No. 458 | REC. 07-08-2021 | REV. 12-08-2022 | ACC. 11-09-2023

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390
tip.ppj.unp.ac.id

Jurnal Teknologi Informasi dan Pendidikan
Volume 14, No. 2 September 2021
PG. 99 – 105 | https://doi.org/10.24036/tip.v14i2

Development of Android-Based Career Guidance Media

Laila Hidayati[1*], Fahmi Rizal[2], Syahril[3]
[123]Pendidikan Teknologi dan Kejuruan, Universitas Negeri Padang, Indonesia
**Corresponding Author*: lailahidayati23@gmail.com

INTISARI

Tujuan dari penelitian ini adalah mengembangkan media berbasis android untuk membantu pelaksanaan Bimbingan Karir agar lebih praktis, efektif dan menarik, sehingga meningkatkan pemahaman dan penguatan mahasiswa dalam memilih karir secara mandiri. Penelitian ini menggunakan model Research and Development (R&D) 4D. Penelitian dilaksanakan di SMKN 1 Koto Besar dengan subjek penelitian kelas XI Kimia Industri yang berjumlah 40 siswa. Instrumen pengumpulan data terdiri dari observasi, wawancara dan angket. Teknik analisis data untuk uji validitas menggunakan rumus Aikens's V, uji kepraktisan menggunakan statistik deskriptif, dan uji keefektifan menggunakan kategorisasi level. Hasil penelitian menunjukkan bahwa media bimbingan karir berbasis android praktis dan efektif. Hal ini terlihat dari tes kepraktisan yang diberikan kepada guru dan siswa dengan hasil "Sangat Praktis", 90,67% tanggapan siswa dan 86,08% tanggapan guru. Selanjutnya uji keefektifan yang diberikan kepada siswa menunjukkan adanya peningkatan pemahaman dan kemantapan siswa dalam memilih karir secara mandiri setelah menggunakan media bimbingan karir.

Kata kunci: Bimbingan karir, layanan bimbingan karir, bimbingan karir berbasis android

ABSTRACT

The purpose of this research is to develop android-based media to assist the implementation of Career Guidance to make it more practical, effective and interesting, thereby increasing students' understanding and strengthening in choosing careers independently. This study uses the Research and Development (R&D) 4D model. The research was carried out at SMKN 1 Koto Besar with the research subject of class XI Kimia Industri, totaling 40 students. Data collection instruments consist of observations, interviews and questionnaires. Data analysis technique for validity test uses Aikens's V formula, practicality test uses descriptive statistics, and effectiveness test uses level categorization. The results showed that the android-based career guidance media was practical and effective. This can be seen from the practicality test given to teachers and students with the results "Very Practical", 90.67% of student responses and 86.08% of teacher responses. Furthermore, the effectiveness test given to students showed an increase in students' understanding and stability in choosing a career independently after using career guidance media.

***Keywords**: Career* guidance*, career guidance services, android-based career guidance*

INTRODUCTION

Ready to work is the goal of vocational education graduates. Mustaghfirin Amin, Director of Vocational Development, stated that vocational education is secondary education that prepares students to work in certain fields[1]. In the SMK curriculum it is stated that the objectives of SMK education are to: 1) Enter the workforce and develop a professional attitude, 2) Be able to choose a career, be able to compete and develop themselves[2].

Ready to work in question, namely being able to compete in the business/industry world, either as employees or opening their own business. The knowledge gained during school and internships in companies can be used to enter the world of work or start entrepreneurship according to students' abilities[3].

In addition to work, SMK graduates are also allowed to continue their education to higher education according to their interests and abilities[4]. states that there are 4 alternative career choices for high school graduates, namely: 1) entering the world of work and industry, 2) continuing their studies to college level, 3) taking courses or training, and 4) entering family life.

The Director General of Higher Education at the Ministry of Education and Culture (Kemendikbud) stated that in order to produce competent graduates and improve superior human resources in Indonesia, the government has given appreciation to students who want to continue to college by providing college KIP scholarships for high school and vocational school graduates [5].

Vocational students have unstable souls who need direction and enlightenment in making decisions[6]. Choosing a career is not easy for him, this is because the understanding and information they have is still very limited[7]. In establishing their choices and desires regarding careers after graduation, students need help from other parties who are more understanding[8]. Youth career problems are usually related to the selection of the type of education, which leads to the type of future work, future career planning, decision making about future careers, and information on existing work groups with the requirements that must be possessed[9].

SMKN 1 Koto Besar is a new vocational school in the field of chemistry and health in Dharmasraya district. This school was officially established on June 22, 2016. Efforts are being made to prevent and address the problem of student career choice at SMKN 1 Koto Besar, namely by providing career information services such as individual and group counseling by BK teachers. However, according to Mrs. Dora Pratiwi, the problem has not been fully resolved due to the lack of student interest in carrying out career guidance, resulting in a lack of understanding of students regarding information and strengthening future career choices[10]. Career guidance services have also not been implemented properly because the media used is not yet available, so the career service process is only provided through lectures in class[11].

The use of unattractive media will affect student motivation so that it results in career guidance results. The use of media in career guidance should pay attention to existing technological developments, be interesting to use, and be able to display what is desired. One of the media that can be used in career guidance is interactive multimedia. Interactive Multimedia is a multimedia display designed by designers so that the appearance fulfills the function of informing messages and has interactivity to its users (users)[12].

The rationale for developing interactive multimedia-based career guidance media is the development of increasingly sophisticated technology and provides ease of use by being accessible anywhere and anytime for career guidance service activities at SMKN 1 Koto Besar.

By using the Adobe Flash Professional CS6 application, it is expected to be able to produce interesting, practical and effective career guidance media, as well as useful in strengthening students' career choices. Therefore, a research entitled **Development of Android-Based Career Guidance Media at SMK Negeri 1 Koto Besar** is important.

METHOD

This study aims to develop career guidance media, the research method used is the research and development method[13]. Research and Development (R&D) is a research method intentionally, systematically, to find, improve, develop, produce, or test the effectiveness of products, models, or methods / strategies / ways that are superior, new, effective, efficient, productive and meaningful[14]. According to [11] research and development methods can be interpreted as a scientific way to research, design, produce and test the validity of the products that have been produced. The product to be developed is an interactive application that is used to assist the career guidance process by utilizing a Laptop and Smartphone as a medium that will run it.

The research was carried out at SMKN 1 Koto Besar, Dharmasraya Regency, the research subjects were class XI students majoring in Industrial Chemistry. The research time is on March 22, 2021 - April 22, 2021. The number of students who make up the population is 40 students. And the test sample was 18 students of class XI Laboratory Testing Analysis from the same

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390

Expertise Study Program as the Department of Industrial Chemistry.

In conducting research and development of this media, researchers used a 4D model.

a. Define

At this stage there are three steps carried out by the researcher, namely observation, student analysis and needs analysis.

b. Design

In the second stage, researchers select media, design prototypes and create media.

c. Development

The development stage has a goal to produce a product that is better than before, namely valid, practical, and effective. The validity test consists of two stages, namely the media and material validity tests carried out by validators who are experts in their fields, analyzed using Aiken's V formula [6]. The formula used is as follows:

$$V = \sum S/[n(c-1)]$$

Information:
Lo = the lowest validity rating score C = the highest validity rating score R = number given by rater N = number of validators

Practicality tests are given to teachers and students by analyzing the completed questionnaire. The practicality of the media was analyzed using descriptive statistics [7]. The formula used is as follows:

$$\text{Practical Value} = \frac{\sum item\ score}{ideal\ max\ score} \times 100\%$$

Table 1. Career Guidance Media Practicality Category

No	Achieve Level (%)	Category
1	81 - 100	Very Practical
2	61 - 80	Practical
3	41 - 60	Quite Practical
4	21 - 40	Less Practical
5	0 - 20	Impractical

The effectiveness test was carried out by analyzing the questionnaire using level categorization [8] which was given to students by comparing the results of guidance before and after using career guidance media.

Table 2. Research Subject Categorization

Score	Categorization
$\mu + 1.5\ \sigma < X$	Very High
$\mu + 0.5\ \sigma < X \leq \mu + 1.5\ \sigma$	High
$\mu - 0.5\ \sigma < X \leq \mu + 0.5\ \sigma$	Currently
$\mu - 1.5\ \sigma < X \leq \mu - 0.5\ \sigma$	Low
$X \leq \mu - 1.5\ \sigma$	Very Low

d. Dissemination

At this stage, the media that has been tested for validity, practicality and effectiveness will be distributed and used in the career guidance process in schools. Users of this media are students of class XI SMKN 1 Koto Besar.

RESULT AND DISCUSSION

a. Define

The definition stage is carried out to see an overview of how the conditions in the field are related to the career guidance process carried out at SMK Negeri 1 Koto Besar. Career guidance is carried out using the lecture method during face-to-face meetings in class. The time available for training in class is only 1 JP (45 Minutes). Guidance individually or in groups has also not been implemented.

This study did not discuss the value in learning so that the researchers conducted product trials to other classes with different majors from the research respondents, namely students of class XI Analisis Pengujian Laboratorium. Furthermore, the guidance media is used by respondents, namely class XI Kimia Industri to find out whether the guidance media given to students can provide additional benefits in the implementation of career guidance services.

b. Design

The results of the analysis from the definition stage are used for the next stage, namely the design stage. Career Guidance Media is designed using the Adobe Flash CS6 application because it is considered very supportive for animation creation, button creation and can integrate text, images, video, animation, and sound, and can be used as an APK that can run on Android.

Figure 3.1 Login design

This android-based career guidance media contains material about career guidance information that is in accordance with student competencies, namely Kimia Industri. The media displayed are images, text, sound, video, animation and quizzes regarding career guidance that has been implemented.

c. Development

The next stage is the development stage. At this stage, several trials were carried out on the media produced to suit the research objectives, namely validity, effectiveness and practicality tests[15].

Career guidance media will be tested for media validation by media and material experts according to existing criteria. This media validation was carried out by three media expert validators and media validation has three aspects of assessment requirements, namely didactic requirements, construction requirements and technical requirements. This media validation was carried out three times.

The results of the assessment of each aspect given by the media validator were analyzed using the Aiken's V statistical formula. The results obtained were the validation values for the resulting product design.

Based on Table 3 shows the results of media validation with a validity value of 0.93 > 0.667 given by the 1st validator, a validity value of 0.94 > 0.667 given by the 2nd validator and a validity value of 0.96 > 0.667 given by the 3rd validator, then the guidance media Android-based careers are included in the valid category.

Table 3. Android-based career guidance media validation results

No	Validator	Evaluation	Category
1	Validator 1	0.93	Valid
2	Validator 2	0.94	Valid
3	Validator 3	0.96	Valid
	Average	0.94	Valid

In the implementation of the material validity test, the validator reviews the material contained in this career guidance media and then gives a value to the material contained in it.

Based on Table 4, the results of the validation of the android-based career guidance media have a validity value of 0.92 > 0.667 given by the 1st validator, a validity value of 0.92 > 0.667 given by the 2nd validator, and a validity value of 0.94 > 0.667 given by the second validator. -3 then the material on the career guidance media is included in the valid category.

Table 4. Android-based career guidance materials validation results

No	Validator	Evaluation	Category
1	Validator 1	0.92	Valid
2	Validator 2	0.92	Valid
3	Validator 3	0.94	Valid
	Average	0.93	Valid

Furthermore, practicality is obtained from the career guidance process by utilizing android-based career guidance media which contains career guidance media content that has previously been declared valid by the validator. The practicality of the guidance media is obtained from the responses of teachers and students after using the media. Practical test data based on the teacher's response, namely to measure the teacher's response to the practicality of using the developed media.

Table 5. Practical test data based on teacher responses

No	Assessment Aspect	Average Value	Category
1	Product Quality	92 %	Very Practical
2	Material Presentation	93.33 %	Very Practical
3	Benefit	86.67 %	Very Practical
	Average	90.67 %	Very Practical

Based on Table 5, the average practical value of career guidance media from teacher responses is

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390

90.67%. So it can be concluded that the media is in the "Very Practical" category. So that the representation of the data shows that the use of career guidance media is very helpful for teachers in carrying out the learning process.

Practical test data based on student responses, namely to measure student responses to the practicality of using the developed media.

Table 6. Practical test data based on student responses

No	Assessment Aspect	Average Value	Category
1	Product Quality	89.50 %	Very Practical
2	Material Presentation	85.42 %	Very Practical
3	Benefit	83.33 %	Very Practical
	Average	86.08 %	Very Practical

Based on Table 6, the average practical value of career guidance media from student responses is 86.08%. So it can be concluded that the media is in the "Very Practical" category. So that the representation of the data shows that the use of career guidance media is very helpful for students in carrying out the learning process.

In the previous discussion, researchers have tested career guidance media to different classes, namely class XI APL, totaling 18 students. Before using the career guidance media, the researcher gave an explanation to the students regarding the career guidance material so that when using the media students were no longer confused about what the function of the guidance media was. When conducting group interviews with this class, some students have already started to answer the career options they want. However, when asked about the direction, such as where to work, what college they will choose and where, they still haven't thought about it. This is also reinforced by the opinion of Mrs. Tiwi as a BK teacher at SMKN 1 Koto Besar. Bu Tiwi said that only a small number already had a career choice plan and asked about the career information they needed.

The test results on products in different classes can be seen in Table 7 which shows 66.67% of students have an understanding of "Very High" career choices, namely 12 students. A total of 33.33% of students showed an understanding of career choice in the “High” category.

Table 7. The results of the effectiveness of career guidance media

Score		Total	%	Categoriation
$\mu + 1.5\ \sigma < X$	$X > 176$	12	66.67%	Very High
$\mu + 0.5\ \sigma < X \leq \mu + 1.5\ \sigma$	$147 < X \leq 176$	6	33.33%	High
$\mu - 0.5\ \sigma < X \leq \mu + 0.5\ \sigma$	$117 < X \leq 147$	-	-	Currently
$\mu - 1.5\ \sigma < X \leq \mu - 0.5\ \sigma$	$88 < X \leq 117$	-	-	Low
$X \leq \mu - 1.5\ \sigma$	$X \leq 88$	-	-	Very Low

After carrying out product trials in different classes, showing good results, the researchers then tested the effectiveness of the class that was used as the object of research, namely XI Kimia Industri with a total of 40 students. This effectiveness test was carried out twice, namely before carrying out career guidance, a questionnaire was given to determine the level of students' understanding in choosing a career choice after graduation and after carrying out career guidance using career guidance media and assisted by BK teachers in its implementation. The results of the effectiveness test of the use of career guidance media can be seen in the table 8 which shows as many as 17.5% of students have an understanding of "Low" career choices, namely 7 students, 27.5% students have an understanding of "Medium" career choices, namely 11 students, 25% of students have an understanding of "High" career choices, namely 10 students, and 30% students have an understanding of “Very High” career choice of 12 students.

Table 8. Effectiveness test results before using career guidance media

Score		Total	%	Categoriation
$\mu + 1.5\ \sigma < X$	$X > 176$	12	30 %	Very High
$\mu + 0.5\ \sigma < X \leq \mu + 1.5\ \sigma$	$147 < X \leq 176$	10	25 %	High
$\mu - 0.5\ \sigma < X \leq \mu + 0.5\ \sigma$	$117 < X \leq 147$	11	27.5 %	Currently
$\mu - 1.5\ \sigma < X \leq \mu - 0.5\ \sigma$	$88 < X \leq 117$	7	17.5 %	Low
$X \leq \mu - 1.5\ \sigma$	$X \leq 88$	-	-	Very Low

Furthermore, the researcher provides an explanation of career guidance by utilizing android-based career guidance media. During the

career guidance service process, the researcher was also accompanied by a BK teacher so that the process of explaining and using career guidance media was carried out in accordance with the material in accordance with the Guidance and Counseling rules. The results of the test of the effectiveness of career guidance media can be seen in table 4.7 which shows as many as 5% of students have an understanding of "Low" career choices, namely 2 students, 10% of students have an understanding of "Medium" career choices, namely 4 students, 32.5% students have an understanding of career choices. “High” is 13 students, and 52.5% of students have an understanding of career choice “Very High”, which is 21 students.

Table 9. Effectiveness test results of career guidance media

Score		Total	%	Categoriation
$\mu + 1.5\ \sigma < X$	X > 176	21	52.5 %	Very High
$\mu + 0.5\ \sigma < X \leq \mu + 1.5\ \sigma$	147 < X ≤ 176	13	32.5 %	High
$\mu - 0.5\ \sigma < X \leq \mu + 0.5\ \sigma$	117 < X ≤ 147	4	10 %	Currently
$\mu - 1.5\ \sigma < X \leq \mu - 0.5\ \sigma$	88 < X ≤ 117	2	5 %	Low
$X \leq \mu - 1.5\ \sigma$	X ≤ 88	-	-	Very Low

From the results of the effectiveness test table in table 8 and table 9, it can be seen that the level of student understanding increases after carrying out career guidance using android-based career guidance media. With this, android-based career guidance media can be declared effective in increasing understanding and strengthening students' career choices.

This is also corroborated by the opinion of Mrs. Tiwi as a BK teacher, that students of SMKN 1 Koto Besar, especially class XI Kimia Industri are more interested in the career guidance media used because they are related to smartphones, which display audio, video, real examples of Kimia Industri graduates who make them begin to make provisional career options. Mrs. Tiwi also said that in class XII students will also be given career guidance again to strengthen the choices they have prepared by providing supporting information or other options that are more in line with the character, interests and talents of students.

d. Dissemination

The next stage is the dissemination (Desseminate) which is the last stage in the development of career guidance media. At this stage, the media that has been tested for validity, practicality and effectiveness are ready to be distributed or used in the career guidance process in schools. The users of this media are students of class XI SMKN 1 Koto Besar. The selection of class XI students as users is because they already have sufficient knowledge in class X and have the opportunity to improve what is lacking in class XII.

CONCLUSION

Based on the results of the preliminary study and discussion in the previous chapter, the following conclusions can be drawn:

1. From the development process carried out from the analysis stage to the testing stage, this research has produced an interactive multimedia-based career guidance media product that utilizes Adobe Flash CS6 software as a development medium.
2. This career guidance media can be used using a desktop or android smartphone so that students can use it anywhere and anytime.
3. The android-based career guidance media produced is declared as a valid media by experts so that it can be used as a career guidance medium.
4. The career guidance media produced is stated as a practical medium that is responded to by teachers and students, as well as effective as evidenced by the comparison of students' understanding results in career choices before and after using career guidance media.

REFERENCES

[1] A. Christian and F. Ariani, “Rancang Bangun Sistem Informasi Peminjman Perangkat Demo Video Confrence Berbasis Web Dengan Metode Waterfall,” *J. PILAR Nusa Mandiri*, vol. 14, no. 1, pp. 109–111, 2018.

[2] M. Audrilia and A. Budiman, “Perancangan Sistem Informasi Manajemen Bengkel Berbasis Web (Studi Kasus : Bengkel Anugrah),” *J. Madani Ilmu Pengetahuan, Teknol. dan Hum.*, vol. 3, no. 1, pp. 1–12, 2020, doi: 10.33753/madani.v3i1.78.

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390

[3] M. A. Rizal and T. Misriati, "Perancangan Sistem Informasi Penjualan Pakaian Berbasis Web Pada Toko Uj Outlet," *J. Sisfokom (Sistem Inf. dan Komputer)*, vol. 7, no. 1, pp. 9–15, 2018, doi: 10.32736/sisfokom.v7i1.281.

[4] H. Rohman and S. Sheralinda, "Pengembangan Sistem Informasi Rawat Jalan dan Pelayanan Persalinan di Klinik Berbasis Web," *J. Kesehat. Vokasional*, vol. 5, no. 1, p. 53, 2020, doi: 10.22146/jkesvo.50482.

[5] N. Oktaviani, I. M. Widiarta, and Nurlaily, "Sistem Informasi Inventaris Barang Berbasis Web Pada Smp Negeri 1 Buer," *J. Inform. Teknol. dan Sains*, vol. 1, no. 2, pp. 160–168, 2019, doi: 10.51401/jinteks.v1i2.422.

[6] C. Susanto, "Perancangan Aplikasi Pencarian Lokasi Kuliner Terdekat di Makassar Menggunakan Algoritma A * Berbasis Android Design of the Nearest Culinary Location Search Application in Makassar Using A * Algorithm Based on Android," vol. VIII, no. 2, pp. 111–119.

[7] D. S. Hormansyah and Y. P. Utama, "Aplikasi Chatbot Berbasis Web Pada Sistem Informasi Layanan Publik Kesehatan Di Malang Dengan Menggunakan Metode Tf-Idf," *J. Inform. Polinema*, vol. 4, no. 3, p. 224, 2018, doi: 10.33795/jip.v4i3.211.

[8] M. Destiningrum and Q. J. Adrian, "Sistem Informasi Penjadwalan Dokter Berbassis Web Dengan Menggunakan Framework Codeigniter (Studi Kasus: Rumah Sakit Yukum Medical Centre)," *J. Teknoinfo*, vol. 11, no. 2, p. 30, 2017, doi: 10.33365/jti.v11i2.24.

[9] K. El Kharki, K. Berrada, and D. Burgos, "Design and implementation of a virtual laboratory for physics subjects in moroccan universities," *Sustain.*, vol. 13, no. 7, pp. 1–28, 2021, doi: 10.3390/su13073711.

[10] R. Rahmadani, E. D. Suryanto, and M. Affandi, "Development of Android-Based Learning Multimedia for Electrical Lighting Installation Courses in Vocational High School," vol. 591, no. Aisteel, pp. 736–739, 2021.

[11] G. Supriyanto, A. G. Abdullah, I. Widiaty, and J. Mupita, "Career guidance web-based expert system for vocational students," *J. Eng. Sci. Technol.*, vol. 14, no. 4, pp. 1865–1877, 2019.

[12] C. Putra Bhakti, S. Ummi Noviriska Hasan, K. Wulidatin Noor, F. Aminur Rahman, and M. Alfarizqi Nizamuddin Ghiffari, "A Design of 'postsecondary Options' Android Application for Junior High school Student," *J. Phys. Conf. Ser.*, vol. 1779, no. 1, 2021, doi: 10.1088/1742-6596/1779/1/012025.

[13] Z. Ardi, R. D. Febriani, I. Ifdil, and A. Afdal, "Android 'karirKu' Software Development for Exploration of Career Trends based on Personality Types," *J. Phys. Conf. Ser.*, vol. 1339, no. 1, 2019, doi: 10.1088/1742-6596/1339/1/012123.