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Futech.Edu (Future Technology Education): Teaching and Learning Application Design in The Society 5.0 Era

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Abstract— Education is a critical issue in Indonesia. Central Sulawesi is one of the regions with the lowest quality of education in Indonesia, but has the potential to become an advanced and developing region in the field of education, which is due to several things such as large human resource potential. The Ministry of Education, Culture, Research, and Technology (KEMENDIKBUDRISTEK) has launched "Kurikulum Merdeka" in 2022 to address educational challenges. However, its implementation faces obstacles due to low literacy levels, complicated education administration and the lack of implementation of education digitalization. Futech.Edu, also known as Future Technology Education, is a digital education application in the era of Society 5.0 with three main functions, namely Teacher's Classroom, Student's Dashboard and Parent's Monitoring, which combines rarely found educational features into one application. These features include E-Raport to improve the efficiency of recapping student grades every semester at the elementary, middle, high school education levels, providing a teaching and learning system with three learning strategy options, namely inquiry based learning, problem based learning or project based learning so that teachers can create efficient and interactive classes, providing interest, talent, literacy and numeracy tests, national competition information for students, that are rarely updated on other platforms, providing an academic monitoring system and the development of children's potential for parents without logging into their child's account. The implementation of Futech.Edu has the potential to accelerate regional progress, especially in Central Sulawesi, which will ultimately contribute to national development for the long-term quality of education in Indonesia.

Keywords— *Education Challenges in Indonesia, Kurikulum Merdeka, Digital Education, Application.*

I. INTRODUCTION

Education plays a very important role for the progress of a nation. According to Alpian [1], the importance of education is as a forum for improving the quality of Human Resources (HR), making humans more civilized, an effort to make the nation's life smarter, improving the welfare of society, and building the dignity of the nation. Therefore, the government always strives to improve the quality of Indonesian education, such as allocating education funds, changing the curriculum, improving educational facilities and infrastructure, etc. However, it seems that these efforts have not provided maximum results considering that Indonesian education still has many problems. Based on World Population Review 2022 data, the average IQ value of the population in Indonesia is 78.49 [4]. This score places Indonesia in 130th position out of a total of 199 countries tested. Apart from that, based on World Population Review 2021 data, Indonesia is ranked 54th out of 78 countries included in the world education ranking [3]. Central Sulawesi is one of the regions with the lowest quality of education in Indonesia, but has the potential to become an advanced and developing region in the field of education, this is due to several things such as large human resource potential. The Ministry of Education, Culture, Research and Technology (KEMENDIKBUDRISTEK) has launched the "Independent Curriculum" in 2022 to answer educational challenges. However, its implementation faces obstacles due to low literacy levels, the complexity of education administration, and the digitalization of education that has not yet been implemented. Therefore, based on these problems, the author offers an innovative solution in the era of society 5.0, namely the Futech.Edu (Future Technology Education) application.




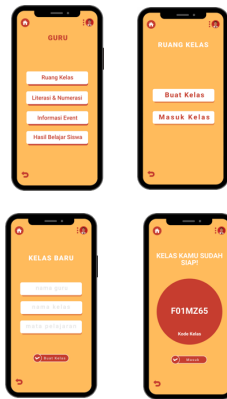


II. OBJECTIVES





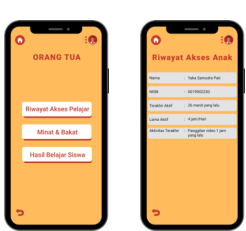

- To resolve implementation related issues Independent Curriculum (IKM) because application development is in line with the objectives of the independent curriculum, namely encouraging students' talents and interests, improving students' literacy and numeracy skills, creating fun education, developing students' potential and making learning more interactive.
- Providing a revolution in education by using interactive digital tools.
- Push the quality of teaching staff, because teaching staff can master innovative learning devices or media, as well as develop various interactive learning strategies.

III. METHODS

Table 1 summarizes the Futech.Edu application interfaces with its description.

Table 1. Futech.Edu application interface

Interface Design	Description	Interface Design	Description
	<p>A. After the user downloads the app, they need to create an account to use the app's features.</p>		<p>B. New users will need to register by filling in their personal details such as name, email, password, address, and status.</p>
	<p>C. As for existing users, they will only need to fill in their name, password, and status to sign in.</p>		<p>D. When logged in as a teacher, there will be a classroom menu, literacy and numeracy, event information and student learning outcomes. Some of these menus are also found in the student and parent features. Classroom has two options, namely create class and enter class. When choosing to create a class, it will switch to a new class that contains the teacher's name, class name, subject. Once filled in, the class has been created so there is a class code and click enter.</p>
	<p>E. After creating a classroom, several features will appear, where there is a menu of learning strategies, namely videos, modules, e-books, assignments and members. The display members can make voice calls, video calls, searches, and messages that can be forwarded to certain teachers and students.</p>		<p>F. In the event information there are several education level menus, namely elementary (SD), junior high (SMP), high school (SMA). The high school category has six choices, namely the national science olympiad, national student sports olympiad, national student art festival and competition, Indonesian language debate competition, national student research olympiad and national schools debating championship.</p>

	<p>G. The literacy and numeracy menu has several choices of education levels, namely elementary (SD), junior high (SMP), high school (SMA). If one of the options is clicked, the display of literacy test material, numeracy test material, practice questions and a collection of questions will appear.</p>		<p>H. On the learning results menu, students can find out the grade chart for each semester. The learning results menu can only be edited or added by teachers, while students and parents can only see.</p>
	<p>I. When logged in as a student, there will be a menu of classrooms, interests and talents, event information, literacy and numeracy, and student learning outcomes. Some of these menus are also found in the student features, but students cannot edit them. To view a student's profile, press the three-dot symbol in the upper right corner next to the profile. Classroom has two options: join class and enter class. If joining a class, it will switch to enter the class code. Then for the class entry option, there will be a list of classes and several menus in the class such as videos, modules, e-book assignments and members.</p>		<p>J. This is a view of the menu contents contained in the assignments, e-books, videos and modules menu.</p>
	<p>K. If logged in as a parent, there will be a student access history menu, interests and talents, and student learning results, student access history menu, interests and talents, student learning results. The only people who can see the child's access history are students and parents.</p>		<p>L. The interest and talent feature is provided for students, and the results of this interest and talent can be seen by the parents of the students, while there is no such feature for teachers.</p>

IV. RESULT AND FINDINGS

Indonesia's low level of education is influenced by several factors, including the low quality of physical facilities, the low quality of teachers, education that tends to prioritize intellectual intelligence over emotional intelligence, an ineffective learning system, and the role of parents who are less supportive [2]. Futech.Edu (Future Technology Education) is a digital-based education application that offers solutions to education problems in Indonesia, especially in Central Sulawesi and is tailored to the menus available in the application. The menus provided include classrooms, learning strategies, student access history, talents and interests, event information, literacy and numeracy, and student learning outcomes. So, through the application of Futech.Edu, the long-term impact is to improve the quality of Indonesian education. The success of the Futech.Edu application

can be measured in the next 3 to 5 years. Futech.Edu application development can be accepted by the Indonesian people, given the very high level of digital consumption of Indonesian society. In addition, the application was developed in accordance with the technological revolution and in the era of society 5.0 which demands digital understanding and realizes a digitally capable society. So, this idea is developed in accordance with the rules of society and does not violate certain norms.

V. CONCLUSIONS

Educational problems that have not been resolved optimally in Indonesia require innovative solutions so that they can be implemented by Indonesian education, especially in Central Sulawesi Province which has the potential to become an advanced and developing region in the field of education, this is caused by several things such as the large potential of human resources. The Futech.Edu application, also known as Future Technology Education, can be a solution to education problems and has the potential to accelerate regional progress, especially in Central Sulawesi, which ultimately contributes to national development for the quality of education in Indonesia in the long term because the Futech.Edu application is an education-based application. digital. The author hopes that this application can be developed and used by the Indonesian people, especially educators, students and parents. That way, this application will provide convenience because it provides various menus that are useful for teachers, students and parents.

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