Social media as a tool for career guidance in higher education

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Abstract

Social media has revolutionised the landscape of career guidance in higher education, affording unprecedented opportunities for students, educators, and career advisers to connect, share insights, and access real-time professional development resources. This article explores the transformative impact of social media on career guidance practices, with a particular focus on its role in delivering personalised support, facilitating networking with industry professionals, and exposing students to diverse career paths through interactive platforms. The methodology section outlines a systematic approach to leveraging social media for effective career guidance, incorporating a three-tiered system of engagement, monitoring, and evaluation. An experimental study investigates the effectiveness of implementing social media-based career guidance under specific pedagogical conditions. The results confirm the hypothesis that social media can significantly enhance career guidance outcomes when supported by appropriate strategies and frameworks. This research highlights the potential of social media as a powerful tool for empowering students in their career development journey and underscores the importance of integrating digital technologies into modern career guidance practices.

Keywords

social media, career guidance, higher education, professional development, networking, digital technologies, pedagogical conditions, student empowerment

1. Introduction

Social media has revolutionised career guidance in higher education, offering unprecedented opportunities for students, educators, and career counsellors to connect, share insights, and access real-time professional development resources. This digital transformation enables universities to deliver personalised career support, facilitate networking with industry professionals, and provide students with valuable exposure to diverse career paths through interactive platforms.

The transformation of social networks from mere communication tools into educational resources has been remarkable over the past two decades. During the post-COVID era, social media has become increasingly prominent in higher education, with educators and students utilising these platforms not only for information gathering but also for focused educational purposes.

According to the Digital 2021: Global Overview Report, 4.2 billion people worldwide – approximately half of the global population – use social networks for business, news, marketing, or education [1].

Social media platforms serve as Internet resources populated by society, including Wikipedia, YouTube, Facebook, and others. The fundamental concept behind social media is based on Web 2.0, where content creation isn't limited to site owners but is open to all users [2].

Kaplan and Haenlein [3] provide a definition of social media as Internet-based applications built on Web 2.0's ideological and technological foundations, enabling user-generated content and exchange (table 1). This content encompasses text, video, images, podcasts, and various multimedia communications, with prominent examples including Facebook, Twitter (X), LinkedIn, Google+, and messaging platforms [3].

Table 1
Traditional vs modern career guidance approaches in higher education.

Traditional approaches	Modern approaches
Outdoor advertising	University website communication
Media advertising (radio, newspapers, TV)	Social media engagement
Open days for prospective students	Messenger communication
Roundtables, open lectures	Online job portal presence
Participation in city events	Open access Internet materials
Direct sales	Alumni network testimonials

Career guidance history traces back to France and Belgium in the late 19th and early 20th centuries. However, concepts of professional-personal compatibility existed even in ancient times, with Plato emphasising the importance of matching natural abilities to work roles [4].

The modern understanding of career guidance emerged during the rapid industrial development of the late 19th century. Parsons [5], established three crucial factors for career choice: self-understanding of abilities and limitations, knowledge of job requirements and conditions, and rational correlation between these factors [5].

Contemporary career guidance incorporates both traditional and innovative approaches through social media platforms. These digital tools provide several advantages: accessibility to career information, qualification requirements, salary levels, and development opportunities (table 2). Mobile applications offer convenience for students to access guidance resources anywhere, anytime, while video and webinar formats enable online consultations and training sessions [6].

Table 2
Benefits of implementing digital career guidance.

Benefit category	Impact
Academic performance	Improved grades and test scores
Career readiness	Enhanced career planning skills
Social development	Better interpersonal relationships
Personal growth	Increased self-awareness
Technology integration	Improved digital literacy
Educational access	Wider reach to resources

Holland [7] suggests that individuals seek environments where they can utilise their skills and express their attitudes and values. This approach emphasises that people are attracted to professions matching their personal characteristics and contextual factors [7]. The accuracy of self-knowledge and career information serves as crucial prerequisites for career decision-making [8].

Modern career guidance programmes should prepare individuals for constant workplace changes (figure 1). The career decision-making process includes five interconnected phases: initiation, exploration, decision-making, preparation, and implementation [9]. These aspects focus on establishing effective counselling relationships, determining current career planning motivation, and making career planning relevant to students' lives.
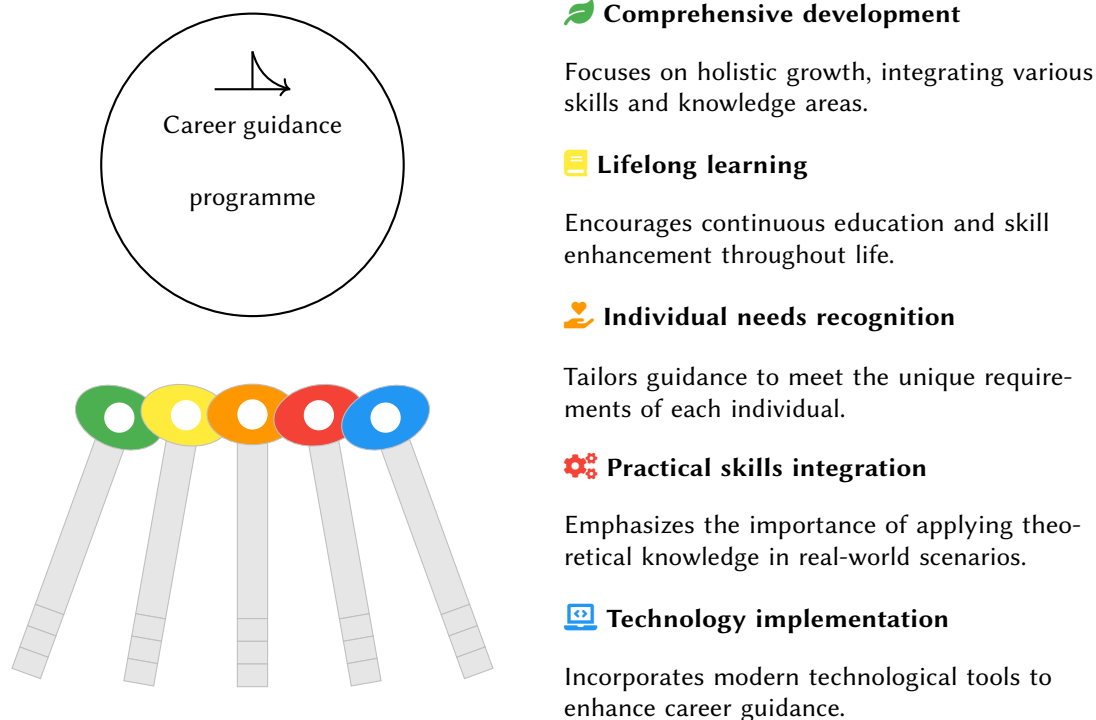
Comprehensive development

Focuses on holistic growth, integrating various skills and knowledge areas.

Lifelong learning

Encourages continuous education and skill enhancement throughout life.

Individual needs recognition

Tailors guidance to meet the unique requirements of each individual.

Practical skills integration

Emphasizes the importance of applying theoretical knowledge in real-world scenarios.

Technology implementation

Incorporates modern technological tools to enhance career guidance.

Figure 1: Career guidance programme principles.

Yermolayeva [10] examines how social networks can be used as a modern tool in career guidance counseling, specifically focused on future applicants in the information sector.

Latifah et al. [11] noted that career guidance counsellors must be technologically competent, particularly in implementing social media in today's digital era. Social media serves as a support tool for career guidance services. This study examines stages of career guidance using social media through literature analysis of national and international journals. School career guidance introduces opportunities, identifies interests, aids decision-making, and facilitates workplace adaptation. Social media functions as an unlimited information field for students' social interaction and targeted information delivery. Career guidance requires active counsellor involvement. The critical aspect is helping students establish themselves and make meaningful career decisions. Counsellors can implement social media as interactive tools in school career guidance services [12].

Alim [13] shows that UAE youth feel underprepared for work, indicating a need for improved career guidance. While social media offers expanded opportunities for career guidance delivery, UAE universities primarily utilize online career planning systems rather than interactive social media platforms. This limitation stems from content moderation pressures and strict UAE privacy laws governing social media use. For effective integration of social media in career guidance, universities must first understand students' preferences regarding delivery methods [13].

Social media platforms and mobile learning technologies enable continuous career guidance and professional development, making educational resources accessible anytime and anywhere [14, 15].

Social media platforms serve as effective channels for delivering career guidance content and facilitating professional networking among students and potential employers [16].

The implementation of automated systems and social media tools creates an integrated environment for effective career guidance and professional development tracking in higher education [17].

Integration of social media with career guidance tools creates an interactive environment that significantly enhances student engagement in career exploration and decision-making [18].

The contemporary Ukrainian approach defines career guidance as a system of scientifically-based pedagogical measures aimed at preparing young people for career choices, emphasising the crucial role

of personal characteristics, interests, and abilities in this process [19].

2. Methodology of using social media for career guidance of professional pre-higher education students

Social media platforms have become instrumental tools in modern career guidance practices, offering unprecedented opportunities for educational institutions to connect with and guide students through their professional development journey. This methodology section explores the systematic approach to leveraging social media platforms for effective career guidance of students in professional pre-higher education programmes.

The integration of social media into career guidance represents a paradigm shift from traditional counselling methods to a more dynamic, interactive approach. This methodology builds upon the Social Career Cognitive Theory, which emphasises the role of self-efficacy, outcome expectations, and personal goals in career development. When applied to social media, this theoretical framework provides a structure for understanding how digital interactions can influence career choices and professional identity formation (figure 2).
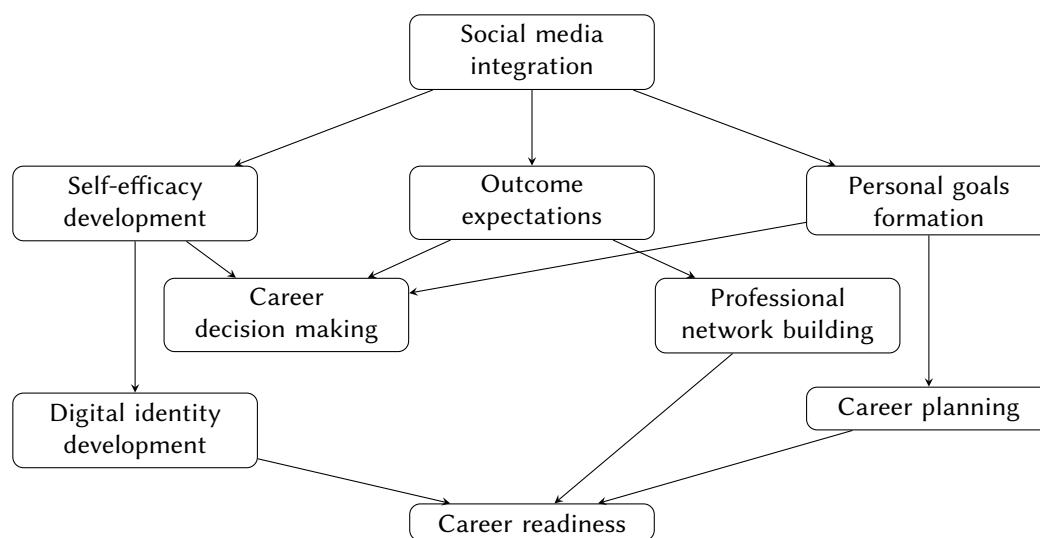

Figure 2: Social media career guidance theoretical framework.

The implementation of social media for career guidance follows a structured approach that encompasses multiple platforms and engagement strategies (figure 3). The methodology employs a three-tiered system of engagement, monitoring, and evaluation to ensure effective career guidance delivery.

Implementation steps of methodology of using social media for career guidance of professional pre-higher education students is shown in figure 4:

The methodology focuses on creating an interactive, informative environment where students can explore career options, connect with professionals, and receive personalized guidance through social media platforms.

The selection of appropriate social media platforms is crucial for effective career guidance. Each platform serves distinct purposes and reaches different audience segments. The methodology incorporates a comprehensive content strategy tailored to each platform's unique characteristics and user behaviour patterns.

The bar chart visualisation presents a comparative analysis of four major social media platforms (LinkedIn, Instagram, Facebook, and Twitter (X)) across three crucial performance indicators (figure 5).

The engagement rate, represented by purple bars, demonstrates the percentage of active interaction with career guidance content. LinkedIn leads with a 5.2% engagement rate, followed closely by Instagram at 4.8%. Facebook shows a moderate engagement rate of 3.9%, while Twitter (X) demonstrates the lowest
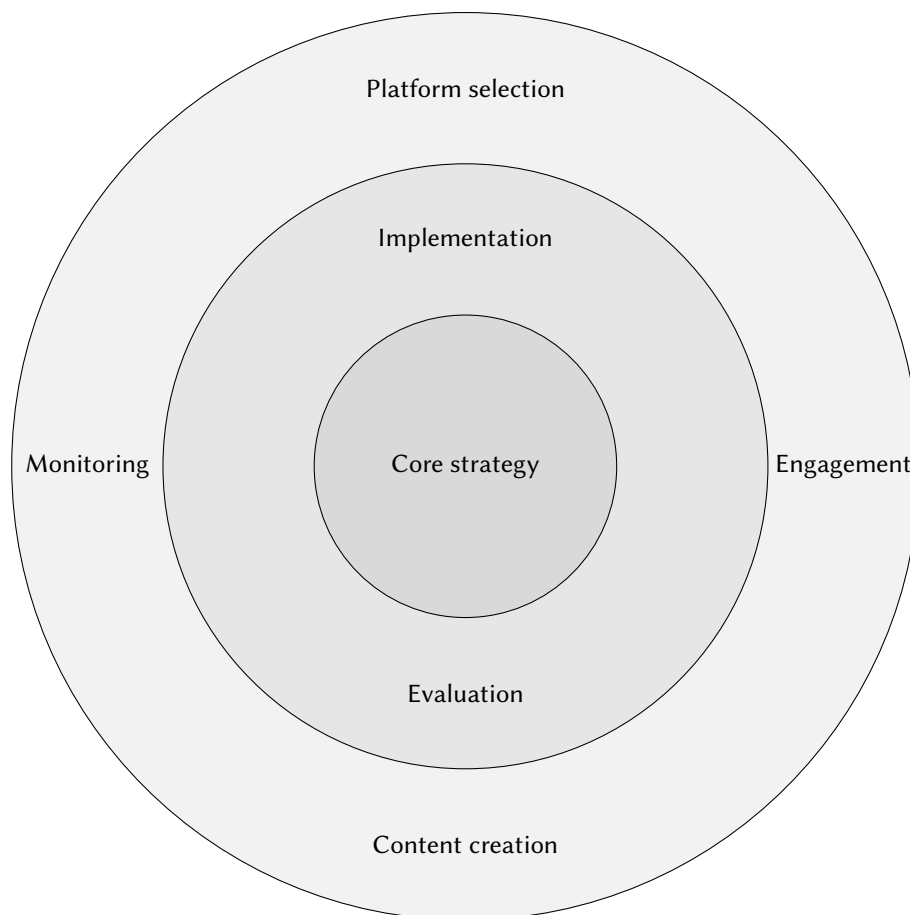
Figure 3: Social media implementation strategy.

engagement at 2.7%. This pattern suggests that professional-oriented platforms like LinkedIn generate more meaningful career-related interactions.

Career outcomes, depicted by green bars, reflect the percentage of successful career-related results achieved through each platform. LinkedIn again demonstrates superior performance with 68% positive career outcomes, while Facebook follows with 52%. Instagram achieves 45% career outcomes, and Twitter (X) shows 31%. This metric encompasses various successes such as job placements, internship securing, and professional networking achievements.

Student adoption, shown in yellow bars, indicates the percentage of students actively using each platform for career development purposes. Instagram leads this metric with 89% adoption, followed by Facebook at 82% and LinkedIn at 75%. Twitter (X) shows the lowest adoption rate at 58%. This reveals an interesting dynamic where platforms with higher student adoption don't necessarily correlate with better career outcomes.

The methodology incorporates various engagement mechanisms designed to facilitate meaningful interactions between career guidance professionals and students. These mechanisms are structured to promote both passive and active engagement, ensuring comprehensive career support. Content delivery follows a carefully planned schedule that aligns with the academic calendar and key career decision points. The methodology establishes optimal posting times and frequencies based on platform analytics and student engagement patterns.

The effectiveness of social media-based career guidance is continuously monitored through various metrics and evaluation methods. This systematic approach ensures that the methodology remains responsive to student needs and adapts to changing career landscape requirements.

Performance trends analysis (figure 6), the line graph visualisation tracks three key performance indicators over an academic year from September to April, showing the evolution of career guidance
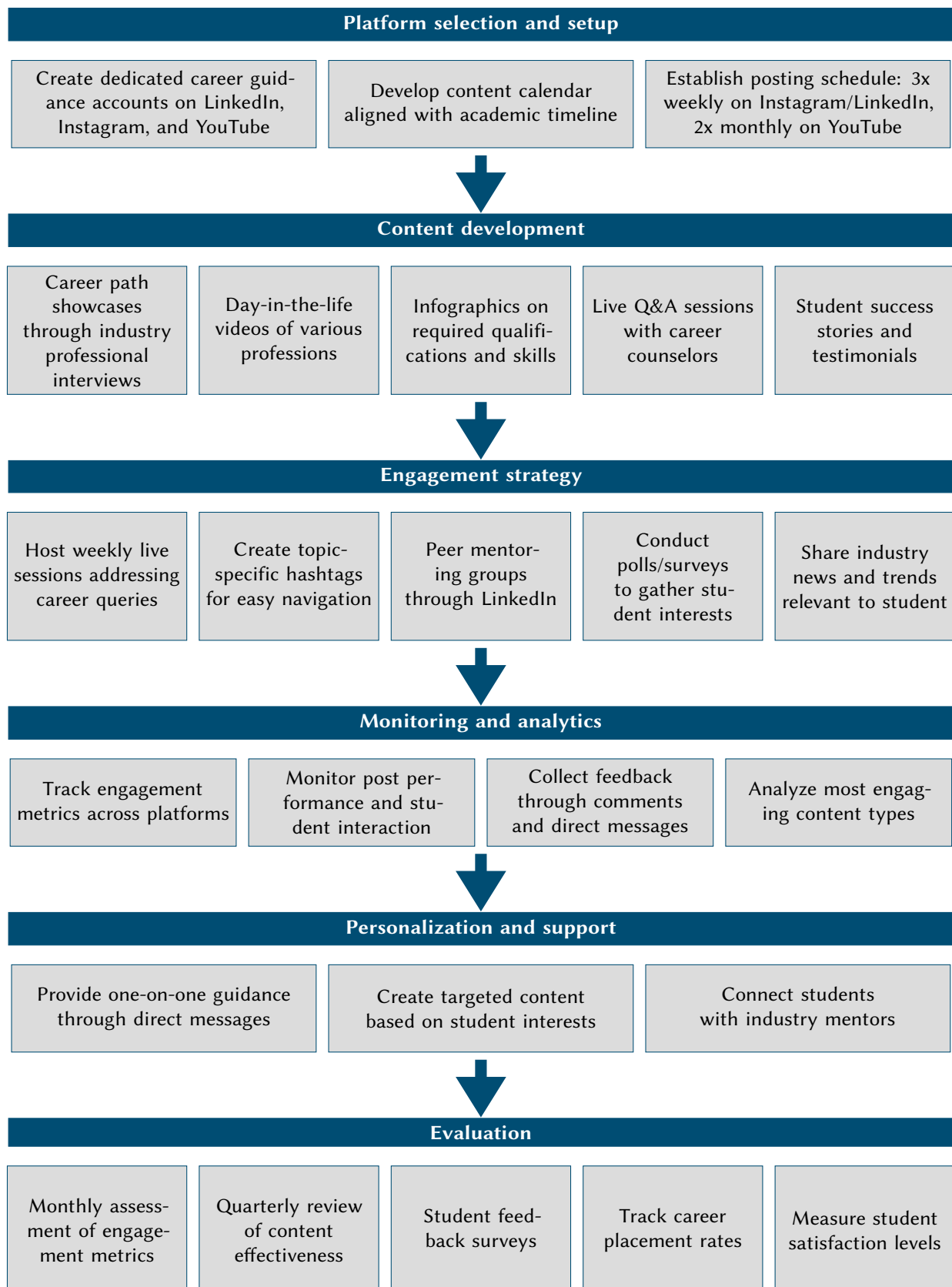
Platform selection and setup

Create dedicated career guidance accounts on LinkedIn, Instagram, and YouTube	Develop content calendar aligned with academic timeline	Establish posting schedule: 3x weekly on Instagram/LinkedIn, 2x monthly on YouTube

Content development

Career path showcases through industry professional interviews	Day-in-the-life videos of various professions	Infographics on required qualifications and skills	Live Q&A sessions with career counselors	Student success stories and testimonials

Engagement strategy

Host weekly live sessions addressing career queries	Create topic-specific hashtags for easy navigation	Peer mentoring groups through LinkedIn	Conduct polls/surveys to gather student interests	Share industry news and trends relevant to student

Monitoring and analytics

Track engagement metrics across platforms	Monitor post performance and student interaction	Collect feedback through comments and direct messages	Analyze most engaging content types

Personalization and support

Provide one-on-one guidance through direct messages	Create targeted content based on student interests	Connect students with industry mentors

Evaluation

Monthly assessment of engagement metrics	Quarterly review of content effectiveness	Student feedback surveys	Track career placement rates	Measure student satisfaction levels

Figure 4: Implementation steps of methodology of using social media.
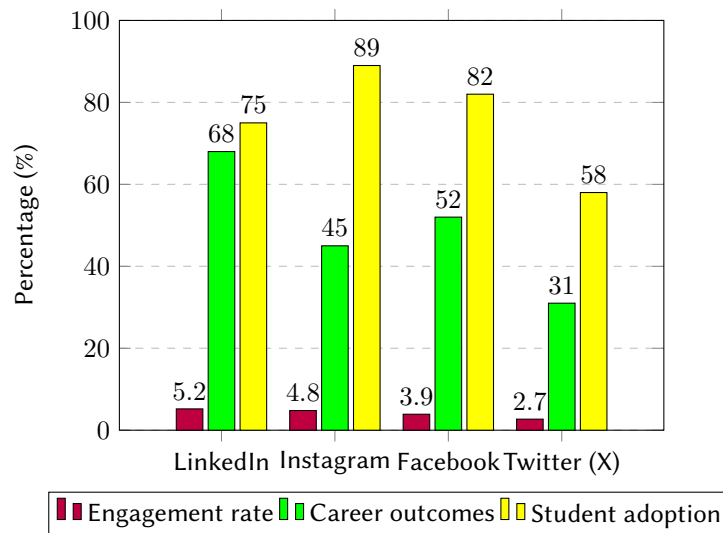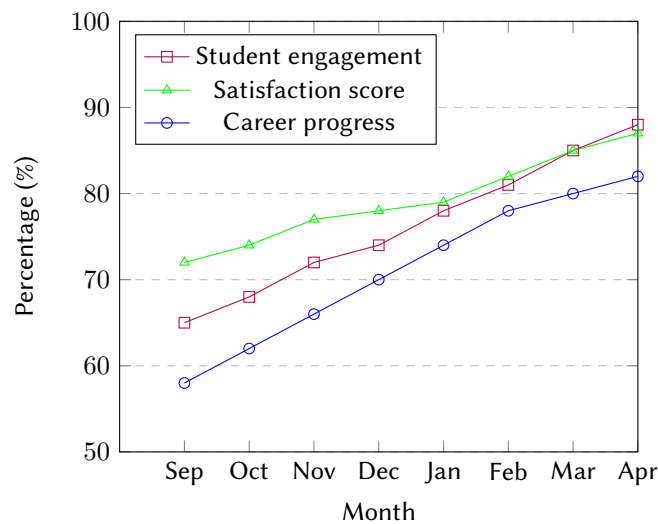
Figure 5: Platform performance metrics.

Figure 6: Performance trends analysis.

effectiveness.

Student engagement (purple line) demonstrates a steady upward trajectory, beginning at 65% in September and reaching 88% by April. This considerable increase of 23 percentage points suggests growing student participation in social media-based career guidance activities throughout the academic year. The steepest increase occurs between January and March, coinciding with typical internship and job search periods.

Satisfaction sScore (green line) begins at 72% in September and rises to 87% by April, showing a 15 percentage point improvement. The trend line shows consistent growth with slight plateaus during December and January, possibly corresponding to holiday periods. The steady increase suggests continuous refinement and improvement of career guidance strategies based on student feedback.

Career progress (blue line) starts at 58% in September and reaches 82% by April, showing the most significant overall growth of 24 percentage points. The metric demonstrates a consistent upward trend, with particularly strong growth between November and January. This period typically aligns with students' career planning and goal-setting activities for the new year.

The intersection of these metrics reveals several key insights:

1. All three metrics show positive growth throughout the academic year, indicating successful implementation of the career guidance strategy.
2. The narrowing gap between all three lines towards April suggests increasing alignment between engagement, satisfaction, and actual career progress.
3. The consistent upward trajectory across all metrics, without significant downturns, indicates sustainable and well-managed programme implementation.
4. The parallel growth patterns suggest successful coordination between different aspects of the career guidance programme, where improvements in engagement translate to better satisfaction and career progress.

These visualisations effectively demonstrate both the immediate impact of platform selection and the long-term effectiveness of the career guidance methodology. The data supports the strategic emphasis on LinkedIn for professional outcomes while maintaining strong presence across platforms to maximise student reach and engagement.

The methodology incorporates comprehensive impact assessment mechanisms to evaluate the effectiveness of social media-based career guidance. This assessment focuses on both quantitative metrics and qualitative feedback from students, employers, and educational institutions.

The impact assessment framework considers multiple dimensions of career guidance success, including student engagement levels, career decision-making confidence, and eventual employment outcomes. Through continuous monitoring and evaluation, the methodology enables evidence-based refinement of career guidance strategies.

The methodology remains flexible and adaptable to accommodate emerging social media platforms and evolving career guidance needs. Regular reviews and updates ensure that the approach remains relevant and effective in supporting students' career development journey. The structured approach, combined with continuous monitoring and evaluation, provides a robust framework for implementing effective career guidance strategies through social media platforms.

3. Experimental study

The aim of our research and experimental work is to confirm the hypothesis that career guidance for students of pre-higher education via social media will be more effective under certain pedagogical conditions:

1. Motivation for independent analysis of existing professions using social media.
2. Familiarising applicants with existing online job search tools.
3. Promoting social media specialties using the example of Instagram.

At each stage of the pedagogical experiment, a set of pedagogical research methods were used, including theoretical analysis of scientific sources and psychological-pedagogical literature, study and generalisation of the experience of university teachers, as well as observations, interviews, and questionnaires (table 3).

The research and experimental work was carried out at the Kryvyi Rih National University. First-year students majoring in Computer Science were involved in the experiment. We conducted a parallel experiment where the first part of group (10 people) was the control group, and the second part (11 people) was the experimental group.

The pedagogical experiment consisted of two stages: ascertaining and formative. The ascertaining stage aimed to determine the current (general) state of the studied phenomenon and its structural elements. At the stage of the ascertaining experiment, we conducted testing and questionnaires to determine the level of motivation for independent analysis of existing professions using social media, the level of familiarisation of applicants with existing online job search tools, and the level of promoting social media specialties using the example of Instagram.

Table 3
Evaluation criteria, indicators and diagnostic methods for studying the psychological and pedagogical conditions for implementing career guidance in distance learning.

Criteria	Indicators	Diagnostic methods
Motivation for independent analysis of existing professions using social media	1. Desire to learn 2. Desire to use social media to analyse existing professions	1. Learning motivation questionnaire (author's modification) 2. "Applicants motivation to use electronic resources for choosing a profession" questionnaire
Familiarising applicants with existing online job search tools	1. Desire to consciously choose a profession 2. ICT competencies in using web search	1. Questionnaire to determine students' areas of professional preferences 2. ICT competency formation level self-assessment map methodology (authors' modification)
Promoting social media specialties using the example of Instagram	1. Inclination towards a certain type of activity 2. Using social media to search for information about educational institutions and specialties	1. MBTI test (Myers-Briggs Type Indicator – developed based on the works of Carl Jung) 2. "Using social media to search for information about educational institutions and specialties" survey (developed by the authors)

The generalised analysis indicates that most students, according to all criteria, are at the middle level. Regarding the results of the control testing, high indicators are characteristic of only two students (about 10%) in the experimental and control groups. The situation with motivation, the level of ICT competencies, and readiness to use electronic resources is similar: only a limited number of students from both groups have a high level of ICT and electronic resources and are ready to use them. It is noted that a high level of motivation to learn is completely absent. The results obtained indicate that the use of social media for career guidance of applicants in higher education institutions only with the help of conventional distance learning methods complicates the achievement of the effectiveness of the introduction of electronic educational resources and, accordingly, a high level of knowledge, skills and abilities of students.

The formative stage of the pedagogical study was aimed at introducing the developed career guidance for students of professional pre-higher education by tools of social media into the educational process.

After the implementation of our methodology, research was conducted again to identify changes according to the defined criteria. Repeated diagnostics were carried out in the control and experimental groups. The summarised results of the formative and ascertaining stages of the study conducted in the experimental group are shown in table 4.

Comparing the two groups, we see insignificant changes in the control group only according to the criteria "Motivation to use electronic resources" (by 10% high level) and "Use of social media to search for information about educational institutions and specialties" (by 10% medium level), while the experimental group showed positive changes according to all criteria (from 9% to 18.2%).

Summarising the results of the pedagogical study, we can conclude that the verification of the psychological and pedagogical conditions for the introduction of career guidance in the context of distance learning into the educational process of university developed by us is quite effective and it is advisable to use it in practice.

Thus, the results of the experiment confirmed the validity of the hypothesis formulated by us.

4. Conclusions

1. The introduction emphasises social media's revolutionary impact on career guidance in higher education, enabling personalised support, industry networking, and exposure to diverse career paths. The shift from communication to educational resources underscores social media's post-COVID prominence. Kaplan and Haenlein's definition highlights user-generated content, while historical

Table 4
Results of the study of the experimental group at the ascertaining and formative stages of the pedagogical study.

Diagnostic methods	Levels	Ascertaining stage		Formative stage	
		Number	%	Number	%
Motivation for learning activities	High	0	0	1	9.1
	Medium	8	72.7	9	81.8
	Low	3	27.3	1	9.1
Motivation to use electronic resources	High	1	9.1	2	18.2
	Medium	9	81.8	9	81.8
	Low	1	9.1	0	0
Diagnosis of inclination towards a certain professional field	High	4	36.4	6	54.5
	Medium	7	63.6	5	45.5
	Low	0	0	0	0
Formation of ICT competence	High	1	9.1	3	27.3
	Medium	9	81.8	8	72.7
	Low	1	9.1	0	0
Use of social media to search for information about educational institutions and specialties	High	1	9.1	2	18.2
	Medium	8	72.7	9	81.8
	Low	2	18.2	0	0

context frames the evolution of career guidance. Contemporary approaches blend traditional and innovative methods, with social media offering accessibility and interactivity. Research reinforces the benefits of comprehensive guidance programmes and technology integration.

2. The methodology outlines a systematic approach to leveraging social media for effective career guidance in professional pre-higher education. Building upon the Social Career Cognitive Theory, it employs a three-tiered system of engagement, monitoring, and evaluation. Platform selection is crucial, with comparative analysis revealing LinkedIn's superior engagement and career outcomes, and Instagram's high student adoption. Continuous monitoring, evaluation, and impact assessment ensure responsiveness to student needs and adaptability to evolving career landscapes. The Performance Trends Analysis demonstrates successful implementation and coordination of the guidance strategy.

3. The experimental study aimed to confirm the effectiveness of social media-based career guidance under specific pedagogical conditions. The ascertaining stage revealed most students at the middle level across all criteria, with limited high indicators. The formative stage introduced the developed methodology, resulting in positive changes across all criteria in the experimental group, ranging from 9% to 18.2%. The study validates the effectiveness of the developed conditions, confirming the hypothesis and highlighting social media's potential for empowering students in their career development journey.

References

[1] Digital Marketing Institute, Social Media: What Countries Use It Most & What Are They Using?, 2021. URL: https://digitalmarketinginstitute.com/blog/social-media-what-countries-use-it-most-and-what-are-they-using.

[2] Y. Bulba, Sotsialni media v suchasnii osviti: svitovi tendentsii [Social media in modern education: world trends], 2012. URL: https://osvita.ua/vnz/high_school/28665/.

[3] A. M. Kaplan, M. Haenlein, Users of the world, unite! The challenges and opportunities of Social Media, Business Horizons 53 (2010) 59–68. doi:`10.1016/j.bushor.2009.09.003`.

[4] Plato, The Republic, 1999. URL: http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.01.0168.

[5] F. Parsons, Choosing a vocation, Gay & Hancock, Ltd., London, 1909. URL: https://dn790003.ca.archive.org/0/items/choosingvocation00parsuoft/choosingvocation00parsuoft.pdf.

[6] F. D'souza, S. Shah, O. Oki, L. Scrivens, J. Guckian, Social media: medical education's double-edged sword, Future Healthcare Journal 8 (2021) e307–e310. doi:`10.7861/fhj.2020-0164`.

[7] J. L. Holland, Making vocational choices: A theory of vocational personalities and work environments, 3 ed., Psychological Assessment Resources, 1992.

[8] B. Hiebert, W. A. Borgen, K. Schober, Career Development: The Role of Guidance and Counselling in Fostering an Increased Range of Educational and Career Alternatives, 2010. URL: https://unevoc.unesco.org/up/Career_Development.pdf.

[9] K. Magnusson, Five Processes of Career Planning. ERIC Digest, 1995. URL: https://eric.ed.gov/?id=ED404581.

[10] G. Yermolayeva, Social networks as a modern tool in career guidance counseling with future applicants of the information sector, State and Regions. Series: Social Communications 2 (2023) 147–152. doi:`10.32840/cpu2219-8741/2023.2(54).18`.

[11] T. F. Latifah, A. Supriyanto, B. Suprihatin, S. J. Kurniawan, Social Media As Support Career Guidance Services, Edukatif: Jurnal Ilmu Pendidikan 4 (2022) 2950–2961. doi:`10.31004/edukatif.v4i2.2473`.

[12] N. O. Ponomarova, Actual problems of professional orientation of pupils on IT-specialty, CTE Workshop Proceedings 4 (2017) 163–167. doi:`10.55056/cte.343`.

[13] S. Alim, Social Media Use in Career Guidance Delivery in Higher Education in the United Arab Emirates: A Literature Review, International Journal of E-Adoption (IJEA) 11 (2019) 25–44. doi:`10.4018/IJEA.2019010103`.

[14] N. Rashevska, V. Tkachuk, Technological conditions of mobile learning at high school, Metallurgical and Mining Industry 3 (2015) 161–164.

[15] V. Tkachuk, Y. Yechkalo, S. Semerikov, M. Kislova, Y. Hladyr, Using Mobile ICT for Online Learning During COVID-19 Lockdown, in: A. Bollin, V. Ermolayev, H. C. Mayr, M. Nikitchenko, A. Spivakovsky, M. Tkachuk, V. Yakovyna, G. Zholtkevych (Eds.), Information and Communication Technologies in Education, Research, and Industrial Applications. ICTERI 2020, volume 1308 of *Communications in Computer and Information Science*, Springer International Publishing, Cham, 2021, pp. 46–67. doi:`10.1007/978-3-030-77592-6_3`.

[16] D. S. Shepiliev, S. O. Semerikov, Y. V. Yechkalo, V. V. Tkachuk, O. M. Markova, Y. O. Modlo, I. S. Mintii, M. M. Mintii, T. V. Selivanova, N. K. Maksyshko, T. A. Vakaliuk, V. V. Osadchyi, R. O. Tarasenko, S. M. Amelina, A. E. Kiv, Development of career guidance quests using WebAR, Journal of Physics: Conference Series 1840 (2021) 012028. doi:`10.1088/1742-6596/1840/1/012028`.

[17] V. Shchokin, V. Tkachuk, Automatization of agglomerative production on the base of application of neuro-fuzzy controlling systems of the bottom level, Metallurgical and Mining Industry 6 (2014) 32–39.

[18] S. J. Papadakis, S. O. Semerikov, Y. V. Yechkalo, V. Y. Velychko, T. A. Vakaliuk, S. M. Amelina, A. V. Iatsyshyn, M. V. Marienko, S. M. Hryshchenko, V. V. Tkachuk, Advancing lifelong learning and professional development through ICT: insights from the 3L-Person 2023 workshop, CEUR Workshop Proceedings 3535 (2023) 1–16.

[19] V. V. Osadchiy, Pedagogical bases of professional consulting of young people by Internet facilities, Dissertation for the degree of candidate of pedagogical sciences on specialty – 13.00.04 - theory and method of professional education, Vinnitsia State Pedagogical university named after Mykhailo Kotsyubunskiy, 2005. URL: https://nrat.ukrintei.ua/searchdoc/0406U000236.