Development of Learning Tools for Career Guidance Courses Based on Universal Design for Learning (UDL) for Counseling Guidance Students FIP UNIMED

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Abstract. Universal design for learning (UDL) is a learning model that combines the use of digital materials and is implemented into the learning process to give all students the opportunity to learn. Universal design for learning is designed to increase access and reduce barriers to learning. UDL is designed as learning materials and activities to follow learning objectives as individual achievements with different levels in their abilities to see, hear, speak, act, read, write, understand language, attend, organize, involve and membership in learning groups. This modeling is carried out by lecturers so that learning activities become more focused. This research aims to develop and obtain learning tools for career counseling guidance courses that are valid, practical and effective. The learning tools developed are in the form of Semester Learning Plans (RPS), career counseling textbooks. The development of the learning tools follows Thiagarajan's 4D Model development procedure which consists of four stages, namely defining, designing, developing and disseminating. However, in this research, distribution has not yet been carried out so the result is a final prototype of the learning tool that is ready to be distributed.

Keywords: Development of Learning Tools, Universal Design for Learning (UDL), Counseling Guidance

1 Introduction

Education is the government's effort to educate the next generation. Without education, a country will not be able to cultivate its abundant natural resources. As a result, a country can only be said to be advanced if it prioritizes education. Height and discipline support this[1] We are all witnessing rapid shifts in social and economic structures. This shift was caused by technological advances, which resulted in shifts in various social stages in the history of life, one of which was the transformation of energy resources[1]. In the digital era, technological advances have caused major changes in various aspects of human life, including education. One of the results is how the learning process develops with more and more focus on the use of technology as a tool. However, digital limitations, lack of technological knowledge, and limited resources are some of the obstacles that must be overcome so that learning technology can be maximized. As a result, in order for the learning process to be effective and in line with

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the needs of the world of work in the future, lecturers must master learning technology in the class.

In addition, technology allows lecturers to use various learning media, such as animation, video and infographics, to explain abstract concepts in career guidance courses. Additionally, technology enables blended learning, e-learning, and app-based self-paced learning, so students can learn in the style and pace they want. By incorporating technology into the career guidance course lecture process, it is hoped that students will not only understand career theories and concepts as a whole, but will also be able to use technology to plan their professional future. This is in accordance with the goals of education, namely creating superior human resources who are able to compete in the era of society 5.0 and industrial revolution 4.0. In the guidance and counseling program, there are career guidance services that can help individuals plan their careers and make decisions about themselves. Individuals must understand themselves, including understanding their abilities, potential, talents, interests, personality and achievements [2]. Therefore, in the career guidance course, knowledge is provided about data and facts about education in higher education, fields of work, and personal social development in future counselor candidates. Which in turn can give individuals the ability to organize and plan their own lives. Every individual wants a bright future, and according to their dreams. Careful career planning is needed to achieve career goals. Career choices are very important for students to plan a career that suits their interests. This is because the high level of individual interest in choosing a career can be an important factor in future competition.

Career guidance aims to help individuals make appropriate and responsible career decisions, so that the career chosen is in accordance with their interests, abilities and talents. According to the Ministry of National Education, the objectives of guidance and counseling related to career aspects are as follows: 1) Increase self-understanding of abilities, interests and work-related work; 2) Knowing about the world of work and information that helps improve career competence; 3) Have a positive attitude towards the world of work; 4) Understand the relevance of learning competencies; 5) Creating a career identity; and 6) have the ability to plan for the future, 7) Can form career patterns, 8) Know skills, abilities and interests, and 9) Have the ability to make career decisions [3]. Systematic, data-based career guidance helps people achieve career goals and overcome obstacles. To meet these needs, the Career Guidance course provides a theoretical and practical basis for students to understand career dynamics and how to help other people, especially clients or students, in planning and developing their career paths. Career guidance teaches students basic concepts such as career exploration, career planning, and career decision making. In addition, career development theories such as those of Donald Super, John Holland, & Frank Parsons are an important framework for understanding how people choose and pursue appropriate professions. In addition, this course teaches the ability to apply career evaluation techniques, counseling interviews, and career tests, which can help people in various workplaces and educational levels[3].

With increasing awareness of the importance of career development, career guidance has become an important component in forming a generation that is ready to face global competition. Therefore, this course is expected to provide an in-depth understanding of career guidance, so that it can help students and the wider community in improving the quality of competitive and superior human resources. Technology plays an important role in increasing the effectiveness, efficiency and attractiveness of the learning process which has been conventional, but has become more interesting after technological developments have begun to be integrated into the learning process, both for lecturers and students in higher education,

especially in career guidance courses. Furthermore, although technology has many benefits, implementation difficulties should not be overlooked [4].

Counseling is an important part of education and is essential for facing digital transformation. Technology and innovation such as the Internet of Things (IoT), blockchain, artificial intelligence (AI), and robots have made human life easier as life develops. With the rapid development of modern technology, lecturers can develop new methods to increase student enthusiasm during learning. This can help achieve learning goals [5]. The only way lecturers can be considered professional in the learning process is by using information technology during the learning process. Modern education should help students understand their potential, understand career options, and plan for their professional future. Learning technology can help education become more interactive, more accessible, and better suited to the requirements of the digital generation. Therefore, Universal Design Learning (UDL) will be used to discuss career guidance course trends in the Society 5.0 era.

Universal Design for Learning (UDL) is an educational framework that focuses on ensuring that all students have equal access. UDL also focuses on creating learning environments that are flexible and adaptable to various needs. This method emphasizes the idea that learning should be planned to support diversity rather than simply adapting to needs when obstacles arise. Lecturers can use UDL to create learning experiences that are accessible, understandable, and applicable to all students, including those with special learning styles or needs. In modern learning, UDL is very relevant because of the many needs of students in terms of physical, cognitive, cultural and social abilities. By utilizing new learning methods and technology, UDL not only increases accessibility but also improves student participation and learning outcomes. However, educators do not understand UDL concepts well, do not have enough resources, and are unwilling to change. Consequently, to integrate UDL into the education system, educators must be trained, and supporting infrastructure must be provided. By using UDL, the learning process can become more inclusive, responsive and effective. This makes it possible to create an educational environment that truly values diversity and maximizes the potential of each student. The basic framework of UDL comes from the idea of brain development which is designed to produce products for use by all learners with various conditions, involving creativity so as to provide various ways for students to obtain information, express work results, and increase involvement[6].

The Universal Learning Design (UDL) method is an approach intended to support student diversity, create flexible learning environments, and enable each student to maximize their potential. The principles of UDL are representation, Action and Expression, and Engagement. The principle of representation emphasizes that information should be presented in a variety of formats so that all students, including those with special needs, can access it. The principle of action and expression, on the other hand, emphasizes that students should be encouraged to convey their knowledge through various creative media, such as written and oral. The principle of involvement, on the other hand, emphasizes that students must be motivated to convey knowledge by actively participating in the learning process [7].

There are many benefits to implementing UDL in the classroom. This includes supporting diverse learning styles, increasing the accessibility of teaching materials, and encouraging students to learn on their own. This method is in line with advances in educational technology, and various digital tools can be used to facilitate UDL-based learning. However, there are several problems with implementing UDL in the classroom. Lecturers usually require special training to understand and integrate UDL principles into the curriculum. In addition, the availability of adequate facilities and infrastructure, such as accessibility, is very important for the successful implementation of UDL. Therefore, it is very important for educators to adopt

and develop UDL-based learning strategies so that every student has a complete, enjoyable and effective learning experience. These strategies not only help students achieve their academic goals, but also create an equitable educational environment[8]

2 Research Methode

This research is a type of research and development (R&D), according to Sugiyono [9] [10] . R&D is a research method used to create certain products and test how effective they are. This research was designed using the 4D (four-D) development model, which was developed by [10]. This model consists of four main stages: definition (defining), design (designing), development (development), and deployment (deployment). However, the research only carried out three stages, and the spread will be studied again at a later date. The following is the research flow, which can be explained in the following picture;

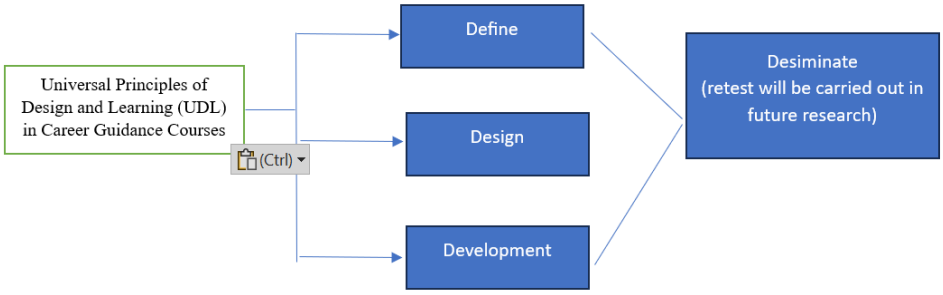

Fig. 1. Application of UDL Principles in the Learning Process

However, the research only carried out three stages, and the spread will be studied again at a later date. BK FIP UNIMED students in their third semester at Medan State University on Jln. Willem Iskandar Medan is the subject of this research. This research uses material expert instruments, media expert instruments, and user instruments to collect data. For the analysis, data collected from the assessment instrument was analyzed using descriptive statistics. In this research, data analysis is used to determine the effectiveness and feasibility of UDL principles in the learning process. The feasibility of UDL principles in the learning process can be determined by analyzing data obtained from assessments carried out by a reviewer group, consisting of students and lecturers [5].

3 Result and Discussion

3.1 Overview of the Implementation of Universal Design Principles for Learning in Career Guidance Courses

Definition Stage (Define): Needs analysis is the first stage in research. At this definition stage, the facts and requirements for the use of technology in career guidance courses in the BK FIP UNIMED department are discussed. This stage consists of five main steps, namely:

a. Front-end Analysis. This analysis analyzes the conditions in the field. To find out whether career guidance courses require the use of learning technology by distributing instruments (questionnaires) to students via Google Form. The significance of offering material in several formats so that all students can access it both before and during learning was one of the questions posed to the responders. Using learning technology that facilitates the accessibility of instructional materials, accommodates a variety of learning styles, and promotes self-directed learning is another way to keep students engaged and motivated throughout the learning process. In order to ensure that every student has an inclusive, joyful, and productive learning experience, it is crucial that educators embrace and create UDL-based teaching practices. These tactics support the development of an equitable learning environment in addition to helping students meet their academic objectives. The following are the outcomes of the tool that students were given:

1. About 10% of the students say that there are still no easily accessible learning resources available, such as interactive e-modules, videos, and digital learning models. Instead, traditional teaching methods are used to increase student participation in the learning process.
2. About 20% of students say that the learning process is not very engaging.
3. About 15% of students state that the use of technology in the learning process only comes from using infocus.
4. Approximately 55% of students believe that innovation is a useful tool in the learning process in the classroom, helping to improve student performance in the learning process. This can be observed by the diagram below.

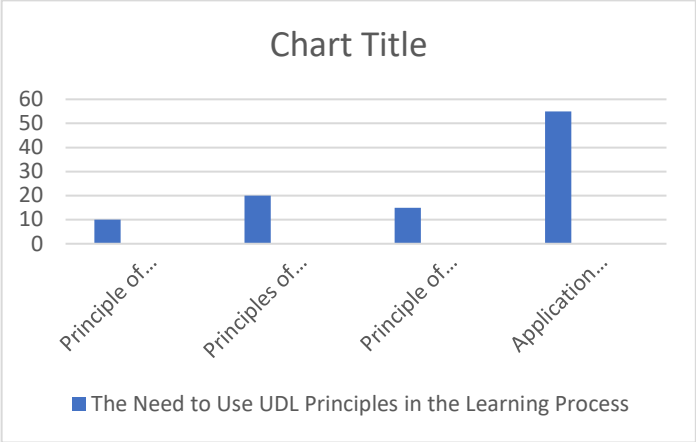

Fig. 2. The need for using UDL principles in the learning process

The results of the needs analysis show that the principle of using the Universal Design Learning (UDL) approach in the learning process for career guidance courses is very necessary with a presentation of 55%. This is because the aim of implementing the UDL approach is to create a flexible learning environment, support diversity, and enable all students to achieve their best potential. In this course, students will learn about the mentoring process that helps people discover their interests, potential, and career goals. They will also learn how to manage their career development systematically and consistently. By learning this, students can not only

prepare themselves for their own careers, but they can also help others, like themselves, in an effective way. career planning and development.

b. Task Analysis: This research concentrates on creating digital-based teaching materials that allow students to access learning materials anytime and anywhere. These digital-based career guidance teaching materials can also provide opportunities for students to learn independently and increase their participation during learning.
c. Concept Analysis: Concept analysis is carried out to identify the important and main components that will be evaluated. For example, the RPS evaluation is based on four literacies (data, human, digital and language) to ensure that digital material is prepared synchronously. Apart from that, evaluation of learning videos based on Universal Design Learning (UDL) was also carried out for use in the learning process.
d. Evaluation of Learning Goals (Determining Instructional Goals): Users of teaching materials for career advisory courses that incorporate the UDL paradigm are the target audience for this learning objective. The following are the goals: 1) Students can select the learning materials they want to use; 2) Learning is accessible to them at any time and from any location; and 3) Students can select their own creative learning activities, such writing and presentations, to enhance their education.

3.2 Media Planning

Teaching materials for career guidance are developed by combining the principles of applying UDL using other media. Image media, video learning, audio, practice questions, internet, computers, desktops and surveys are a combination of these media. To develop career guidance teaching materials, the selected UDL application format includes RPS which has been integrated with the four literacies, teaching materials can be accessed via e-modules or learning videos which are prepared based on UDL principles, and career guidance teaching materials are designed with various features. Data includes images, videos, infographics, practice questions, and surveys. Each career guidance material will have an explanation of the material and a learning video. After the material is finished, there will be practice questions where students can answer multiple choice questions and test essays related to career guidance material. On the survey page, students can fill out an instrument as an assessment tool after they read career guidance material that has been prepared using digital technology.

3.3 Material Development Stage

Career guidance materials created via the internet are evaluated by material experts and media experts. This is done to determine whether the career guidance material is appropriate or not. Table 1 below shows the validation results:

Table 1. Material Expert Validation Results on Application of UDL Principles Career Counseling Guidance Course

Assessment Indicators	Value
Suitability of the material with graduates' achievements and learning outcomes in career counseling guidance courses	3,5
The module discussion is in accordance with the application of Universal Learning Design principles	3
The level of difficulty of the material is in accordance with student characteristics	3,5
The systematics of writing teaching materials is clear, coherent, complete and easy to understand	3,5
Average	**3.4**

Based on this table, the average validation calculation for initial prototype teaching material products reached 3.4%. This calculation can refer to the interval table for determining the level of validity of teaching material products (RPS and Teaching Modules) and is in the good category, which means that the teaching material products can be used in the learning process. In addition, media experts carry out validity to find out whether the Universal Design Learning (UDL) model has been included in the four digital literacies. Table 2 below shows the validation assessment of the final prototype product after revision.

Table 2. Shows the Results of Media Expert Validation Regarding the Application of UDL Principles in Career Counseling Guidance Courses

Assessment Indicators	Value
Suitability of the material with graduates' achievements and learning outcomes in career counseling guidance courses	3,7
The module discussion is in accordance with the application of Universal Learning Design principles	3,7
The level of difficulty of the material is in accordance with student characteristics	3,7
The systematics of writing teaching materials is clear, coherent, complete and easy to understand	3,7
Average	**3.7**

Table 2 shows that the average validation calculation has a percentage of 3.7 and is in the very good category; The media validator assessment shows that the career guidance material developed has been integrated with UDL learning principles, as shown by the integration of the material into four literacies.

3.4 Deployment Stage

The publication will be replicated at the deployment stage to assess the efficacy of Universal Design Learning (UDL) principles in the subsequent procedure. UDL principles are applied in the creation of learning resources for Career Guidance courses. The outcomes of the exercise data recapitulation are used to draw broad inferences about instructional materials. The usefulness of creating educational resources for current career counseling is assessed using the study's findings. An effective learning process is influenced by the teacher's skill, the

students' motivation to learn, and the caliber of the resources employed. In the Career Guidance course, learning tools are used strategically to support the dissemination of materials, the application of theories, and the development of student skills. This is especially important given the importance of career guidance to prepare employees for an increasingly competitive and dynamic workforce.

Career guidance classes assist students identify their interests, potential, and career aspirations by providing them with practical approaches, mentoring strategies, and basic theories. However, the increasingly varied learning demands of students are frequently not met by content that is exclusively presented in traditional modes, such lectures or debates. Therefore, creative, technology-based, and interactive learning methods are required to make learning more meaningful.

Learning modules, interactive media, student workbooks, and evaluation tools that support learning objectives should all be included in the learning resources for these courses. Career development theory, for instance, can be included into learning modules to improve students' conceptual understanding. However, digital learning resources like apps, career simulations, and animated films might improve students' comprehension of subjects.

To ensure that all students can access and utilize the material optimally, the development of learning tools should also consider the principles of Universal Design for Learning (UDL). This is important considering the various learning styles and needs of students. Flexible and inclusive learning tools can meet this need.

Learning Career Guidance courses can be done more efficiently, effectively, and interestingly by using well-designed learning tools. In addition, this tool can help students understand and apply career guidance concepts, as well as prepare them to face the challenges of the world of work confidently and competently.

4 Conclusion

Learning resources in the Career Guidance course are developed using the Universal Design for Learning (UDL) principles. By offering a range of representation, display, and teaching techniques, Universal Design for Learning (UDL) enables students with different needs, abilities, and learning styles to participate actively in the learning process. UDL principles contribute to the development of a flexible learning environment in which students can select the learning style that best meets their needs without sacrificing the required level of proficiency. Furthermore, it has been demonstrated that UDL-based learning resources improve student engagement, motivation, and comprehension of Career Guidance content, all of which contribute to the achievement of the best possible learning outcomes. In order to promote a more accessible and high-quality education, learning resources founded on UDL principles are therefore applicable to other courses in addition to Career Guidance courses.

Applying the four literacy-based learning model and Universal Design Learning (UDL) principles promotes student engagement and collaborative learning. The foundation of learning activities is project-based learning. Due to curriculum innovation and learning design, students must investigate, evaluate, draw conclusions, resolve issues, and produce creative goods. Indicators of RPS learning outcomes and the development of CPL and CPMK counseling guidelines were used in this project, which was conducted in the BK Study Program, Faculty of Education.

The purpose of this study is to examine the effectiveness, efficiency, and practicality of the Universal Design for Learning (UDL) approach, which is based on the karir curriculum and involves teaching four digital literacy skills to BK FIP UNIMED students. According to this study, it is hoped that the environment will be able to implement the Universal Design for Learning (UDL) principle, which is integrated into the four literacy stages of the educational process.

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