team at the research location on January 3, 2023, with the sample being FIS UNIMED PPKn students from the class of 2021.Not only theoretically but practically, the Pancasila student profile assessment method taught in the PPKn department through various relevant courses is still considered to have many shortcomings according to the results of responses to initial observations by students of the PPKn FIS UNIMED department. These deficiencies are divided into at least 4 aspects, including the MAN or human aspect, where the results of observations show that the average sample believes that they have not been taught well to be able to develop a quality Pancasila learning profile assessment, so this indicates that human resources cannot support it in This means that students will have difficulty developing a Pancasila student profile assessment in the future after becoming teachers. This can also result in decreased initiative because the quality of human resources does not support it.Then there is the method aspect, where the sample considers that the method for developing the Pancasila student profile assessment that they study in various relevant courses still uses rigid methods such as portfolios and journals. This method is rigid because when students fill out their portfolios, they only answer what has been stated in the portfolio without any variation in the assessment filling activities, thereby reducing the attractiveness value. It can also trigger invalidity between what is filled in and the results they will later receive because the results are different. They don't get it right away. Portfolio and journal methods can also have a negative impact on the synergy between university strategies and market needs. In the era of the Industrial Revolution 4.0 and above, the profiles of graduate students majoring in PPKn

FIS UNIMED must be adept at using technology in developing PPKn learning assessments, and one of them is a digital-based Pancasila student profile assessment, which they can later apply when teaching at a school.Furthermore, there is the material aspect, where not all Pancasila student profile targets are integrated into assessments such as portfolios or journals. This is due to the availability of portfolios and their development, which will be very difficult if all six Pancasila student profile targets can be integrated into the assessment. Students have difficulty in this matter, so existing assessments become less credible.Then there is the tools aspect. In this aspect, the weakness of learning about the Pancasila learning profile assessment that can be developed by students majoring in PPKn FIS UNIMED lies in the assessment tools used, which are still printed and less attractive, namely rubrics. Rubrics are certainly a fairly good type of assessment tool, but it does not rule out the possibility that this assessment tool can reduce students' interest and motivation to complete the assessments given by the teacher. The reason is once again that rubrics are a type of assessment tool that is still in printed form.From all aspects of the weakness of the Pancasila student profile assessment as explained above, both from the human aspect, method aspect, material aspect, and tools aspect, it shows that there is still a need for alternative solutions that can provide progressive education and training to students, so that their skills in developing or implementing an assessment of the profile of Pancasila students who are attractive and of good quality by utilizing technology can be developed and later they can use and benefit from it in the workplace or at school.If the assessment of the Pancasila learning profile is still indicated by weaknesses, as explained above, this will have a negative impact on the quality of evaluation in civics learning in schools. Students majoring in PPKn FIS UNIMED will face big challenges when they become teachers, where they will face the problem of declining student learning outcomes, especially the poor profile of Pancasila students due to the assessment of Pancasila student profiles, which is still not high quality and not attractive.

Students in the PPKn department at FIS UNIMED are prospective graduates who will later be targeted to have a graduate profile to become teachers in the field of PPKn. This means that their knowledge and skills in providing good-quality civics learning have been forged since they were in college. One of the qualities that is very necessary is the quality of developing good civics learning evaluations. The evaluation of PPKn learning referred to here is related to the evaluation of Pancasila student profiles. Students must develop the quality of their knowledge and skills in developing a high-quality and interesting evaluation of the Pancasila learning profile. One of the Pancasila student profile evaluation skills that they must be able to develop so that it has good quality and is attractive is their ability to develop an assessment of the Pancasila learning profile.If during their studies they are not provided with learning how to develop quality and interesting Pancasila learning profile assessments, then this will have a negative impact when they become teachers. They are, of course, responsible for designing and developing a quality and attractive assessment of Pancasila student profiles at school.On the basis of all the problems and explanations above, in this research there are at least 2 problem formulations that will be observed, namely, first, how to design a relevant website-based Pancasila student profile detection application based on the assessment or evaluation of

current Pancasila student profiles; and second, how the performance process of the website-based Pancasila student profile detection application using the forward chaining method can diagnose students' Pancasila student profiles.Therefore, in this research, efforts were made to develop an attractive and high-quality Pancasila student profile assessment, utilizing sophisticated technology, namely by developing a website-based Pancasila student profile application using the forward chaining method. This application was prepared to help students as well as train students' skills to be able to develop and use an interesting and high-quality Pancasila student profile assessment that utilizes advanced technology so that they can later use and utilize it when they become teachers at school. The development of this website-based Pancasila student profile assessment method is planned to be taught to students of the 2021 class of PPKn FIS UNIMED and will specifically be integrated into one of the subject learning outcomes (CPMK) of the PPKn learning outcomes evaluation course.The contribution of the solutions offered in this research is certainly very good and useful. Globally, this research has had a very positive impact on efforts to realize SDG point 4, namely good quality education. On a national scale, it can help realize the commitment of the government of the Unitary State of the Republic of Indonesia through the Ministry of Education and Culture, which is strongly committed to advancing Indonesia through realizing and empowering the Pancasila student profile. For UNIMED and especially the PPKn department, of course, this is a form of participation from department agencies to make UNIMED's IKU a success in point 3, namely regarding the quality of the curriculum and learning in the UNIMED environment through developing interesting and high-quality Pancasila student profile assessments using the website.

2 Method

This research focuses on the development and implementation of a website application for detecting Pancasila student profiles using the forward chaining method. In this way, the research method used in this research is the development research model, namely Analyze Design, Development, Implementation, and Evaluation (ADDIE), to "see the extent of the development of the usefulness of applications designed as learning tools" (Purnamasari, 2019)[8].

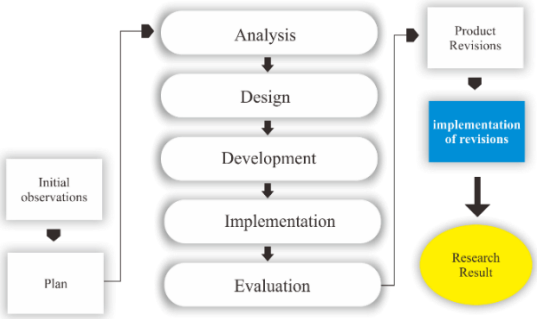

Figure 2. Research design flow chart.

The ADDIE model is a method used to analyze the development of an application, called the analysis process, observing the application design, which is called the design process, the form of application development, which is called the development process, the impact or results of application implementation, which is called implementation, as well as an assessment of the functionality of the application, which is called evaluation. The approach to this research is a quantitative approach with the ADDIE model design.

This research was carried out in the PPKn department, Faculty of Social Sciences, Medan State University. This location was chosen as the initial space, and the readiness of the technology design was tested for the level of success in developing the Pancasila student profile detection website application as an alternative for PPKn learning assessment in schools. The population in this study were all students in the FIS UNIMED environment. And the sample that will be used will be in semester 1 of the class of 2023 in the PPKn department.This sample was generated through a purposive sampling technique. According to Sugiyono (Mukhsin, Mappigau, & Nixia, 2017)[6], purposive sampling is a sampling technique that involves determining certain criteria. This technique was chosen because the researcher needs to directly determine which samples are needed or which sample criteria are needed for sampling so that the desired data can be more easily obtained according to needs.The data collection tools used in this research were observation and questionnaires.

The data analysis techniques used will be adjusted to the data required and the data collected. Firstly, for data from observations of expert responses, the data that needs to be analyzed is the validity of the Pancasila Student profile detection website application. Meanwhile, to measure the validity of the Pancasila Student profile detection website application as a stimulus to educate students in developing and utilizing quality and interesting alternative civics learning assessments, a Likert scale measurement scale is used. The categories used are on a Likert scale ranging from 1 to 5. For questionnaire data, student responses will be analyzed using the Guttman scale measurement scale. Besides being able to be made in multiple choice form, the Guttman scale can also be made in checklist form (Sugiyono, 2016)[9]. This research stage uses the ADDIE model design, so the research stages are as follows:This research stage uses the ADDIE model design, so the research stages are as follows:

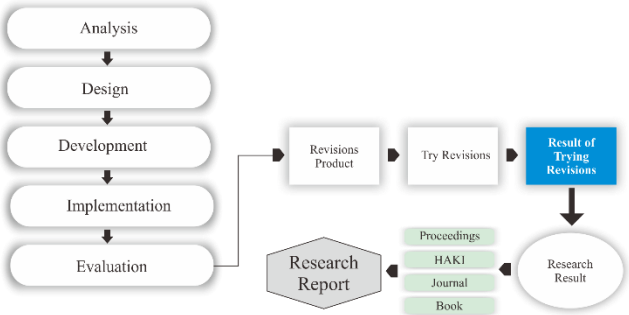

Figure 3. Flow of the ADDIE Model Research Stagesadapted from Purnamasari.

The stages in this research were designed and modified from the original source of the ADDIE method. In essence, this research seeks to test a product developed called the Pancasila Student profile detection website application using the forward chaining method.

3 Results and Discussion

This research was carried out at the beginning of September and sounds quite long based on the initial plan for the research to be carried out. However, the main reason is that this research was designed to produce a digital-based assessment product for Pancasila student profiles. Which was developed by utilizing something in fire called forward chaining.The initial stage carried out was to carry out a needs analysis for this research based on the problems that emerged, as explained in the background of the problem. Based on the analysis carried out, it was found that the assessment of Pancasila student profile innovation that was relevant to answering the problems in this research was a website-based assessment of Pancasila student profiles using an expertise method called forward chaining. This idea is also closely related to researchers' efforts to be able to answer the challenges of PPKN's objectives to be able to support the achievement of Medan State University's IKU to provide quality curriculum and quality learning through learning assessment innovation.Then, after carrying out the analysis, the research team designed a location for the website-based Pancasila learning profile assessment using the forward chaining method. This design assessment certainly requires a lot of time to carry out because there is a coding process as well as graphic design for the layout and other displays, so that the assessment application carried out has the best quality.After the design is prepared, choose to develop all the features needed in the Pancasila learning profile access application, and the application developed is named Pancasila student profile detection, or D3P. The application was also developed by looking at the proportion of substance, which must be in line with the conception of the material content of the Pancasila student profile, which is summarized into six elements: faith, devotion to God Almighty and noble character, independence, mutual cooperation, global diversity, critical reasoning, and creativity.Applications in D3P are developed using the PHP programming language and designed with a display that uses the CSS language. The PHP code editing process uses the Sublime Text application, while the display is designed using Corel Draw.The features contained in the d3p application include the login and register features for students to register and access the application; the workflow feature as a feature to help students understand how to utilize or use the d3p application; and the Pancasila student profile assessment process feature via The questions are asked as a form of inference component, which is the concept of the format method here, which later through these questions will produce indications by the user so that from these indications a conclusion can be drawn. What is the quality of their Pancasila student profile? There is also a resume feature or conclusion results. from the assessment process, and in it there is also a feature for printing results as well as sending the results to the admin to be used as an example of implementing documentation in the D3P application.

Before we discuss the results of implementing the application in 3P, Below, we will show several screenshots of the D3P application, and this application can also be accessed on the following page: *https://kewargaan.site.* Some of the screenshots can be seen in the image below:

Figure 4. D3P home page

Figure 5. D3P workflow page.

Figure 6. D3P question and answer session page.

The development of the d3p application also involves validation by experts, where in this research, when the validation process was carried out, data obtained from Likert scale scores showed that the d3p application was in the good feasibility category with a percentage figure reaching 82.66% based on data obtained from expert validation responses.

After obtaining expert validation results that show that the d3p application is suitable for implementation, the application is then implemented on students selected according to the sample, namely students from the class of 2023 majoring in PPKN, Faculty of Social Sciences, Medan State University. In the non-civil implementation process, through gate-scale data collection, data was obtained that students responded to the d3t application, which was a very good application for assessing their Pancasila learning profile. The data obtained shows that the results of the level of student satisfaction with the D3P application reached a presentation figure of 84%, which is included in the satisfied category. This category indicates that the application in d3p stimulates students' understanding that they have the potential of the six elements of the Pancasila student profile. They are aware that religious values exist within them and have implications in their daily lives, including the value of independence, the value of global diversity, the value of creativity, the value of critical reasoning, and the value of mutual cooperation. They were also very enthusiastic about the forward chaining method that was injected into the d3p application as a method of expertise, so they were stimulated with quite tricky questions because these questions would ultimately indicate the quality of the six elements of their Pancasila learning profile.The following example of the results of detecting a Pancasila student profile in one of the respondents can be seen in the image below:

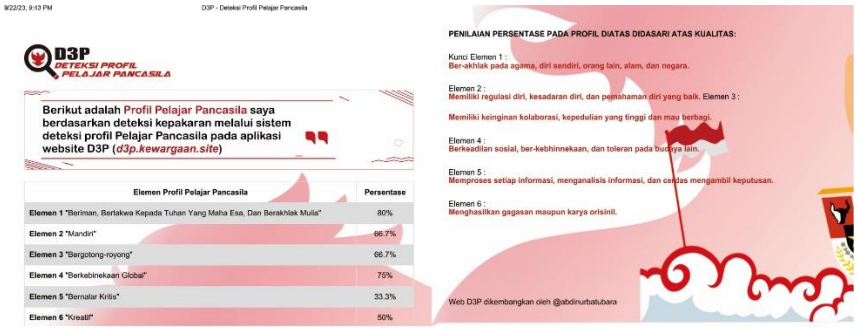

Figure 8. Page of detection results for one user.

Based on the picture above, you can see the presentation figures for the quality of the Pancasila family profile based on the six potential elements of their Pancasila learning profile. Through these results, they can self-evaluate how they continue to learn and want to continue to improve their Pancasila student profile.

4 Conclusion

The research uses the ADDIE product development method, which produces a website-based Pancasila student profile assessment application using the forward-chain expertise method. The research results show that students are satisfied with the application called D3P because, through the detection process of this application, students can understand how their Pancasila student profile is seen from the six elements of their Pancasila student profile.This research is

also very useful in supporting the achievement of Medan State University's IKU, which strives to produce good-quality curriculum and learning and is also related to SDgS point 4 regarding the quality of education. Thus, there are many contributions from this research.The advantage of the D3P application is the detection feature with the forward chaining method, which easily detects students' Pancasila student profiles based on roles that have been designed by the research team, referring to the indication of the six elements of the Pancasila student profile.Of course, there is still much more that can be developed in this application, and the developer will continue to adjust and perfect it according to the needs and targets planned for the future.

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