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ENHANCING CAREER GUIDANCE SYSTEMS THROUGH DIGITAL PLATFORMS IN SECONDARY EDUCATION

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Abstract

The rapid expansion of the digital economy has significantly transformed labor market demands, particularly increasing the need for ICT-related skills and professions. This study investigates the enhancement of career guidance systems in secondary education through the integration of digital platforms. The research proposes an indicator-based framework to evaluate students' readiness and orientation toward IT careers. Using mixed research methods, including surveys and experimental implementation, the study identifies key factors influencing effective career guidance. The findings demonstrate that digital platforms significantly improve students' awareness, engagement, and decision-making regarding ICT careers. A conceptual model and measurable indicators are developed to support data-driven educational strategies.

Keywords: Digital platforms, career guidance, ICT education, digital economy, secondary education, indicators.

Introduction

The rapid development of the digital economy has transformed labor markets, increasing demand for ICT-related professions. Traditional career guidance methods in schools are no longer sufficient. Modern approaches require integration of digital platforms such as LMS, online courses, and AI-based tools. Over the past decade, numerous studies have emphasized the transformative role of digital tools in modern education systems. Digital platforms, including Learning Management Systems (LMS), Massive Open Online Courses

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(MOOCs), and specialized career guidance applications, have become central to facilitating effective teaching and learning processes. One of the key benefits of these platforms is the ability to provide **personalized learning experiences**, allowing students to engage with content at their own pace, revisit challenging materials, and receive feedback tailored to their performance. Research by Chen et al. (2020) demonstrates that adaptive digital platforms can significantly improve student engagement and knowledge retention by accommodating individual learning styles.

In addition to personalization, digital platforms provide **access to global knowledge resources**, bridging geographical and informational gaps. Students can explore a wide range of subjects, learn about emerging technologies, and understand international labor market trends, which is particularly important in rapidly evolving fields such as information and communication technologies (ICT). According to UNESCO (2022), access to diverse digital resources enhances students' capacity to make informed career choices and develop competencies aligned with the demands of the digital economy.

Another critical feature of digital platforms is **real-time tracking of student progress**. These systems allow educators to monitor learning activities, engagement patterns, and skill acquisition continuously. Learning analytics, powered by digital platforms, provide insights into students' strengths and weaknesses, enabling timely interventions and support. For instance, Li and Wong (2021) found that real-time analytics in digital learning environments improved both academic performance and self-regulated learning behaviors among secondary school students.

Specific to career guidance, recent studies indicate that **digital technologies significantly enhance students' motivation, career awareness, and decision-making skills**. Platforms equipped with interactive career maps, simulation tools, and AI-based recommendations enable students to explore potential career paths in ICT and other digital sectors more effectively. Research by Smith et al. (2021) suggests that students who engage with digital career guidance tools demonstrate higher levels of interest in STEM and ICT careers compared to those receiving traditional counseling alone. Furthermore, these technologies support informed decision-making by providing data-driven insights into labor market trends, skill requirements, and employment opportunities.

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Despite these advancements, the literature identifies several critical gaps that limit the full potential of digital platforms in career guidance. First, there is a lack of **unified evaluation indicators** to measure the effectiveness of these platforms systematically.

While various studies report improvements in engagement or career awareness, standardized metrics for assessing outcomes such as career readiness, skill acquisition, and long-term impact on employment choices are largely absent. Second, existing research often lacks **structured implementation models**, which hinders the scalability and sustainability of digital career guidance interventions. Many initiatives remain pilot projects or localized solutions without integration into national or institutional education policies. Finally, there is limited **empirical validation in school contexts**, particularly at the secondary education level. Although higher education and corporate training environments have been studied extensively, empirical studies evaluating the application of digital platforms for career guidance in secondary schools remain scarce (OECD, 2021; World Bank, 2022). In summary, while digital tools offer substantial potential to transform career guidance in education, there is a pressing need for comprehensive, data-driven frameworks that integrate measurable indicators, structured implementation strategies, and robust empirical validation to maximize their effectiveness. This study employs a mixed-method research design, combining quantitative and qualitative approaches to comprehensively evaluate the effectiveness of digital platforms in career guidance.

The quantitative component involved a structured survey of secondary school students (grades 8–11) to assess their awareness, engagement, and interest in ICT-related careers. The survey included multiple-choice, Likert-scale, and ranking questions, designed to capture both objective and subjective measures of student outcomes. The qualitative component consisted of experimental implementation of digital platforms, including Moodle, Google Classroom, and Coursera, integrated into students' daily learning activities. Observations, focus group discussions, and teacher interviews were conducted to capture contextual insights, student experiences, and challenges encountered during implementation. This combination allows triangulation of data, enhancing the reliability and validity of the study findings (Creswell, 2014). To evaluate the performance and

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effectiveness of the digital career guidance system, five primary indicators were identified based on existing literature and international best practices:

Table 1

Indicator code	Indicator name	Description	Measurement method
I1	Digital Awareness	Level of student awareness regarding ICT careers	Percentage of students reporting knowledge of ICT career paths
I2	Platform Usage Rate	Frequency and consistency of students' interaction with digital platforms	Login frequency, session duration, module completion rates
I3	Career Interest Growth	Change in student interest toward IT and digital economy-related professions	Pre- and post-survey scores on interest scale
I4	Skill Development Index	Acquisition and improvement of relevant digital and ICT skills	Standardized test scores, practical task completion, project assessments
I5	Career Decision Readiness	Degree of preparedness for making informed career decisions	Composite index combining awareness, interest, and skills assessment

These indicators provide a structured framework for monitoring and evaluating the system's impact on students' career guidance outcomes. They also allow educators to quantify progress, identify areas requiring intervention, and refine the digital guidance strategy accordingly. The results of this study indicate that digital platforms can serve as an effective tool for career guidance among secondary school students. The mixed-methods approach employed in this research yielded the following key findings:

Digital Awareness – Students demonstrated a substantial understanding of ICT-related careers and the digital economy. Survey results further indicated an increase in students' knowledge about various career paths.

Platform Usage Rate – Regular engagement with platforms such as Moodle, Google Classroom, and Coursera, including module completion and active participation, was observed. This contributed to a more individualized and effective learning experience.

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Career Interest Growth – Throughout the study, students' interest in IT and digital economy-related professions increased significantly. Comparisons of pre- and post-survey results clearly reflected these changes.

Skill Development Index – Students' completion of practical assignments, projects, and standardized tests confirmed the development and enhancement of relevant digital and ICT skills.

Career Decision Readiness – In addition to acquiring knowledge and skills, students demonstrated improved preparedness to make informed decisions regarding their future career paths.

Overall, the study demonstrates that the integrated use of digital platforms effectively supports students' career guidance, enhances their interest, develops competencies, and assists them in making informed choices about their future professional trajectories. Moreover, the monitoring and evaluation framework based on these indicators provides schools with a structured mechanism to further refine and optimize their digital career guidance strategies.

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