THE DESIGN OF THE SUTI (STUDENT PROJECTION) APPLICATION WITH THE PHP PROGRAM FOR EDUCATION PLANNING

aTia Ayu Ningrum, bSufyarma Marsidin, cHadiyanto

ABSTRACT

Objective: The research objective is to design a student projection application that is needed in educational planning.

Theoretical reference: Student projection is a process of predicting the number of students in the future which is necessary to make plans for the future.

Methods: The research methodology is to design the application using PHP (Hypertext Preprocessing) programme. After that, a trial was conducted to see the effectiveness of the application. The results were compared with data processing manually and through the application.

Results and Conclusion: The PHP application produces a student projection application in education planning called SUTI (Student Projection) application. This application can provide efficiency in the calculation process and also minimise errors or human error.

Research implications: Planning requires the prediction of future data. To get the future data, projections are made. With this projection application, it can help calculate data projections needed in education planning.

Originality/value: This SUTI application is a new thing that can help in the process of efficient calculation of data projections needed in education planning.

Keywords: education planning, student projection, PHP.

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O DESIGN DO APLICATIVO SUTI (PROJEÇÃO DO ALUNO) COM O PROGRAMA PHP PARA PLANEJAMENTO DA EDUCAÇÃO

a Doctoral candidate in Educational Administration, Universidad Negeri Padang, Padang, Indonesia. E-mail: tiaayuningrum@fip.ac.id Orcid: https://orcid.org/0000-0002-9378-4363
b Professor in Educational Administration, Universidad Negeri Padang, Padang, Indonesia. E-mail: hadiyanto@fip.ac.id Orcid: https://orcid.org/0000-0002-4312-7429
c Professor in Educational Administration, Universidad Negeri Padang, Padang, Indonesia. E-mail: sufyarma@fip.ac.id Orcid: https://orcid.org/0000-0001-6171-9666
RESUMO

Objetivo: O objetivo da pesquisa é projetar uma aplicação de projeção do aluno que seja necessária no planejamento educacional.

Referência teórica: A projeção estudantil é um processo de prever o número de alunos no futuro que é necessário para fazer planos para o futuro.

Métodos: A metodologia de pesquisa é projetar a aplicação usando o programa PHP (Hypertext Preprocessing). Depois disso, foi realizado um ensaio para verificar a eficácia do pedido. Os resultados foram comparados com o processamento de dados manualmente e por meio do aplicativo.

Resultados e Conclusão: O aplicativo PHP produz um aplicativo de projeção do aluno no planejamento da educação chamado SUTI (Student Projection). Esta aplicação pode fornecer eficiência no processo de cálculo e também minimizar erros ou erro humano.

Implicações da pesquisa: o planejamento requer a previsão de dados futuros. Para obter os dados futuros, são feitas projeções. Com esse aplicativo de projeção, ele pode ajudar a calcular projeções de dados necessárias no planejamento da educação.

Originalidade/valor: Este aplicativo SUTI é uma coisa nova que pode ajudar no processo de cálculo eficiente de projeções de dados necessários no planejamento educacional.

Palavras-chave: planejamento educacional, projeção estudantil, PHP.

EL DISEÑO DE LA APLICACIÓN SUTI (PROYECCIÓN DEL ESTUDIANTE) CON EL PROGRAMA PHP PARA LA PLANIFICACIÓN DE LA EDUCACIÓN

RESUMEN

Objetivo: El objetivo de la investigación es diseñar una aplicación de proyección estudiantil que sea necesaria en la planificación educativa.

Referencia teórica: La proyección del estudiante es un proceso de predecir el número de estudiantes en el futuro que es necesario para hacer planes para el futuro.

Métodos: La metodología de investigación es diseñar la aplicación utilizando el programa PHP (Hypertext Preprocessing). Después de eso, se llevó a cabo un ensayo para ver la efectividad de la solicitud. Los resultados se compararon con el procesamiento de datos de forma manual y a través de la aplicación.

Resultados y Conclusión: La aplicación PHP produce una aplicación de proyección estudiantil en la planificación de la educación llamada aplicación SUTI (Proyección Estudiantil). Esta aplicación puede proporcionar eficiencia en el proceso de cálculo y también minimizar los errores o errores humanos.

Implicaciones de la investigación: La planificación requiere la predicción de datos futuros. Para obtener los datos futuros, se hacen proyecciones. Con esta aplicación de proyección, puede ayudar a calcular las proyecciones de datos necesarias en la planificación de la educación.

Originalidad/valor: Esta aplicación SUTI es una novedad que puede ayudar en el proceso de cálculo eficiente de las proyecciones de datos necesarias en la planificación de la educación.

Palabras clave: planificación educativa, proyección estudiantil, PHP.
1 INTRODUCTION

Educational planning occupies a strategic position in the entire educational process. Planning provides clarity of direction in the process of organizing education so that the management of educational institutions will be carried out more effectively and efficiently. Planning determines the future of the development of the education system (Bosche, 2015). As stated (M. Bukhari, n.d.; Matin, 2013; Muhammad, 2017; Terry, 2005), educational planning is very important in the management and development of education.

However, there are many problems and challenges that must be resolved and resolved with this education planning. The problems that must be resolved in relation to education are uneven education, uneven facilities and infrastructure (Adit, 2020; Bakri, 2018; Cahyadi, 2020; Dinilhaq, 2021; Djundjunan, 2019; Pratama, 2019; Zubaidah, 2020). The problem of dropping out of school still occurs in many countries including Indonesia. (Muro et al., 2023) said that dropping out of school is a phenomenon that can hinder development. Meanwhile, in other countries such as England, infrastructure has been the most important project in planning since 2008 (Ireland et al., 2016). And providing equal education is the goal of all countries in the world (Shulla et al., 2020). For this reason, it is necessary to carry out a planning process in order to produce an effective plan to be able to solve these problems.

Planning is the ability to shape the future-oriented human environment (Knutsson & Lindberg, 2012; Laak, 2010). The planning process requires not only data about the present situation but also data about the past and the future (Afifuddin, 2011; Anisah, 2011; Matin, 2013). Planning is done to estimate future human resource needs (D. Ramarao, Rashmi Agrawal, B.V.L.N. Rao, and S.K. Nanda, 2014). Likewise, education planning needs to consider the number of students in the future in order to plan the number of study groups, classes, teachers, and schools for the future.

The government should be responsible for planning to solve the problem of equitable distribution of schooling opportunities. The government must analyse the current state of education in planning (Guerrero, A., Rodríguez, J., Cabeza, M. y Moreno, 2020), whether the capacity of each region is sufficient. The government must provide sufficient capacity at least according to the number of school-age children in each region. This is to provide equal opportunities for all children in each region to attend school. The
government needs to conduct a needs analysis by predicting future needs by projecting the number of students who will attend school, capacity, number of classes, schools and others. The government as a stakeholder is required to manage sustainable development. According to regional education governance has a significant effect on sustainable development (Albornoz et al., 2023). Therefore, it is necessary to analyse the projected demand to make future plans for each region.

In the case of Indonesia, the process of projection calculation still uses conventional methods by manual calculation. The projection process carried out manually takes a long time and has a high chance of human error or miscalculation. Then based on the results of preliminary observations in one of the districts in Indonesia, namely the south coastal district, where the planning process has not yet used projection data so that there are still several kecamatan that have less capacity than the number of school-age residents.

The solution offered is that projection activities should be integrated with technology. This is so that projection calculations can be done effectively and efficiently. The form of integrating technology for projection calculations is the development of digital applications. With this application will produce more accurate calculations and reduce human error.

Accurate data will be the basis for planning the needs of the number of students in the future so that it can also determine the needs of the number of teachers, rooms, principals, and schools in the future. So that the problem of equal distribution of education, such as equal distribution of classrooms, teachers, and schools, can be overcome with the plans that will be made, the government has a legitimate role in influencing development and growth (Airey & Doughty, 2020).

For this reason, technology is needed that can facilitate the process. Utilising technology in planning can facilitate planning activities (Wardiana, 2002). So that it can overcome human slowness in processing information (Triyono & Febriani, 2018; Zamudio et al., 2023). The development of technology and information will have an impact on the search for digital-based information sources that are very useful in planning (Sitti Husaebah, 2014). As stated by the need to utilise technology in the field of education including in strategic planning (Díaz, M., Alarcón, R. y Saborido, 2020; Zamudio et al., 2023).
The above statement states the importance of developing digital applications for student projections in educational planning, so the research will use the Hypertext Preprocessing programming language for the development of these applications. The student projection application for educational planning and development is newly developed in this study. This application will provide convenience in the projection of students for planning and development. Therefore, the purpose of this research is to produce an application for student projections that will help the process of educational planning and development. For this reason, the purpose of this study is to design a student projection application using the Hypertext Preprocessing programming language for educational planning and development.

2 METHOD

The methodology in this research is to analyze the need for projection applications for planning effectiveness and conduct a literature review to analyze the most effective model for projecting students. The selection of the most effective model is done by comparing existing models. Then compile the algorithm used by using the model.

Then, design the student projection application using the PHP (Hypertext Preprocessing) program. The first step is to design the application layout. Layout design is done according to what is needed to make projection applications. After the layout design is complete, the next step is to design the application program using the PHP (Hypertext Preprocessing) application. Then, after that, dialkukan coding was used to be able to produce student projection applications. After the application is complete, development is carried out by conducting application trials and planning expert validation.

3 RESULTS AND DISCUSSION

This research is to design a student projection application that is useful in educational planning, especially for future student planning. This application is designed using the PHP (Hypertext Preprocessing) application program. Usually, the projection process is done using a formula, so it takes a long time. Because the projection process is manually carried out by looking for projections of the number of students, this application
can provide efficiency and minimize errors in carrying out the student projection process (Wardiana, 2002). In comparison between manual calculations and the program, the difference in results is less than 1%, meaning that this PHP program is feasible to use (Armando Panjaitan, Oktovian B. A. Sompie, 2020). Based on this, it can be interpreted that using this designed application will provide convenience and greatly assist educational planners in making student projections for the future.

3.1 PROJECTION APPLICATION NEEDS ANALYSIS

Education planning includes macro, meso, and micro planning. Planning at the macro level, namely the national planning of the Republic of Indonesia, wants to provide equal and equitable education that aims to educate the nation's life (1945 Constitution of the Republic of Indonesia, 2020). And for meso, planning is planning at the regional level. To be able to realize equity in each region, the region needs to analyze conditions and needs. Each region needs to calculate the number of students going to school for each level and also provide sufficient capacity.

According to Laak (2010), with the development of planning in the 20th century, planning tends to reduce time and timeframes, but the methodological complexity continues to increase in various fields. Today, when discussing social phenomena as a whole, the approach used is no longer a bold approach to social planning but a cautious and pragmatic approach to the future. The development of this projection application is a form of method development in planning that reduces time and provides convenience. This is because planning requires projections of future needs.

A projection of each region in the future requires the calculation of current data, i.e. the number of people who will attend school, the number of teachers, the number of classrooms, and the current schools. To make it easier to do the calculation and reduce the calculation time, an application design is made that provides convenience for this. Because the projection of the number of students for the future used in school planning is done manually, it is necessary to find data on the growth of the population of school age who are allowed to enter, the percentage of the population of the age allowed to enter who enter at the first level, the percentage of dropouts at each level, and the percentage of repeating classes. After that, the number of students at that level is calculated in the cohort table. This is done for each projection year, so it takes a long time. For this reason,
it is very necessary to develop an application that facilitates the student projection process needed for planning.

Furthermore, to conduct student projections in education planning, especially school construction or the addition of classrooms in each sub-district using the student flow model projection model, based on the analysis of literature studies, it is known that the most effective model for student projections is a projection model based on the student flow model (Anisah, 2011). This student flow projection model is outlined in the form of a projection application.

3.2 DESIGN PROJECTION APPLICATION

The application that is designed is called the SUTI application by the researcher. This is because SUTI stands for student projection. At this stage, the design of the student projection application using PHP is carried out. The stages in the design process of this application are:

3.2.1 Creating an email account

The first step taken in this process is to create a special Gmail account called Adios, which is useful in future processes that require a Gmail account.

3.2.2 Designing the application layout

The next stage is to create and design the wallpaper display to be used as the identity of the application later, making the wallpaper display design using the help of Adobe Creative applications or tolls. At this stage, the components of the year table—student population, percentage of new students, projected number of students in early to late grades, and student output in year x—are made.

1. Installing PHP (Hypertext Preprocessor): The first step is to visit the php.net site on the Google Chrome internet search engine. Select the download menu that will be used to download the PHP application so that it is installed on the PC, making it easier to access.
2. XAMPP Installation: We need a web server application to translate PHP code into HTML code. On this web server, PHP files will also be placed. There are various web server applications, including Apache, Nginx, Microsoft IIS, and LiteSpeed. Apache is currently the most widely used web server. Besides Apache, Nginx is also quite popular because it is lighter and requires fewer resources (processor and RAM memory) than Apache. By installing the XAMPP application that "packages" a web server, PHP, and MySQL into one installation process.

3. Text Editor Installation PHP files are basically just plain text files with special writing rules. More or less the same as HTML files. To write PHP code, we can use any text editor application. Even the built-in Windows Notepad application can also be used. The steps are: writing code; running Xampp; opening in the browser by typing localhost/learn.php in the url; then breeding to do the code.

4. Procedure for using the projection application that has been created: The application created will be demonstrated so that users can use it more easily. The application can be used when opening the available shortcut with the name program.exe, and the home page will appear, which is the main page in the application. The home page is the initial display page of the application. The home page contains data that has been entered and a little explanation of the indicators used in the data table display. Then, next to the home, there is a data list; this display will display several button features in the application. There is an insert button to add data, an edit button to change data, and a delete button to delete data. In this view, there is a tool used to input initial data and input the projection year.

Student projections in planning are very important, as they can help relevant parties understand the growth or decline in the number of students in a region or area. By knowing the estimated number of students, stakeholders can optimize the utilization of resources such as school buildings, classrooms, and other supporting facilities. With data on the projected number of students, decisions can be made about the construction of new schools or the expansion of existing schools. And this helps governments and educational institutions plan educational infrastructure more efficiently and on target. By having an accurate picture of the expected number of students, education budgets can be allocated more efficiently. Precise projections help in avoiding wasting budget on areas that do not need school capacity increases.
The innovation carried out by developing a student projection application using PHP (Hypertext Preprocessor) results in the use of a student number projection application, reducing the risk of human error that may occur in manual calculations. By using technology, data can be processed quickly and accurately, avoiding errors that can affect planning decisions.

The utilization of technology in urban management and planning has sparked research and development initiatives around the world, including educational planning. Today, planning practices are rapidly being replaced by digital technologies that offer new and effective methods for professional planners. (Airey & Doughty, 2020; Devlin & Coaffee, 2023). Furthermore, (Boland et al., 2022) state that digital technologies have the potential to overcome long-standing limitations in the planning process (Batty, 2021). And even, in the UK, in August 2020, the government published a white paper to democratize, digitize, and digitalize the planning system (Boland et al., 2022). According to (Batty, 2021) technology enables planners to organize the planning system into a comprehensive set of physical instruments. Changes in hardware and software are needed for such activities to meet the requirements for the most basic automation to take place.

4 CONCLUSION

The education planning process, especially in projecting the number of students to analyze the need for school or classroom development in the future, requires innovation, namely the use of technology to speed up the process. In Indonesia today, the enrollment projection process for school development planning is still done manually. Manually conducted projections have a high chance of human error and miscalculation. For this reason, it is necessary to make innovations in student projections for planning school or classroom development needs. The innovation made is by transforming the projection method, namely by designing this student projection application designed for educational planning, especially student planning for the future. This application design uses the PHP (Hypertext Preprocessing) application program. And after the design process was carried out, the researcher named this projection application the SUTI (Student Projection) application. With this application, it can provide efficiency and minimize errors in the student projection process. When compared to the manual method, of course, this will greatly help and facilitate educational planners in the future.
REFERENCES


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