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Review Article

Understanding the significance of e-mentoring and its components for effective program design and development

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Abstract

E-mentoring has played an increasingly pivotal role in supporting students in higher education. It has been widely recognized as an effective approach to addressing potential challenges associated with student drop-out rates and students with poor academic performance. In light of this, this article aims to discuss the importance of e-mentoring and its vital components that contribute to the effectiveness of its design and development process. Drawing on secondary sources, the article begins by highlighting the advantages of the e-mentoring scheme, followed by a discussion of the key aspects of the program, including the recruitment and selection strategies, the roles and responsibilities of mentee and mentor, mentee and mentor matching, mentee and mentor training, and mentoring evaluation. The article concludes with some suggestions for ensuring the effectiveness of e-mentoring schemes in higher education and calls for future research in this area.

Keywords: E-mentoring; mentee; mentor; e-mentoring components; e-mentoring design and development; higher education

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Introduction

The adoption of mentoring schemes in educational settings as an approach to supporting students' learning process and career readiness has significantly increased worldwide (Le et al., in press; Nabi et al., 2024). Due to the fast-evolving technology and global interconnectedness, face-to-face mentoring has evolved into e-mentoring or virtual mentoring, which has been widely implemented (Iqbal, 2020; McCarthy, 2012). E-mentoring, which is also commonly known as online mentoring, virtual mentoring, or tele-mentoring (Kasprisin et al., 2003; McCarthy, 2012), is the practice of communicating between the mentee and mentor through the internet, using smartphones, computers, or other electronic devices (Hamilton & Scandura, 2003; Williams & Kim, 2011). More specifically, e-mentoring is defined as "an adaptable electronically mediated process that can be scaled to fit the needs of the mentees, mentors and host organizations and is unencumbered by time and geographical restrictions" (Chong et al., 2020, p. 205). At present, a number of researchers have conducted research on the possibility of e-mentoring in supporting students in higher education (Ensher et al., 2003; Hamilton & Scandura, 2003; Kuok et al., 2023; Murphy, 2011; Nguyen et al., 2024).

When students move from high school to higher education, they usually face a number of challenges (Fitzpatrick et al., 2021; Le et al., in press; Wilton et al., 2021; Zalaquett & Lopez, 2006). Three key difficulties were identified by previous research, which have an impact on students' aspirations to attend university regardless of how qualified and motivated they are (Immerwahr, 2003; Zalaquett & Lopez, 2006). These included superficial or inadequate information about universities' requirements, limited choices for university selection, and limited supervision from experienced individuals. To address these obstacles, there is a need to receive sufficient support from relevant individuals, including peers, school counselors, instructors, and parents, through initiating the mentoring scheme (Ware & Ramos, 2013; Zalaquett & Lopez, 2006).

In recent years, the emerging mentoring model is perhaps e-mentoring, which is a helpful program to support students' learning both academically and psychologically (Jang et al., 2023; Tinoco-Giraldo et al., 2022). Given the flexibility provided by e-mentoring, both mentees and mentors could conduct the e-mentoring sessions during their time at the university (Mollica & Mitchell,

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2013). Therefore, it could be argued that e-mentoring has a critical role in navigating the transition of students from high schools to colleges or universities.

Although several review articles on e-mentoring schemes were conducted in higher education settings (see Byrnes et al., 2019; Chong et al., 2020; Tinoco-Giraldo et al., 2020), it appeared that none of them predominantly focused on the effective elements for the design and development of e-mentoring in higher education. In particular, Byrnes et al. (2019) reviewed recent practices related to e-mentoring schemes and the key strategies for doctoral students to navigate scientific research, while Tinoco-Giraldo et al.'s (2020) review centered on the key factors enabling successful e-mentoring schemes and how to evaluate e-mentoring schemes. In this sense, there remains a significant research gap regarding the key aspects of effective e-mentoring design and development in higher education. Therefore, this article aims to bridge this gap by examining the significance and components of e-mentoring programs in higher education. This review offers insights into key components, which can be useful for e-mentoring organizers and host higher education institutions to make informed decisions about how to design and develop e-mentoring schemes in higher education. Drawing on secondary data, the article begins by highlighting the advantages of the e-mentoring scheme, followed by examining the components of the design and development of e-mentoring programs, such as the recruitment and selection strategies, the roles and responsibilities of mentee and mentor, mentee and mentor matching, mentee and mentor training, and evaluation of mentoring. It concludes with some suggestions for ensuring the quality of e-mentoring schemes in higher education and calls for future research on the integration of e-mentoring programs in higher education in developing countries, such as Cambodia.

Overview of advantages of e-mentoring

Research has indicated that e-mentoring schemes provide a wide range of support to students, enabling them to gain various benefits (Briscoe, 2019; Hayman et al., 2022; Hudson, 2016; Mollica & Mitchell, 2013; Tinoco-Giraldo et al., 2022). Specifically, e-mentoring is likely to offer students ongoing support and motivation throughout the program, helping them to succeed in their academic journeys (Mollica & Mitchell, 2013), enhancing their sense of confidence and well-being (Briscoe, 2019; Hudson, 2016; Tinoco-Giraldo et al.,

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2022), and accelerating students' retention rates (Collings et al., 2016; Hayman et al., 2022; Tinoco-Giraldo et al., 2020). On the one hand, it has been argued that for mentees to observe their mentors, the mentoring scheme should only be conducted in person (see Evans & Volery, 2001; McCarthy, 2012). Numerous studies, on the other hand, have indicated that e-mentoring can be as effective and beneficial as face-to-face mentoring (de Janasz & Godshalk, 2013; Iqbal, 2020; Pollard & Kumar, 2021). As many studies showed, mentees felt satisfied with e-mentoring and demonstrated positive experiences with peer groups (Broome et al., 2011; Jacobs et al., 2015; Pollard & Kumar, 2021). More notably, a study (n = 30) by Mollica and Mitchell (2013) found that learners were more likely to opt for virtual mentorship than a traditional face-to-face approach. Likewise, a pilot study (n = 31) by Lee et al. (2023) showed that the students felt accepted, satisfied, and feasible with the e-mentoring scheme. The study also highlighted the significance of the suitability and convenience of the e-mentoring scheme being implemented in higher education. Thus, e-mentoring has the potential to get mentees satisfied and provide them with a range of benefits.

Regarding mentors' advantages, existing research has indicated that mentors who joined the e-mentoring schemes also benefited in a wide range of individual, academic, social, and professional ways (Haber-Curran et al., 2017; Hayman et al., 2022; Larose, 2013). For instance, mentors could benefit from mentoring schemes by adopting new ideas into real-world practices, thereby accelerating listening, coaching, and leadership skills (Dennison, 2010; Mollica & Mitchell, 2013). E-mentoring could also enable mentors to further engage in their jobs (Dennison, 2010; Mollica & Mitchell, 2013), which may help them readily prepare for employment. Therefore, e-mentoring has the potential to offer either mentors or mentees a number of upsides, giving them an invaluable avenue for learning and development purposes.

The design and development of e-mentoring

The design and development of an effective e-mentoring scheme are essential for the successful implementation of the program (Hobson et al., 2021). However, there is a strong need for collective efforts from the individual stakeholders, particularly the program organizers, mentees, and mentors. Notably, such a program is needed to design and develop with a comprehensive approach (Chong et al., 2020) that may include recruitment and

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selection strategies, clear roles and responsibilities, mentee-mentor matching, mentee-mentor training, and mentoring evaluation. Each of these components is discussed in turn.

Recruitment and selection

Candidates of both the mentors and the mentees should be carefully selected to ensure the successful implementation of e-mentoring programs. Prior studies have suggested that an efficient recruiting announcement campaign that draws in qualified candidates could help boost selection criteria and maximize the dedication and commitment of selected participants to e-mentoring schemes (Hobson et al., 2021; Morales et al., 2016). Therefore, the establishment of an attractive mentorship announcement is deemed crucial. It can then be posted and shared on social media platforms and/or the college websites. When recruiting, Hobson et al. (2021) advised indicating the tasks to be involved, which may include any necessary time needed for the mentoring, as clearly as possible. Moreover, motivation constitutes a vital factor in the process of recruitment, given that motivated mentees are more likely to invest in and develop successful mentorship friendships (Chong et al., 2020; Jaffer et al., 2013; Perlman et al., 2014). It is therefore paramount to consider selecting candidates (e.g., mentees and mentors) who are robustly passionate about attending the programs.

Roles and responsibilities

It is crucial to set up clear roles and responsibilities for both mentees and mentors to guarantee the success of the e-mentoring implementation. It is suggested that roles and agreement on duties are essential for mentorship friendships to succeed (Colvin & Ashman, 2010; Storrs et al., 2008). Therefore, to ensure that mentees and mentors have a nuanced understanding of what they are going to do, the mentoring roles should be widely introduced and explained to both parties at the beginning of the mentoring schemes. Chong et al. (2020) argued that it is of paramount importance for mentors to clearly understand not only their roles, responsibilities, and objectives but also the e-mentoring strategies being applied during the mentoring sessions.

Research has suggested that the mentees' prominent tasks of e-mentoring include, among others, setting up online meetings, outlining their expectations, and reporting the outcomes of mentoring sessions (Iqbal, 2020; Schlager &

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Fusco, 2003). It is convinced that e-mentoring is reliant upon both sides agreeing on what is expected of them in order for the mentee and mentor to be able to reflect on and assess their mentoring progress. Regarding the main roles of mentors, nonetheless, Rolfe (2016) claimed that mentors offer support and guidelines to their mentees. In this sense, mentors can support through listening, asking questions, giving constructive feedback, facilitating decision-making, and advising relevant resources. Rolfe (2016) added that mentors play a crucial role in challenging mentees' ideas and serving as a sounding board, assisting mentees in exploring problems and, at the same time, developing skills. As a result, having good questioning, listening, and facilitating skills are of paramount importance.

Mentee-mentor matching

Mentee-mentor matching is one of the significant components contributing to e-mentoring success (Hobson et al., 2021). As Chong et al. (2020) and Weiner et al. (2014) proposed with regard to matching undergraduate students, e-databases are employed to assist learners in locating mentors that align with their working background, interests, and expertise. It is important to note that the information provided by the applicants (e.g., mentors and mentees) regarding their expertise, skills, and experience (for mentors), and about desires for professional development and assistance, as well as their career aspirations (for mentees) is commonly utilized to pair mentors and mentees (Hobson et al., 2021; Morales et al., 2016). In addition, matching mentees and mentors with the same genders is also one of the commonly used strategies. This strategy tends to be effective, given that skills and genders could influence the effectiveness of mentoring relationships (Klasen & Clutterbuck, 2012). Moreover, Deng et al.'s (2022) review suggested three significant aspects for effectively matching mentees and mentors, including (a) the level of similarity in personal values and personality, (b) the developmental needs of mentees and the corresponding capabilities of mentors, and (c) providing an opportunity for mentees and mentors to have a discussion prior to making the final matching decision. These suggestions could "help to maximize positive mentoring outcomes" (Deng et al., 2022, p. 399). Meanwhile, it is critical to consider mentors' availability and dedication during the matching process (Chong et al., 2020; Guse et al., 2016; Kim et al., 2013). In this sense, there is a need to establish and utilize the appropriate criteria for matching mentees and mentors. Thus, it is essential to

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consider various factors that might impact relationships between mentees and mentors while matching.

Mentee and mentor training

While numerous scholars have argued that training is essential for both mentors and mentees to ensure the effectiveness of the mentorship (Chong et al., 2020; Kaufman, 2017; Walsh, 2016), a number of mentoring schemes seem to lag behind in providing such invaluable training. It is thus essential for the e-mentoring organizers to create training content that aligns with the training needs and program's goals and then deliver the training to both parties (e.g., mentees and mentors) prior to the beginning of the e-mentoring scheme (Chong et al., 2020). Training content of the e-mentorship scheme, however, varies because it requires alignment with each mentoring objective (Aronoff et al., 2010; Chong et al., 2020). It is worth noting that different e-mentorship schemes should design different training materials based on the specific goals of each e-mentoring program.

Williams and Kim (2011) particularly advised including technology utilization and considering course content in the mentors' training, as these can equip them with the technological skills and content knowledge necessary for the e-mentoring implementations. As they advised, e-mentor training should carry out some important contents, such as assignment instructions, course objectives, assignment samples, mentor expectations, grading rubrics, e-mentoring expectations, and communication methods, among other essential contents. In this sense, Desselle et al. (2021) indicated that egoism would be lessened by adequately trained mentors and rigorous program management, which can also inspire mentors to advise their mentees to continue informal mentoring and introduce them to diverse networks of informal mentors. As a result, offering the appropriate training is of vital importance to enable the smooth and effective process of e-mentoring program, as well as to develop better relationships among mentees and mentors.

Mentoring evaluation

Evaluating an e-mentoring program using a clear evaluation tool is deemed essential to ensure its effectiveness and efficiency. While there are different ways to evaluate the implementation of the e-mentoring program, Weiner et al.

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(2014) argued that the participants' survey would be one of the considerable ways to evaluate e-mentoring schemes. To measure the progress and effectiveness of the e-mentoring program, it is beneficial to conduct a study by comparing the results of students who participate in the program and those of their counterparts who do not participate (Chang et al., 2020; Chu et al., 2013). While this evaluation method appears effective for evaluating the program's success, it can only be applied at the end of the program's implementation. Therefore, it is of benefit to conduct formative assessments to determine how well or poorly the e-mentoring schemes are working.

Conclusion

This article has provided an overview of the benefits of e-mentoring and its components for designing and developing an effective e-mentoring scheme. To ensure the e-mentoring scheme is effective, it is important to design and develop it using the key aspects discussed in this article. These aspects include creating clear recruitment and selection strategies; developing concise roles and responsibilities of mentees and mentors; matching mentees and mentors based on their interests, expertise, and background; providing training in response to e-mentoring objectives and mentees' and mentors' needs; and adopting appropriate tools or methods for evaluating the e-mentoring progress and its effectiveness.

While e-mentoring is deemed beneficial in supporting students to prevent them from dropping out and helping them succeed in their academic journeys in higher education, such programs need to be carefully developed. Thus, close attention should be paid from the beginning of design and development through to implementation and evaluation. This is to ensure the effectiveness and efficiency of the e-mentoring program's implementation. Furthermore, given the importance of mentee-mentor matches, it is recommended to match them using scientific data gathering from surveys or interviews, rather than relying solely on the e-mentoring organizers' knowledge or experience. Moreover, it is of benefit to provide mentees and mentors with comprehensive training that includes specific content tailored to their particular needs and the program's goals by assessing their skills and objectives prior to the commencement of the program.

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While the e-mentoring scheme appears to have an essential role to play in assisting students with various aspects of their academic journeys, especially academic and psychological support, research and academic publications associated with e-mentoring in higher education remain relatively limited in some countries, particularly in developing countries like Cambodia–a context where research appears to be underrepresented in international literature. Therefore, this article calls for researchers and relevant stakeholders to conduct research to further examine the effectiveness and efficiency of integrating e-mentoring schemes in higher education settings. This would provide better insights for current or future e-mentoring program organizers and higher education institutions, helping them to refine the design and development strategies of e-mentoring programs which may, in turn, result in enhancing the quality of their implementations. Research into how mentees and mentees perceive challenges and opportunities within the e-mentoring scheme is also recommended.

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