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Smart Apps Creator Media to Increase Self-Awareness Career Advanced Study for Twelve-Grade Students of State High School

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ABSTRAK

Kesadaran diri dianggap sebagai kemampuan untuk mengenali diri sendiri. Kurangnya kesadaran diri menyebabkan kurangnya informasi pribadi seperti kelebihan dan kekurangan sehingga sulit dalam mengambil keputusan karir. Penelitian ini bertujuan untuk mengembangkan ESDILA sebagai media Smart Apps Creator (SAC) untuk meningkatkan kesadaran karir untuk studi lanjut pada siswa kelas XII SMA Negeri Karangpandan. Jenis penelitian ini adalah penelitian dan pengembangan (R&D), dengan menggunakan prosedur model Perancangan Sistem Instruksional Alessi dan Trollip 3 fase. Penelitian ini melibatkan 202 siswa kelas XII yang diambil secara random sampling. Data dalam penelitian ini berupa uji alpha, uji beta, dan efektivitas produk. Analisis data yang digunakan selama pengembangan adalah koefisien Aiken's V untuk analisis uji alpha, persentase deskriptif untuk analisis uji beta, serta uji t independen, uji t berpasangan, dan uji Cohen's d untuk analisis efektivitas produk. Hasil penelitian menunjukkan: 1) Evaluasi ahli pada uji alpha menunjukkan ESDILA diterima; 2) Uji usability pada beta test menunjukkan ESDILA memenuhi kriteria usability dengan kategori baik; 3) Dibandingkan dengan konseling konvensional, ESDILA terbukti efektif meningkatkan kesadaran karir untuk studi lanjut siswa kelas XII SMA Negeri Karangpandan. Sehingga disimpulkan bahwa ESDILA diterima, memenuhi kriteria kegunaan yang baik, dan dapat meningkatkan kesadaran diri karir siswa sehingga siswa mampu mengenali dirinya sendiri dan siap mengambil keputusan karir untuk studi selanjutnya.

ABSTRACT

Self-awareness is considered as the ability to recognize oneself. Lack of self-awareness causes a lack of personal information such as strengths and weaknesses, making it difficult to make career decisions. This research aims to develop ESDILA as a Smart Apps Creator (SAC) media to increase career self-awareness for further studies for class XII students at Karangpandan State High School. This type of research is research and development (R&D), using the 3-phase Alessi and Trollip Instructional System Design model procedure. 202 class XII students taken by random sampling participated in the research. The data in this research are alpha test, beta test, and product effectiveness. The data analysis used during development was Aiken's V coefficient for alpha test analysis, descriptive percentages for beta test analysis, as well as independent t-test, paired t-test, and Cohen's d for product effectiveness analysis. The research results show: 1) Expert evaluation in the alpha test shows that ESDILA is accepted; 2) The usability test in the beta test shows that ESDILA meets the usability criteria in the good category; 3) Compared to conventional counseling, ESDILA has been proven to be effective in increasing career self-awareness for further study for class XII students at Karangpandan State High School. So it is concluded that ESDILA is accepted, meets good usability criteria, and can increase students' career self-awareness so that students are able to recognize themselves and are ready to make career decisions for further study.

1. INTRODUCTION

Career plays a central role in society and has a significant impact on economic and social status as well as emotional well-being (Sucipto et al., 2023; Zhao & Wu, 2022). Career decision-making is a complex task, with some individuals making such decisions easily without experiencing difficulties, while others may face challenges before or during the decision-making process. This phenomenon of career decision-making difficulties is experienced by high school students. There are several factors that influence how individuals make career decisions, and these are explained in the taxonomy of decision-making difficulties, which includes three main categories: lack of readiness, lack of information, and inconsistent information (Fidan et al., 2018; Soeprijanto et al., 2022). It is known that one of the categories of lack of information is the lack of self-information, further explained as the lack of self-awarenes. The lack of self-awareness can lead to a lack of self-information, and without self-awareness, individuals will not be able to observe themselves to understand their own abilities, strengths, and weaknesses (Fidan et al., 2018; Lio, 2023). Therefore, it will be difficult to make career decisions.

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For high school students, further formal education is college. College is a higher education institution that provides opportunities for individuals to develop their academic and professional potential. Choosing the right college based on interests and potential is an important step in planning for future education (Gravett et al., 2021; Lindstrom et al., 2019).. Field studies on alumni of public high schools in the Karanganyar Regency in the academic year 2022/2023 show that 2342 students choose the path of further studies, while 1004 students choose the career path. Additionally, for high school students in the academic year 2022/2023.

However, high school students may face a problem when they graduate, as they might have unclear ideas about the available pathways for further studies. This is because high school students have limited exposure to various colleges or lack readiness for further studies, leading them to make decisions without exploring alternatives in specific colleges (Ferrer et al., 2022; Trisetiani et al., 2022). An interesting phenomenon in decision-making based on research conducted by previous study found that 92% of teenagers do not know what they want to do in the future, and 45% feel they are studying the wrong major (Fadillah et al., 2019). In fact, students lack self-awareness, as they do not have enough information about themselves, hindering decision-making. The results of self-awareness observations on 72 students in the twelfth grade of Karangpandan Public High School, who were sampled for the study, show a lack of information about their abilities (52.8%), a lack of information about personality traits (55.56%), a lack of information about preferred further study alternatives (59.72%), a lack of information about future abilities (54.12%), a lack of information about future personality traits (54.17%), a lack of information about preferred further study alternatives in the future (56.94%), and a lack of information about preferences related to further study in the future (51.39%). The magnitude of these observation results indicates the low level of self-awareness among students at Karangpandan Public High School in Karanganyar Regency, ultimately leading to poor decision-making abilities. Therefore, self-awareness needs to be enhanced.

Recently, a study reported that guidance can be an effective method in enhancing self-awareness (Kurniawan et al., 2020). Furthermore, guidance systems that utilize technology, information, and communication have been reported to provide significant improvements in self-awareness for the experimental group, while the control group using conventional guidance did not experience any increase in self-awareness (Lio, 2023; Tian et al., 2021). Therefore, it is time for the entire secondary school education system to adopt intelligent devices to assist students in enhancing their self-awareness, thus helping them to transform their self-orientation during their further studies. This is because many students have been lacking or insufficiently oriented, resulting in finding themselves on a path that is not aligned with their desired university profile or profession, or not in line with their aspirations, consequently facing various obstacles and failures in their further studies (Trisetiani et al., 2022)(Meyshera & Raihana Hamdan, 2023). Based on a survey conducted at Karangpandan State High School on guidance and counseling teachers, in their interviews, they stated that there is currently no intelligent guidance system that can be operated at Karangpandan State High School that includes self-awareness counseling in further study decisions. The goal of intelligent guidance is to gradually replace traditional school guidance, accompany students in understanding themselves so that they have the ability to make conscious choices for further studies, and provide suitable opportunities for further studies for students.

In relation to students' further studies, schools are responsible for assisting students in their career development, schools should support students in developing the necessary skills (Lim et al., 2018; Mufiqoh, 2022). Pre-higher education self-awareness guidance is a crucial aspect. Therefore, researchers have developed a school guidance service called "ESDILA" as an alternative solution to guide pre-higher education students in enhancing self-awareness, so that students will have the ability to make optimal choices for further studies. This developed ESDILA follows the development of the society 5.0 era, which is a concept centered on technological innovation in problem-solving (Ishaq et al., 2020; Parra, 2021).

The integration of Smart Apps Creator (SAC) into educational practices at Karangpandan State High School represents a significant advancement in leveraging technology to enhance students' self-awareness in career development. This initiative aligns with the growing body of research emphasizing the importance of self-awareness in personal and professional growth (Nasrullah et al., 2022; Pebriani et al., 2022). By utilizing digital tools like SAC, students are provided with a platform that not only fosters self-awareness but also facilitates personalized learning experiences tailored to their individual needs (Anggraini et al., 2020; Yilmaz, 2017).

The theoretical underpinnings of this approach underscore the pivotal role of self-awareness in decision-making processes and goal achievement, highlighting its significance in shaping students' academic and professional trajectories (Al-Qora'n et al., 2023; Istiana et al., 2018). SAC serves as a cutting-edge innovation in educational technology, symbolizing the forefront of educational progress by empowering students to explore career options and make informed decisions about their future (Cheng & Lam, 2023; Nasrullah et al., 2022). Through the amalgamation of theoretical insights with practical application, this research initiative at Karangpandan State High School bridges the gap between theoretical frameworks and real-world implementation, providing students with invaluable resources to navigate the complexities of career planning with confidence and clarity (Anugraheni et al., 2018; Widiyatmoko et al., 2021). By nurturing students' self-awareness and equipping them with essential skills for career exploration, SAC contributes to a holistic approach to student development,

ensuring a seamless transition into their future academic and professional endeavors (Masjaya & Wardono, 2018; Nasrullah et al., 2022). In conclusion, the incorporation of SAC into educational practices at Karangpandan State High School exemplifies a forward-looking approach to education that combines theoretical foundations with technological innovation to empower students in their career development journey.

In its creation, ESDILA is created with the assistance of Smart Apps Creator (SAC), then ESDILA is produced in the form of a school guidance media that includes a self-orientation process using smart technology to determine self-awareness, guide and provide information for students in choosing the best further studies. Therefore, this research aims to develop ESDILA as a Smart Apps Creator (SAC) media to enhance self-awareness in career studies for twelfth-grade students at SMA N Karangpandan. The novelty of this study embracing tools like SAC, students are not only equipped with the means to enhance their self-awareness but are also guided towards making well-informed decisions that align with their academic and professional aspirations.

2. METHOD

This study employs the research and development (R&D) approach. In this study, the researcher developed the advanced study consultation service media "ESDILA" created using smart apps creator (SAC). The design used in developing "ESDILA" adopts the 3-phase Alessi and Trollip Instructional System Design model consisting of planning, design, and development (Hasyim et al., 2020; Melianasari, 2022). In designing ESDILA, the researcher utilized the PIC-Model Career Decision-Making. This model explains the three stages in career decision-making which include prescreening, in-depth exploration, and choice. In prescreening, selecting several career alternatives, the researcher used Holland's theory to classify students based on personality types. Through this, students will understand their personality tendencies, enabling them to comprehend themselves based on their personality type. In in-depth exploration, students are directed towards career alternatives that match their personality. Subsequently, choice provides career options for students based on their personality.

The population in this study consists of 12 classes of twelfth-grade students at Karangpandan Public High School in Karanganyar Regency, with a total of 427 students. The sample used in the research was selected using random sampling technique. Three classes were selected with amount of students was 108 people for beta testing as part of the evaluation of the second phase design on a small scale. This determination is based on the context of the target in evaluating the specifications of the product design (Prasetyo, 2014; Sugiyono, 2018). For the validation test, the sample used is determined based on the Krejcie and Morgan formula. 3-phase Alessi and Trollip Instructional System Design model di ESDILA is show in Figure 1.

According to the development stages, the collected data consists of alpha test data, beta test data, and ESDILA effectiveness test data. The alpha test is used to assess the quality of ESDILA based on expert judgment, with 3 experts recruited including a guidance and counseling teacher with a bachelor's degree, a media master, and a counseling doctor. Experts assess using a questionnaire with criteria such as teaching & learning (motivation, self-directedness authenticity, and cognitive development), screen design (design suitability, vocabulary accuracy), technology (system interoperability), and economics & ethics (economic efficiency, ethicality) (Albana & Sujarwo, 2021; Arliza et al., 2019). There are 33 items to assess these criteria. The assessment uses a Likert scale ranging from 1 (does not meet the criteria) to 4 (meets the criteria at a high level).

The beta test was evaluated by 108 students of the twelfth grade. They were from 3 classes, namely class XII MIPA 1, class MIPA 2, and class MIPA 3. In the beta test concept, students used ESDILA and then provided their responses regarding the usefulness of ESDILA using the System Usability Scale (SUS) questionnaire, consisting of 10 items that participants used to assess their level of agreement. A 5-point agreement scale was used for each item, with responses ranging from 0 (strongly disagree) to 4 (strongly agree). Items 1, 3, 5, 7, and 9 were favorable items, while the rest were unfavorable (Kristjansdottir et al., 2020). The SUS score criteria with an average below 60 indicate something relatively poor, while a SUS score above 80 can be considered quite good (Rupere & Jakovljevic, 2021).

The effectiveness of ESDILA is known to increase students' self-awareness. In order to determine this, an experimental study was conducted with 202 students. The design used was a pretest-posttest control-group experiment. In this design, each participant was assigned to the experimental condition (ESDILA group, n=101) or the control condition (conventional group, n=101). All participants completed the Self-awareness Outcomes Questionnaire (SAOQ) as pretest and posttest data. SAOQ consists of 38 items with four subscales namely reflective self-development, acceptance, proactive, and emotional costs. Participants answered statements starting with "how often do you feel that .....", then responded with a five-point Likert scale ranging from "almost never" (1), "rarely" (2), "sometimes" (3), "frequently" (4), to "almost always" (5). The treatment was carried out for 1 semester (Malik, 2018).

The data analysis used during the development was descriptive percentage for observational analysis and beta test, Aiken's V coefficient for alpha test analysis with the criteria $V < 0.77$ meaning eliminated, V between 0.77 to 0.88 meaning modified, and $V > 0.88$ meaning accepted, as well as independent t-test, paired t-test, and

Cohen's d for product effectiveness analysis. The magnitude of Cohen's d is interpreted with criteria small (d = 0.2 - <0.5), medium (d = 0.5 - <0.8), and large (d = >0.8) (Putra, 2018). The analysis was conducted using SPSS17.

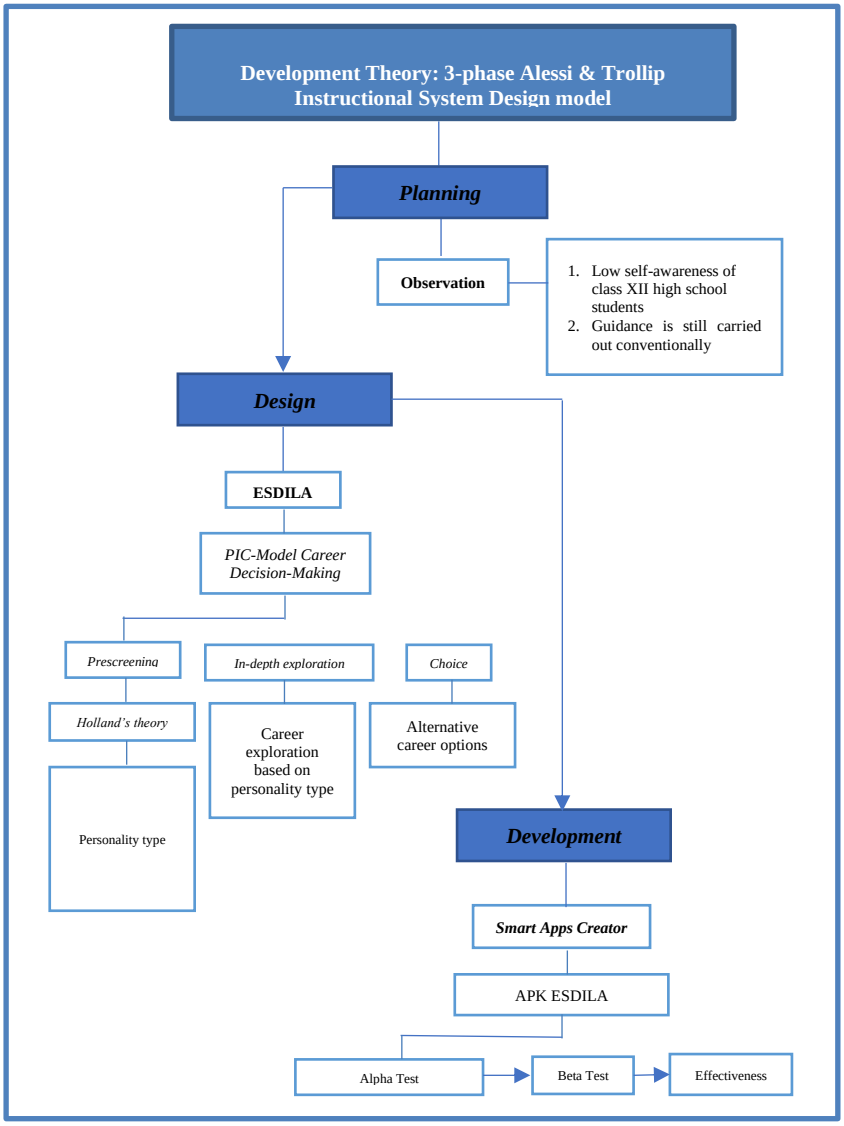

Figure 1. 3-phase Alessi and Trollip Instructional System Design model on ESDILA

3. RESULT AND DISCUSSION

Result

ESDILA begins with a welcome screen. From there, students can choose to navigate to the menu screen, where they can select a button to start their guidance. When students choose to seek guidance, the screen will display the options "yes" or "no". If students choose "yes", the screen will show the application profile, study information, counseling services, self-awareness, list of universities, and scholarship information (figure 3). The text used in this application is of medium size due to the limited screen size of smartphones. The colors used for the text contrast with the background to make it easy to read for users. The font choice for this application is mostly lato. Graphics in this application are used as backgrounds for each screen that appears on the display for decorative purposes. The background images used are very simple to ensure clear readability. Audio is only used for background sound for each action taken, so there is a sound when users select a button. The language used is Indonesian. This is to ensure that students feel comfortable and familiar with the language used in their daily lives. The background color used in this application is blue. This color was chosen because it falls into the category of colors that have a positive impact on students. The design of ESDILA is show in Figure 2.

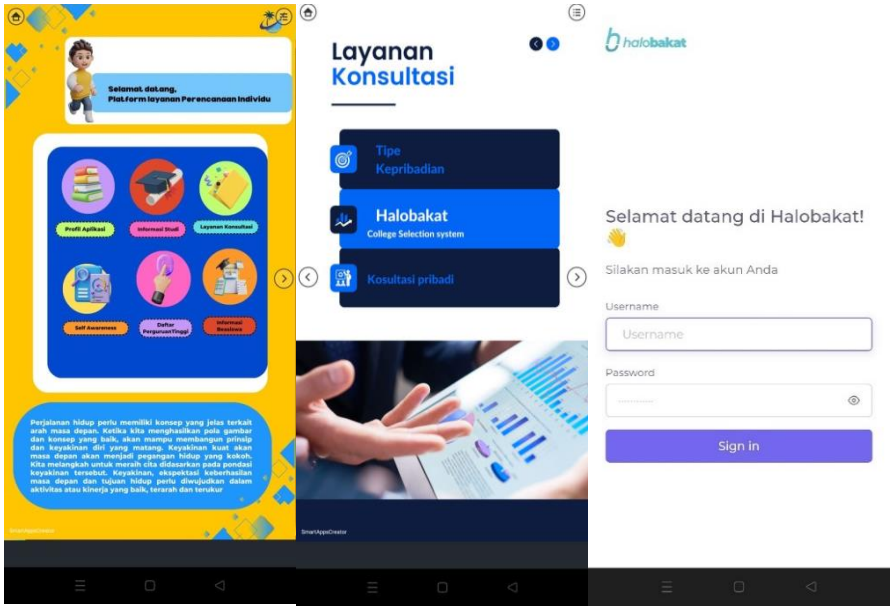

Figure 2. Design ESDILA

Alpha Test ESDILA

Alpha testing is an evaluation conducted by an expert who is a BK teacher with a bachelor's degree, a master's degree in media, and a doctorate in guidance and counseling. The purpose of this evaluation is to obtain feedback and input from experts to improve the development of a product, which in this case is ESDILA, to enhance the self-awareness of 12th-grade students regarding their career. The results of the alpha testing will indicate whether the ESDILA product has been "eliminated," "modified," or "accepted." Table 1 presents the results of the alpha testing.

Table 1. ESDILA alpha test results

No	Aspect	Aiken V Score	Aiken V Average	Interpretation
1	Provide recommendations correctly after the user answers the given test	0.89	0.89	Accepted
2	Funny dan interesting	0.89		
3	Exciting dan imajinatif	0.89		
4	Provide cooperation and agreement	0.78		
5	Offers appropriate recommendations for users for major and job choices	1.00		
6	Includes advanced stages	1.00		
7	Has a function to identify the user's current progress	1.00		
8	Users can change the app according to their own wishes	0.78		
9	Provide guidance on it	0.78		
10	The app content applies to real life	1.00		
11	Useful for improving user cognition	0.89		
12	Provide new knowledge	0.89		
13	Supports reasoning, thinking, and creative skills	0.78		
14	The screen colors feel and look good	0.89		
15	The design is simple and consistent	1.00		
16	The icons are intuitively designed	1.00		
17	The pattern of the images and letters are clear	1.00		
18	The app design structure reflects the app's characteristics	1.00		
19	The arrangement of operating buttons is appropriate	0.89		
20	Grammar and spelling are accurate	1.00		
21	The direction is clear	1.00		
22	Can be operated on other operating systems	0.78		

No	Aspect	Aiken V Score	Aiken V Average	Interpretation
23	Can be operated on other devices	0.89		
24	App loading time is appropriate	1.00		
25	Users manage the app according to their wishes	1.00		
26	Provides velocity of progress	0.78		
27	Didn't experience any errors	1.00		
28	Does not include unnecessary advertisements	1.00		
29	The app costs accordingly	0.89		
30	Does not include morally biased content	0.89		
31	Does not include violent and laser content	0.78		
32	Has copyright	0.00		
33	Free from the fear of data spills	0.89		

Based on Table 1, the alpha test results show that it is accepted, meaning that the ESDILA prototype is approved by experts. Because experts have approved the ESDILA prototype, ESDILA usability tests can be carried out on users.

ESDILA Beta Test

In this beta test, the purpose of ESDILA is examined. The testing aims to ensure that ESDILA is user-friendly and visually appealing. A total of 108 twelfth-grade students participated in the test. Over the course of one day, the students utilized ESDILA for career guidance and subsequently provided feedback regarding its usefulness. The response data from the twelfth-grade students' beta test of ESDILA is presented in the following Table 2.

Table 2. EDSILA response data is based on the System Usability Scale score

Interval	Classification	Frequency	%
81-100	Good	60	56%
60-80	Enough	48	44%
0-59	Worst	0	0%

According to the data presented in Table 2, a total of 60 students (56%) showed favorable responses towards ESDILA as indicated by their System Usability Scale (SUS) scores, whereas 48 students (44%) demonstrated moderate responses to ESDILA based on their System Usability Scale (SUS) scores. In order to gain a deeper understanding of the response data for ESDILA, the researcher has included Figure 3 for reference.

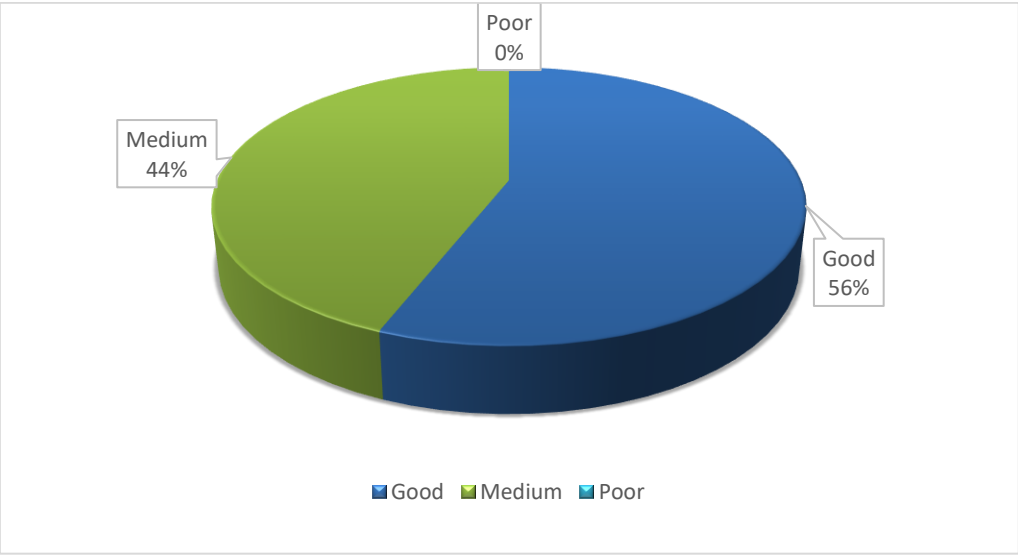

Figure 3. ESDILA Response Histogram based on System Usability Scale (SUS) Scores

Subsequently, in order to determine the usefulness of ESDILA, the average System Usability Scale (SUS) score is utilized, table 3 displays the beta test results, as show in Table 3.

Table 3. ESDILA Beta Test Results

Developed products	Average SUS score	Category
ESDILA	81	Good

ESDILA Effectiveness Test

There is a difference in the average scores of the initial and final self-awareness tests of students due to an effect, namely the effect of guidance treatment for 1 year, which is ESDILA and conventional, with t-value of 36.273 ($p<0.05$) and Cohen's d of 0.99 for the ESDILA group and t-value of 30.008 ($p<0.05$) and Cohen's d of 0.77 for the conventional group as show in Table 4.

Table 4. Difference Between Initial Test and Final Test of the Two Groups (After Treatment)

Group	Test	M ± SD	t_{count}	*p-value*	*Cohen's d*	*Cohen's d Interpretation*
ESDILA	Pre	106.03±35.27	36.273	0.000	0.99	Large
	Post	111.94±36.16				
Conventional	Pre	105.84±35.28	30.008	0.000	0.77	Medium
	Post	110.42±35.72				

When comparing between the ESDILA group and the conventional group, the results indicate a significant difference in the effectiveness of improving self-awareness in both groups with a t-value of 5.990 ($p<0.05$) and Cohen's d of 0.84. Guidance using ESDILA has a better impact compared to conventional guidance as show in Table 5.

Table 5. Difference in effectiveness of improvement of the two groups (after treatment)

Group	M ± SD	t_{count}	p-value	Cohen's d	Cohen's d Interpretation
ESDILA	5.91±1.64	5.990	0.000	0.84	Large
Conventional	4.57±1.53				

Discussion

This research was conducted to develop ESDILA as a tool to enhance the self-awareness of twelfth-grade high school students in the context of guidance and counseling for further studies, which can be used by students and guidance counselors to provide guidance for further studies during the career decision-making readiness process. Following this, after ESDILA was designed and the ESDILA prototype was produced, experts were utilized to assess the ESDILA prototype for its suitability to be tested by users. This is crucial as the evaluation by experts aims to assess the quality of ESDILA in terms of design, content, and flow. The experts involved came from different backgrounds, namely media experts and academic experts. The evaluation results presented in the alpha test indicated that initially, ESDILA needed modifications/revisions. This was also a result of the alpha test which identified and subsequently addressed issues in the design, content, and flow of ESDILA. Therefore, ESDILA was revised/modified. After being re-evaluated by experts, the results showed that ESDILA was accepted by the experts. In line with the findings of this research, a study conducted by previous study state successfully developed a similar application to assist students in considering further studies or directly planning their future careers (Mufiqoh, 2022). Moreover, similar research has also successfully created an application for further studies to provide an overview of universities and study programs offered by various campuses to facilitate students in making decisions about their future studies (Wiyata et al., 2022). These developed applications or products share a common feature, namely, they all have to undergo feasibility testing by experts and practitioners before being mass-produced and implemented in educational activities.

The interpretation of the findings reveals the significance of developing technological tools, like ESDILA, to support students in their career decision-making process. By utilizing experts' input and undergoing rigorous evaluation, ESDILA was refined to meet the needs of students and guidance counselors effectively. Moreover, the success of similar applications in aiding students' career planning emphasizes the potential of technology in enhancing educational outcomes (Alfaiz et al., 2021). These findings generalize into the established theoretical framework of educational technology and career development, highlighting the importance of integrating innovative tools into guidance and counseling practices. Overall, the findings contribute to a deeper

understanding of how technological interventions can positively impact students' self-awareness and career readiness, aligning with broader theories of educational psychology and career development.

After it has been declared that experts have accepted the prototype of the developed product, a beta test, which is a usability test, can be conducted on users, namely twelfth-grade high school students. This usability test is to ensure that ESDILA meets the criteria of ease of use, user-friendliness, and visual appeal. The results of the beta test show that ESDILA meets the usability criteria well, including students feeling inclined to use ESDILA, ESDILA not being too complicated, ESDILA being easy to use, students not needing technical support to use ESDILA, the functions in ESDILA being well integrated, no inconsistencies in ESDILA, students being able to quickly learn ESDILA, students feeling that ESDILA is not complicated to use, students feeling confident using ESDILA, and students not needing to learn a lot to start using ESDILA. Since ESDILA has met the usability criteria, testing can proceed to effectiveness testing. In the implementation of effectiveness testing, an experiment is conducted with an experimental group and a control group (Awwalina & Wachidah, 2023; Durall Gazulla et al., 2023). The results show that after one semester of treatment, there is a difference between the experimental group and the control group. The findings from the usability and effectiveness testing phases contribute to a deeper understanding of ESDILA's efficacy in supporting students' self-awareness and career readiness. These results align with previous research on usability testing in educational technology and experimental studies in the field of guidance and counseling (Santos et al., 2018; Ilic, 2021). By contextualizing the findings within existing literature, the discussion elucidates the significance of ESDILA's development and implementation in enhancing students' career decision-making processes. Furthermore, these findings underscore the importance of incorporating user feedback and conducting rigorous testing phases to ensure the effectiveness and usability of educational interventions like ESDILA. The research contributes to the broader discourse on the integration of technology in educational practices and its impact on students' academic and career development.

Similarly to the study conducted by previous study which demonstrated the beta test results from users and declared it feasible, showing the effectiveness of the media they developed (Putri & Sofyan, 2020). However, what sets this study apart from previous ones is the intended output and the concepts utilized. In ESDILA, students are able to receive career counseling guidance, whereas in other similar applications, students only engage in career exploration (Melianasari, 2022; Tian et al., 2021). Furthermore, the output in ESDILA focuses on enhancing self-awareness. In this case, self-introduction is crucial to be known first before students explore careers that align with their personalities. Therefore, in ESDILA, students are directed to recognize their personality types, which can determine their self-awareness.

After using ESDILA, students are able to develop self-awareness, have a positive self-image, confidence, a deeper understanding of themselves, objective and proactive career decision-making skills, and emotional intelligence. Therefore, it can be concluded that ESDILA introduces the concept of advanced career counseling guidance in schools that is integrated with smart technology and greatly assists students in providing information about their personality and suitable career choices. The research presents a new way of guiding students in career counseling at schools by introducing ESDILA, a smart technology integration. This tool helps students boost their self-awareness, confidence, and understanding of themselves, while also improving their career decision-making skills and emotional intelligence. With ESDILA, students get personalized information about their personality and suitable career paths, transforming the traditional approach to career counseling into a modern and tailored solution for students in today's digital era.

4. CONCLUSION

ESDILA is an application that has been proven to be accepted, meets the criteria of good usability, and can enhance students' self-awareness so that they are able to recognize themselves and have readiness in making decisions for further career studies. The ESDILA application can assist twelfth-grade high school students in guidance counseling for further studies. This ESDILA application also facilitates guidance counselors in guiding the further studies of twelfth-grade high school students. By using the ESDILA application, twelfth-grade high school students have information about their abilities, information about personality traits, information about preferred alternatives for further studies, information about preferences related to further studies, information about future abilities, information about future personality traits, information about preferred alternatives for further studies in the future, and information about preferences related to further studies in the future. However, the sample in this study is limited, so the results may not be generalizable to all twelfth-grade students. Therefore, further studies are needed to investigate the effectiveness of ESDILA using a larger sample.

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