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INTEGRATION OF OPENAI ARTIFICIAL INTELLIGENCE BASED CAREER INFORMATION ON THE LMS PLATFORM IN AN EFFORT TO DEVELOP VOCATIONAL IDENTITY

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Abstract

This study explores the integration of OpenAI-based artificial intelligence (AI) within Learning Management Systems (LMS) to support vocational identity development. LMS platforms, traditionally used for managing educational content, now play a broader role in career guidance, talent identification, and student interest analysis-critical elements for developing vocational identity. As AI integration in educational technology grows, this study demonstrates a structured approach for embedding OpenAI's API into an LMS to deliver personalized career recommendations. The integration process includes creating a project API key, user interfaces for career input, an RTF (Role, Task, Format) framework for prompt generation, and a feedback loop where AI responses are stored and displayed to users. This method allows educators to access student career insights, enabling more tailored support. Unlike existing literature, which lacks practical guidance, this study presents actionable steps, code examples, and an evaluation framework for effective AI integration in LMS environments. The findings suggest that AI-powered LMS systems could enhance student engagement and self-awareness by offering individualized vocational pathways, thus making education more adaptive to career needs. Ethical implications, including data privacy and algorithmic bias, are also considered to ensure responsible AI use in educational settings.

Keywords: Application programming interface, Career guidance, LMS, OpenAI, Vocational identity.

1. Introduction

The development of vocational identity is a complex process influenced by personal, social, and educational factors that shape individuals' integration of self-concept with professional roles [1]. Key components in this process include career commitment, adaptability, and personal satisfaction, which collectively enable individuals to navigate the transition from school to work and relate educational experiences to career goals [2-4]. Establishing a robust vocational identity enhances this transition by linking one's education to meaningful career aspirations, ultimately contributing to a sense of purpose and direction [5]. As institutions increasingly recognize their role in this development, they are called to provide not only work skills but also career guidance, fostering an environment where students can explore their vocational interests and strengthen their professional identity [6-8].

In the digital age, Learning Management Systems (LMS) have emerged as a powerful tool for supporting this identity-building process. Beyond organizing and delivering educational content, LMS platforms are now equipped to facilitate decision-making, counselling, and career path recommendations-an evolution that has transformed them into holistic educational management tools [9-11]. With the rise of artificial intelligence (AI) in education, LMS platforms can now incorporate intelligent systems that simulate instructor-led guidance, potentially increasing the personalization and effectiveness of career advice provided to students [12, 13]. Specifically, OpenAI's Application Programming Interface (API) presents an opportunity to integrate AI into LMS platforms, enhancing adaptive learning and aligning learning experiences with student career goals [14-16].

However, while research increasingly addresses AI's role in educational settings, few studies provide practical, step-by-step guidance for integrating AI into LMS platforms [17-19]. This study aims to bridge that gap by offering a comprehensive approach for embedding OpenAI's API into an LMS to support vocational identity development. Through this integration, we present methods that educators can use to personalize learning experiences and gather data-driven insights into student career interests. By doing so, the study aspires to not only enrich the literature on AI in education but also facilitate the practical application of AI in shaping vocational identity, addressing both opportunities and challenges, such as privacy concerns and potential AI biases [20-29].

2. Methods

In this study, the procedural steps used are as shown in Fig. 1.

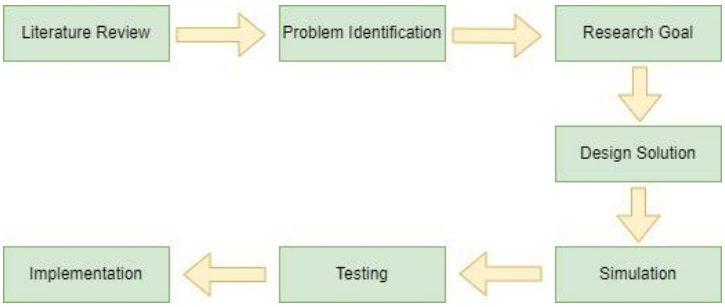


Fig. 1. Research steps.

The explanation of each step in the research framework can be explained as follows.

2.1. Literature review

The main purpose of a literature review is to establish the current state of knowledge on a particular topic, identify gaps, conflicts, or inconsistencies in the existing literature, and determine the need for further research. Some of the main references referred to in this study are Supriyanto, et al. [21] in the study "Application expert system career guidance for students", Lee, et al. [22] in the study "Longitudinal Associations Between Vocational Identity Process and Career Goals", Onyeluka et al. [7] in "Optimizing Vocational Identity Status and Job Search Behavior via Career - Related Practical Skills Training in Electrical / Electronic Technology Education, Batool and Ghayas [23] in "Process of career identity formation among adolescents: components and factors", Turda [24] in "The Relationship Between Personality Factors, Vocational Identity and Career Decision-Making Self-Efficacy".

2.2. Problem identification

This study begins with the importance of forming vocational identity, which is influenced by various factors, one of which is awareness of career planning and preparation. Identification of career interests and information is a crucial step because this information can be used as a reference for teachers in designing and implementing a learning process that is more relevant and in accordance with student needs [25, 26]. One solution to support interest identification and provide more accurate career information is to integrate artificial intelligence technology such as OpenAI into the LMS. This integration allows teachers and educational institutions to utilize AI's capabilities in analysing student data more personally and supporting the development of a stronger vocational identity.

2.3. Determining research objectives

The focus of this research is on the integration of OpenAI with LMS. Several features in LMS are also built to collect and display career interest information for teachers.

2.4. Designing solutions

Solution design based on the research focus is carried out using the LMS integration method with OpenAI using API. The implementation of the use of the API code is applied to the LMS program code that has been created previously.

2.5. Simulation

Based on the solution design that has been created, a simulation is carried out to test the integrated LMS application and evaluate whether the design is in accordance with the expected goals.

2.6. Testing

This process involves testing the application with end users or stakeholders to ensure that the application meets the requirements and expectations. This testing is usually done in a real-world environment to simulate actual usage scenarios.

2.7. Implementation

System implementation involves deploying the developed software into a live operational environment which includes a series of activities that transform the application from the development stage to active use by end users.

3. Results and Discussion

This study aims to implement LMS integration with artificial intelligence through the OpenAI API. An overview of the system can be seen in Fig. 2. The integration steps are as follows:

- Create a project API key on the page https://platform.openai.com.
- Add an interface for users on the LMS platform for interest and industry input.
- Create a prompt generator using the RTF (Role, Task, Format) framework.
- Make a request to OpenAI based on the previous prompt. An example of a request code can be seen in Fig. 3(A).
- Save the response to the database.
- Display the response to the user.

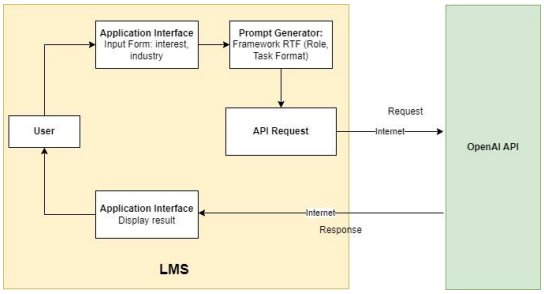


Fig. 2. System overview.

Through this integration, learners can obtain information about careers they are interested in, as well as recommendations for skills that need to be developed to achieve those interests on the LMS platform. Users input skills or interests as shown in Fig. 4(A). The system will then create a prompt based on the RTF framework based on the input entered by the user, for example a prompt created like:

"You are a professional career coach. I have expertise and interest in [expertise]. I am interested in exploring the [industry] field of work. What career advice can you give? Explain each suggestion with relevant explanations and how I should prepare for that career?"

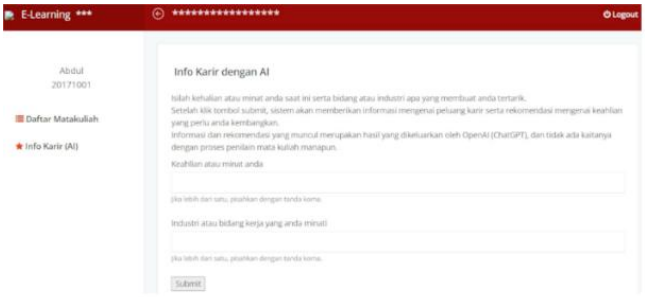
The prompt will then be sent to the OpenAI API server following the predetermined format standard as shown in Fig. 3(A). If the request is successful, the API server will provide a response as shown in Fig. 3(B), and then the system will save it to the database and display the response on the information and recommendation page as shown in Fig. 4(B).

On the other hand, teachers can also understand students' career interests better based on the data already stored in the database, so that they can provide more appropriate insight, guidance, and treatment according to career interests [27].

A. Request

B. Response

Fig. 3. Request and response code example.



A. Input Form

B. Result

Fig. 4. Input form and result.

4. Conclusion

This study highlights the potential of integrating OpenAI's AI capabilities into Learning Management Systems (LMS) to support students' vocational identity development. By evolving the LMS from a content tool into a personalized career guidance platform, the integration provides customized career recommendations aligned with students' interests and expertise. The findings suggest that AI-enhanced LMS platforms can improve student engagement and vocational clarity, encouraging exploration of career paths suited to individual skills. This approach supports a responsive, student-centered learning environment that actively contributes to professional identity formation. Future research could refine this model by evaluating AI's impact on vocational guidance and addressing ethical considerations such as data privacy and bias, further positioning LMS platforms as essential in bridging education and career readiness.

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