

Development of Bowling Career Media to Improve Students' Understanding toward Career Exploration

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Abstract

This study aims to develop bowling career media to improve students' understanding of career exploration. The development was based on using the Borg and Gall development model adopted up to the 6th stage. Ten students from grade X of SMA Negeri 1 Bantul selected the subject using a purposive sampling technique. The instrument covered expert validation sheets, career exploration tests, and questionnaires for students. The data were analyzed quantitatively and qualitatively. Based on the expert validation result, the feasibility of the product reached a score of 89.4 with great glory. The product trial results showed that the student response value of 90.6 with an outstanding category and the product's effectiveness showed an average increase between the pre-test and post-test scores. The experimental activities had a significant positive effect. Overall, bowling career media are considered feasible and effective to improve students' understanding of career exploration.

Abstrak

Penelitian ini bertujuan untuk mengembangkan media karir bowling untuk meningkatkan pemahaman siswa tentang eksplorasi karir. Pengembangan tersebut didasarkan pada penggunaan model pengembangan Borg and Gall yang diadopsi hingga tahap ke-6. Sepuluh siswa kelas X SMA Negeri 1 Bantul memilih subjek dengan teknik purposive sampling. Instrumen yang digunakan meliputi lembar validasi ahli, tes eksplorasi karir, dan angket untuk siswa. Data dianalisis secara kuantitatif dan kualitatif. Berdasarkan hasil validasi ahli, kelayakan produk mencapai skor 89,4 dengan sangat membanggakan. Hasil uji coba produk menunjukkan nilai respon siswa sebesar 90,6 dengan kategori sangat baik dan keefektifan produk menunjukkan peningkatan rata-rata antara nilai pretest dan posttest. Kegiatan eksperimen memiliki pengaruh positif yang signifikan. Secara keseluruhan, media karir bowling dinilai layak dan efektif untuk meningkatkan pemahaman siswa tentang eksplorasi karir.

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INTRODUCTION

Guidance and counseling are an integrated part of the education system in general; the goal is to help maximize the development and alleviate problems experienced by students in all service areas, one of which is career services. Career guidance and counseling services aim to accommodate students' aspirations, exploration, development, and career decision-making at every level of education (Permendikbud No. 111, 2014).

Students at the high school education level are in the exploration stage, marked by combining various information and making career decisions. Career exploration is a process of collecting and analyzing information about oneself and information about careers (Lim & Lee, 2019). Career exploration is an essential process for adolescents to develop and direct individuals to a suitable job (Lee et al., 2016). Career exploration has a goal so that individuals can sort out various kinds of information about themselves and their environment to make choices that match their characteristics (Purwanta, 2012).

Career exploration occurs during adolescence and early adulthood, during which individuals learn about themselves, the world of work and make some initial decisions about education and career direction. (Brown & Lent, 2013). This shows that adolescence is the beginning of students exploring their respective careers. Sociologically, adolescents as the current generation have high aspirations for educational and work achievements but have difficulty making clear plans to achieve the jobs they want.

The difficulties of achieving education and work in the field give the fact that not all students can easily have the ability to explore careers optimally. The research results in China show that career exploration in self-exploration and exploration of the student's environment is still low due to the lack of career information (Xu et al., 2014). Furthermore, the research results at MAN Cikarang showed that 66,019% of students' career exploration aspects were still in the medium category. (Widyatama & Aslamawati, 2015). The problems in the field are in line with the results of the preliminary study, which can be shown based on the results of data analysis of the Student Developmental Tasks Inventory (ITP) and the effects of interviews by researchers with guidance and counseling teachers and several students at SMA Negeri 1 Bantul for the 2017/2018 academic year.

The Developmental Task Inventory (ITP) analysis results show that developing students' insight and career preparation is low or below the average TP of 6.13%. Furthermore, the results of an interview with one of the guidance and counseling teachers stated that the lack of students' understanding of the importance of career exploration had an impact on students' considerations in choosing a particular field of interest that they decided during class X, students also experienced confusion when asked to select the type of career for their future. Meanwhile, several students stated that they were confused when determining specialization fields that matched their future career choices because of the lack of career information. In addition to these problems, the limitations of guidance and counseling teachers in applying varied service methods and the lack of skills to develop various innovative media are obstacles and obstacles realized by guidance and counseling teachers. So far, they tend to apply lecture and discussion methods that seem monotonous and rarely innovate guidance and counseling media to attract students' interest. So that students' knowledge of career information is not optimal.

Several factors can be the cause of inhibition of students in exploring careers, namely, internal factors and external factors. Internal factors are in the form of academic achievement and genetics. Meanwhile, external factors are family demands for change, individual learning experiences, social and cultural needs, and other factors related to career life (Gladding, 2012). In addition, the ability of personal career exploration can also be influenced by the relationship between social support and individual beliefs to make career decisions. Appropriate social support will encourage unique career exploration (Rossallina & Salim, 2019).

The presentation shows that high school students still experience career problems. If this continues, it is feared that it will hamper students exploring their careers optimally and deterring students' career development tasks later. Based on these conditions, it is necessary to positively and significantly affect students' understanding of career exploration. These efforts can be developing interesting, creative, and innovative guidance and counseling media in a media bowling career.

Bowling career media is one type of interactive media in the form of a simulation game tool adapted from the original form of a bowling ball. The essential characteristic of interactive media groups can regulate interactions between students, such as games. The use of games can provide students with an experience of something happening around their environment (Astuti et al., 2013). Career games can also be used in various educational levels and age categories, from preschoolers to higher education (Sushkova et al., 2019). Use career games can equip students with the knowledge and problem-solving skills and self-assessment in making career decisions in the future.

The bowling career media can be used as an alternative in career guidance services because of its flexible nature in various direct learning situations. Using this media, students understand multiple career concepts and information needed by students by career exploration aspects. This media has several advantages that characterize it, namely, (1) the components and service materials presented are unique, exciting, and educational so that they can motivate, involve activeness, and foster students' creativity to explore their careers; (2) easy to use, practical and harmless so that it does not require intensive supervision; (3) relatively affordable and durable prices; (4) the service material presented can be modified as needed. The weaknesses of this media are, (1) the number of media user players is limited, so it is necessary to increase the number of media if a large number of players uses it; (2) requires a particular place, flat and spacious; (3) it can lead to boredom if players wait for their turn too long, so good time management is needed from players and facilitators. Based on these advantages and disadvantages, the bowling career media becomes an exciting and essential focus to be developed so that this development research has the aim of producing guidance and counseling media in the career field, namely in the form of a bowling career media which is expected to be able to increase students' understanding of career exploration and can make service activities more interesting, fun and effective.

METHODS

This type of research uses research and development through the use of the Borg and Gall model. There are ten stages of research and development, namely (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revision; (6) product trial; (7) product revision; (8) trial use; (9) product revision; (10) mass products (Sugiyono, 2012). In this study, only development was carried out up to the 6th stage, namely, product trials based on consideration of the situation, conditions, and limitations of researchers in the field.

The trial subjects were ten class X SMA Negeri 1 Bantul in the 2017/2018 academic year. Determining the number of product trial subjects was based on the maximum number of bowling career media used in a group guidance service using simulation game techniques. The subject selection technique is determined using purposive sampling: taking samples from a data source by considering one thing. The considerations for choosing the subject are, (1) students aged 15-17 years who have a low level of understanding of career exploration; (2) male and female students of class X; (3) willing to work in groups and cooperative.

The type of research data produced is quantitative and qualitative research data. Quantitative data were obtained from each expert's assessment of the feasibility of the product and the scores of the pre-test and post-test results of the product effectiveness test activities. Meanwhile, qualitative data was obtained through input in criticism and suggestions for revision from each expert.

The research instruments used are, (1) expert observation sheets, used to validate guidance and counseling service experts, media experts, and material experts on the feasibility of the product; (2) the career exploration understanding test instrument consists of 32 valid and reliable multiple-

choice questions, which are used to measure the level of students' understanding of career exploration; (3) student response questionnaire.

Qualitative and quantitative data analysis techniques were used in this study. Qualitative data analysis using the Spradley model was obtained from expert data during validation. The assessment is given as information material related to criticism, suggestions, and input used as considerations for revisions. Meanwhile, quantitative data analysis was obtained from expert product feasibility scores, student responses to the media, and product effectiveness test data using the one-group pretest-posttest design technique.

FINDINGS AND DISCUSSION

The developed media consists of various main components accompanied by their respective functions, namely, (1) a guide book, which is used as a guide to the use of media and contains material on career exploration; (2) bowling cards, consisting of a collection of cards containing questions, statements, and orders by the topic of the material regarding career exploration; (3) line bowling, used as a game area which is likened to a student's career journey; (4) bowling pins consist of a collection of pins and bowling balls, used as a target for card acquisition and student point acquisition, which is likened to a student's career goal; (5) game box, used to store all media components. Overall this media was developed through six stages of development.

Potential and problem stages

At this stage, an analysis of needs and issues in the field is carried out. In this activity, the researchers distributed a questionnaire on student needs for career service media, analyzed developmental task inventory data on aspects of career insight and preparation that showed low levels, conducted interviews with guidance and counseling teachers and students regarding the lack of student career exploration.

Data collection stage

Researchers look for and collect all the data needed as material for product design to overcome problems in the field. In addition, researchers also conduct literature studies that support and are relevant to the product being developed.

Product design stage

Researchers carried out two main activities, namely, planning and product design development. In planning activities, researchers determine media design, determine media components, formulate goals in stages, formulate material on career exploration presented in the media, formulate procedures for using media, and prepare identification of activities to test the feasibility of the developed media design. While in product design development activities, researchers compile and design components in bowling career media, namely, (1) guide book; designed in B5 size made of 230-gram ivory paper; (2) bowling cards, designed in the form of pins made of 250-gram ivory paper; (3) line bowling, designed measuring 3 x 1 meter made of Flexi; (4) bowling pins, designed to resemble the original appearance of bowling pins and balls with stickers attached; and (5) game box, designed to measure 45 x 38 x 30 cm, made of plastic. All components are designed with attractive looks and colors.

Expert validation stage

At this stage, evaluating product feasibility is carried out by media experts, material experts, guidance, and counseling service experts. In table 1, the results of the validation test are presented. Namely, the media expert validation test results showed 51 out of 60 ideal scores and obtained a final score of 85.0 in the outstanding category with several inputs. Furthermore, the material expert validation test results showed a score of 71 out of 76 ideal scores. They obtained a final score of 93.4 in the outstanding category with several inputs. At the same time, the validation test results of guidance and counseling services showed a score of 36 out of 40 ideal scores and obtained a final

score of 90.0 in the outstanding category with several inputs. The results of the expert validation test received an average value of 89.4 in the exceptional category. The bowling career media was declared eligible to be tested with revisions according to input.

Design revision stage

At this stage, design improvements are made based on the assessment accompanied by input in the form of criticism and suggestions from each expert. Several things need to be improved, namely, (1) media experts, in this test, the researcher improved the appearance of the font on the cover and the use of foreign language terms in the contents of the guide book, changed the word "guideline" to "guide," improved the appearance of the background color on each content of the guide book pages, as well as adding pictures of career-related characters; (2) material experts, in this test the researchers made improvements and added sub-materials regarding self-potential, intelligence, values and achievements; (3) guidance and counseling service experts, in this test the researchers added steps and game rules to the bowling career media. The revised design is then made into an actual product in the form of a bowling career media as the final product from design improvements based on expert validation.

Product testing phase

The initial trial was carried out by simulating the use of the product, followed by a bit of problem of the product to 10 subjects to test the product's effectiveness. Filling out the response questionnaire to the media is also carried out at this stage. Testing the efficacy of this product begins with giving a pre-test, then continues with the use of the product; after that, it ends with sharing a post-test. The results of student responses to the media in table 2 show a positive response with an average of 90.6 in the outstanding category. The pre-test and post-test results in table 3 show an increase in understanding of career exploration with an average increase of 10.9 points or 99%. At the pre-test, the intermediate knowledge of the subject was 11 points, while at the post-test, the average understanding of the matter was 21.9 points. To clarify the data, the scores of the pre-test and post-test results can be seen visually in Figure 1. The pre-test and post-test scores Then, the product's effectiveness was tested by analyzing experimental data in the form of a paired sample test assisted by the SPSS (Statistical Package for the Social Sciences) application. The calculations in table 3 obtained $t = 15.43$ and $df = 9$ with a value of Sig. (2-tailed) of $0.000 < 0.05$, so it can be said that there is a significant difference before and after the development of bowling career media. Overall, the study of the final product of the bowling career media was declared feasible and effective to be used as a service medium in the career field, significantly increasing students' understanding of career exploration.

Table 1. Expert Validation Test Results

No	The aspect of Validation Test	Ideal Score	Actual Score	Final score	Category
1	Media Expert Test	60	51	85,0	Very good
2	Material Expert Test	76	71	93,4	Very good
3	Guidance and Counseling Service Expert Test	40	36	90,0	Very good
Average				89,4	Very good

Table 2. Results of Student Responses to Media

No	Aspect	Ideal Score	Actual Score I	Final score	Category
1	Media can foster student interest in services	40	37	92,5	Very good
2	Media can reduce student boredom towards services	40	37	92,5	Very good
3	Appropriateness of the language used	40	35	87,5	Very good
4	Ease of understanding the material presented	40	38	95,0	Very good
5	Ease of learning information independently	40	35	87,5	Very good
6	Media provides opportunities for interaction between students	40	34	85,0	Very good
7	Media has creative value	40	37	92,5	Very good
8	Ease of use of media	40	36	90,0	Very good
9	The benefits of media for students	40	37	92,5	Very good
Average				90,6	Very good

Table 3. Pre-test and Post-test Scores of Students' Career Exploration Understanding

No Subject	<i>Pre-test</i>		<i>Posttest</i>		<i>Gain Score</i>
	Score	Category	Score	Category	
1	12	Low	26	Very high	14
2	10	Low	22	High	12
3	11	Low	22	High	11
4	12	Low	24	High	12
5	9	Low	20	High	11
6	11	Low	23	High	12
7	12	Low	20	High	8
8	11	Low	24	High	13
9	12	Low	19	High	7
10	10	Low	19	High	9
Mean	11		21,9		10,9

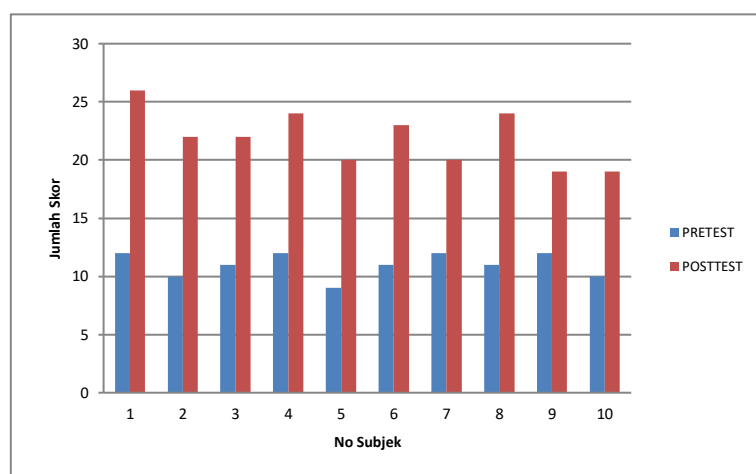


Figure 1. Diagram of Pre-test and Post-test Results Scores

Table 3. Analysis of Paired Sample Test Data

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest	-							
	–								
	Posttest	10,90000	2,23358	,70632	-12,49781	-9,30219	-15,432	9	,000

The bowling career media results from the development of guidance and counseling media, which is feasible and effective to improve students' understanding of career exploration. Bowling career media is one type of interactive media in the form of a simulation game tool in guidance and counseling services that can grow and regulate student interactions in group dynamics. The most crucial characteristic in the interactive media group is that students are not limited to paying attention to an object or media but are also required to interact with each other and actively involve users' responses during guidance and counseling services (Putri & Lapriyadi, 2020).

In terms of material coverage, bowling career media is equipped with various materials adapted to consider materials or studies discussed in guidance and counseling service activities. Therefore, the completeness of the material's content is an important part that needs to be considered in media development (Risqiyain & Purwanta, 2019). The entirety of the information provided will affect the understanding and insight of students to prepare for their careers in entering the desired type of work (Tas'adi & Sisrazeni, 2017). In addition, the support of material content that is by the needs is also one of the requirements for the feasibility of a media (Fitria et al., 2017). The completeness of the material in the game media can bridge the gap between game content and the details of the material presented (Marklund & Taylor, 2016).

In terms of media and guidance and counseling services, bowling career media has an attractive design, easy to use, durable, as needed, encouraging students to interact with each other and increase student creativity. With creative innovation, it will produce new and more efficient things. The bowling career media as a game medium has a goal that focuses on increasing understanding of career exploration but has a plan about guidance and counseling services, including training students' abilities independently, training collaboration in groups, and fostering student activity and creativity. Career games also aim to facilitate and equip teenagers with several valuable skills for their future careers in a modern and creative way in finding business ideas. In adolescence, students begin to express their seriousness about the future and pay great attention to various job opportunities (Savickas, 2012).

Previous findings showed that the development of game media in picture-guessing games increased students' career exploration (Harsantik, 2014). These findings have differences in terms of the variety of media developed by researchers and have similarities with the results in this study which showed that game media increased students' understanding of career exploration. Various career information is presented in the press, such as the type of work, the skills needed, and the types of school activities that support job skills. Thus the game media in career services can facilitate students to gain new knowledge about the career world.

The previous findings also showed that the development of the quartet card media as a medium for student career exploration was declared feasible and very well used for students (Ayriza et al., 2017). These findings have differences in the variety of media developed by researchers and have similarities with the results in this study, which can be shown based on the scope of career information content presented in the media, which is developed based on Holland RIASEC career theory. With Holland's career interest category, students can explore their careers (Vijaya, 2011). Holland's career information model is used to develop career information that can be explicitly

conveyed to understand it effortlessly. Obtaining sufficient career information for students can be used for their daily needs to live their lives effectively (Muyana, 2017).

Furthermore, other findings also show that games in career guidance can stimulate motivation between players to collaborate and reflect on career goals (Chiang et al., 2011). Games driven by pedagogical aspects, accompanied by exciting and interactive play mechanisms, will increase motivation, engagement, and participation in learning and provide helpful scaffolding in improving education and awareness in thinking about learning options and career decisions. (Dunwell et al., 2013).

Several previous findings show that various types and variations of game media are essential to developing to facilitate guidance and counseling teachers in conveying service messages so that the learning process and objectives are carried out effectively. Games are considered great potential because they can train something and positively affect the learning process (Noemí & Máximo, 2014). The career game is also an element from outside the individual, fundamentally based on the idea that various individual aspects strongly influence an individual's life, including education and career decisions (Osipow, 1983). Games are phenomenological practices because they engage the players' emotions, providing meaningful experiences and opportunities for self-expression (Brennan, 2019).

Various previous findings have supported the conclusions of this study which showed that different types and variations of career game media were effectively used and had a positive impact on achieving guidance and counseling services, significantly increasing understanding of career exploration. A broad sense of career exploration will support self-understanding, knowledge of the career environment, and skills between the two. Knowledge of student career exploration can undoubtedly be obtained from guidance and counseling teachers through information and career guidance services (Hermawan & Farozin, 2018). This understanding can be seen in students' independence in choosing careers, such as confidence in making decisions, sense interests, and understanding various career choices (Risnasari & Basuki, 2020). Career exploration can provide students with the knowledge, career understanding, and career perceptions (Ferrari et al., 2015). Thus, students will increase their interest in learning and account for academic knowledge to achieve their careers. Students will learn various career information to prepare themselves early about the skills needed to face the world of work.

CONCLUSION

This development research produces a product in the form of bowling career media. Bowling career media is one type of interactive media in creative and innovative simulation game tools. Overall, the bowling career media was declared feasible and effective as a career field service media, significantly increasing students' understanding of career exploration. This product can provide students with career understanding and prepare them early with the skills needed.

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