

Digital Mentoring Strategies And Virtual Communities Of Practice For Enhancing Doctoral Student Completion In Distance Education: An Exploratory Study At Universitas Terbuka

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Abstract :

Distance-based doctoral education presents unique challenges not only related to academic aspects, but also emotional, social, and technological ones. The lack of face-to-face interaction, disrupted access to scientific resources, and limitations in direct supervision make the learning experience of doctoral students more complex. This study aims to explore the role of digital mentoring strategies and the existence of virtual communities of practice in supporting the completion of doctoral students' studies in distance learning programs at Universitas Terbuka. This study uses a qualitative approach with an exploratory case study method, involving active students in the Doctoral Program in Management Science as the main participants.

Data collection techniques were carried out through in-depth interviews, participatory observation of courage, and analysis of supporting academic documents. The main focus of the study was to identify effective courageous mentoring practices, social dynamics within virtual communities, and how these affect student motivation, independence, and scientific productivity. This study also explains how higher education institutions can develop more collaborative, supportive, and digitally-based learning ecosystems. The results show that digital mentoring increases the accessibility of guidance and research disciplines, while virtual CoPs reduce academic isolation and strengthen collective academic identity. The synergy between the two creates a comprehensive learning ecosystem, thereby increasing the motivation and completion of doctoral students' studies. This research provides theoretical contributions to the development of distance education literature and practical applications for the academic policies of the Open University. It is hoped that the results of this study will provide a significant contribution to the development of distance education training models that are relevant to the needs of doctoral students in the era of digital transformation in higher education. These findings also have the potential to form the basis for policy recommendations for institutions in improving the quality of academic services for open doctoral programs.

Keywords: Digital mentoring; virtual community of practice; study completion; doctoral students; distance education

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INTRODUCTION

Distance learning has become a strategic alternative for expanding access to higher education, including doctoral programs. However, several studies report that distance learning doctoral students face greater challenges than traditional students, such as high levels of academic isolation, limited mentoring, and weak social support (Lee et al., 2020; Johnson, 2022). These conditions result in high attrition rates and delayed dissertation completion.

Universitas Terbuka (UT), as a distance-learning university in Indonesia, has provided digital infrastructure, but the challenges faced by doctoral students require more specific strategies. Recent literature suggests that digital mentoring and virtual communities of practice can be solutions to overcome the limitations of in-person interaction (Hastie et al., 2021; Wenger-Trayner & Wenger-Trayner, 2020). However, research examining the integration of these two strategies in the context of distance learning doctoral programs in Indonesia is still very limited. This study aims to explore how digital mentoring and virtual communities of practice play a role in improving doctoral student completion at Universitas Terbuka.

Distance learning at the doctoral level faces more complex challenges than undergraduate or master's programs. Doctoral students are required to possess a high degree of learning independence, strong research skills, and perseverance in completing their studies. However, various studies have shown that distance learning doctoral students have a relatively higher attrition rate than those in traditional programs, primarily due to academic isolation, limited interaction with supervisors, and weak academic social support (Lee et al., 2020; Johnson, 2022). Open University (UT), as a pioneer in distance learning higher education in Indonesia, has developed various digital strategies to support students. However, specific challenges remain for doctoral students, particularly related to limited in-person mentoring, access to academic communities, and collaborative research skills. Recent studies confirm that digital mentoring can be an effective solution for improving the quality of mentor-student interactions through online media, both synchronously (e.g., Zoom, Microsoft Teams) and asynchronously (Learning Management System, email, discussion forums) (Hastie et al., 2021).

Furthermore, virtual Communities of Practice (CoP) approaches have been shown to strengthen connections between students, lecturers, and researchers across regions. Wenger-Trayner & Wenger-Trayner (2020) emphasize that virtual CoPs can create collaborative environments that foster peer support, knowledge sharing, and cross-institutional research networks. In the context of distance learning doctoral students, virtual CoPs can reduce academic loneliness and increase motivation to complete their studies (Bozkurt & Sharma, 2020). The development of distance learning at the doctoral level faces serious challenges, particularly regarding study completion. Many students feel isolated, lack connection with their supervisors, and lack social support. Digital mentoring strategies and virtual communities of practice (CoPs) are believed to address these challenges. Digital mentoring provides flexible and consistent guidance, while virtual CoPs create collaborative spaces that reduce academic isolation.

However, research on the integration of digital mentoring strategies and virtual communities of practice to support the study completion of distance learning

doctoral students in Indonesia is still very limited. Previous studies have focused more on the effectiveness of e-learning in general (Moorhouse & Wong, 2021) or the use of digital platforms at the undergraduate level. Thus, a research gap remains: how digital mentoring strategies and virtual communities of practice can be designed and implemented in an integrated manner to improve study completion for distance learning doctoral students at Universitas Terbuka.

This research combines several key theories: Self-Determination Theory (Deci & Ryan, 2020) explains student learning motivation through the fulfillment of psychological needs. Communities of Inquiry (Shea & Bidjerano, 2019) explains the importance of teaching presence (digital mentoring) and social presence (virtual communities of practice) in distance learning. Communities of Practice (Wenger-Trayner & Wenger-Trayner, 2020) emphasizes a collective learning process based on real-life practice among students. Tinto's Theory of Student Integration (2017) explains the relationship between academic and social integration and study completion.

METHODOLOGY

This research used an exploratory qualitative approach to explore the experiences, perceptions, and strategies of students and supervisors in implementing digital mentoring and virtual communities of practice. The research location was the Doctoral Program in Management, Universitas Terbuka (UT). The main participants were:

1. Active doctoral students from the 2020–2024 intake,
2. Supervisors/promoters, and
3. Academic administrators of the doctoral program.

Data was collected through:

- In-depth interviews with students and supervisors (n=20),
- Focus Group Discussions (FGDs) with the doctoral student community, and
- Document analysis (mentoring guides, UT LMS, academic reports).

The data analysis technique used thematic analysis (Braun & Clarke, 2019) with the following stages: data familiarization, coding, theme discovery, theme review, and narrative development. Data validity was strengthened through source triangulation and member checking.

FINDING AND DISCUSSION

The research results show that digital mentoring strategies and virtual communities of practice significantly contribute to the completion of distance learning doctoral students at Universitas Terbuka. Three key findings can be summarized as follows:

3.1. Findings

3.1.1. Digital Mentoring Improves Supervision Accessibility and Consistency

Students feel more connected to their supervisors through regular online meetings, a rapid feedback system, and flexible scheduling. This strategy directly enhances research discipline and accelerates dissertation completion. This aligns

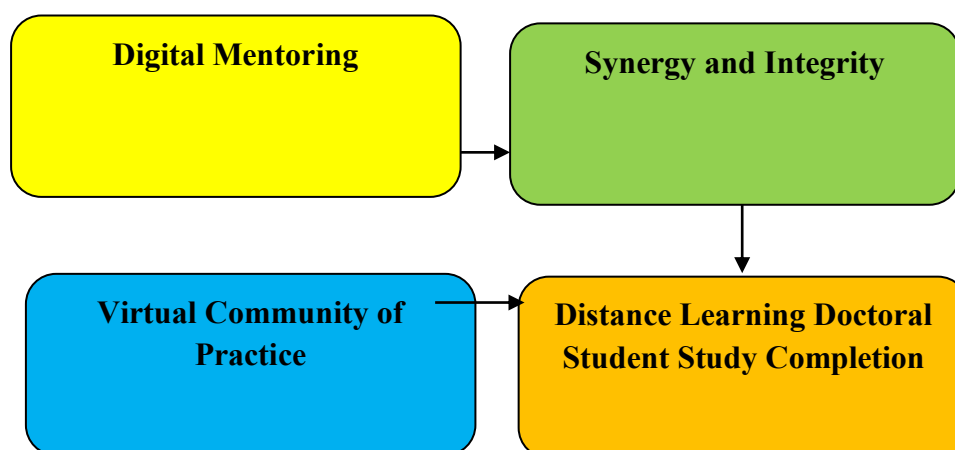
with the findings of Hastie et al. (2021), who stated that digital mentoring can reduce geographical barriers and improve the quality of academic communication.

3.1.2. Virtual Communities of Practice Reduce Academic Isolation

Students' active participation in virtual discussion groups, research forums, and peer-review circles provides strong socio-academic support. They feel less alone in the lengthy research process. This supports the findings of Wenger-Trayner & Wenger-Trayner (2020) that virtual CoPs strengthen collective academic identity and encourage collaborative learning.

3.3.3. Synergy of Digital Mentoring and Virtual CoPs Promotes Study Completion

The integration of these two strategies produces a synergistic effect: digital mentoring provides individualized guidance, while virtual communities of practice provide collective support. This combination has been shown to increase intrinsic motivation, reduce study procrastination, and accelerate dissertation completion. These findings are consistent with international literature emphasizing the importance of distance learning designs based on collaboration and social support (Bozkurt & Sharma, 2020; Johnson, 2022). Thus, this study confirms that structured digital mentoring and inclusive virtual communities of practice can be key strategies for improving study completion among distance doctoral students at Universitas Terbuka.



The findings of this study demonstrate that digital mentoring strategies and virtual communities of practice are two important pillars in improving the completion of distance learning doctoral students at Universitas Terbuka. Theoretically, these results expand the research on distance learning, particularly at the doctoral level, which has previously focused more on cognitive and technical challenges (Lee et al., 2020). This study confirms that socio-academic dimensions, such as connectedness with mentors and peer support, also play a significant role.

First, the results related to digital mentoring align with the findings of Hastie et al. (2021), who emphasized that accessibility and consistency of mentorship are key factors for the success of online doctoral students. However, this study adds a new perspective: digital mentoring not only reduces geographical barriers but also serves as an accountability mechanism, encouraging students to maintain a research rhythm through regular meeting schedules.

Second, the finding that virtual communities of practice reduce academic isolation supports Wenger-Trayner & Wenger-Trayner's (2020) theory of value creation in social learning spaces. Virtual CoPs enable doctoral students to develop a collective academic identity, which in turn increases motivation and resilience in facing study challenges. This research enriches the literature by providing empirical evidence from the Indonesian context, which is rarely explored in the international literature.

Third, the integration of digital mentoring and virtual CoPs produces a synergistic effect, supporting Bozkurt & Sharma's (2020) research on the importance of distance learning designs that balance individual and collective dimensions. While digital mentoring focuses on one-to-one relationships between students and supervisors, virtual CoPs function as many-to-many relationships that foster academic solidarity. The synergy between the two can create a more comprehensive support ecosystem, thereby increasing the chances of study completion.

The practical implication of this research is the need for Open University (Universitas Terbuka) to institutionalize these two strategies in academic policy. First, digital mentoring programs should be supported by an official platform, mentoring guidelines, and incentives for supervisors. Second, doctoral students' virtual communities of practice need to be continuously facilitated, for example through online research forums, virtual colloquia, and internal peer-review systems. In this way, students not only receive academic guidance, but also ongoing social support.

Table 1. Conclusion Results

Academic Aspects	Pre-Condition	Post-Condition	Main Impact
Mentoring Access	Limited, often hampered by distance and slow communication	Flexible, online, fast feedback	Guidance effectiveness increases
Research Discipline	Tends to delay progress	More structured, research rhythm is maintained	Accelerated dissertation completion
Academic Interaction	Low, students feel isolated	Active in discussion forums, online seminars	Reducing academic isolation
Motivation and Social Support	Tends to decrease when there are obstacles	Improve through emotional support and peer support	Learning persistence increases
Academic Identity	Weak, feel like walking alone	Stronger, collective identity is formed	Increased self-confidence

Study Completion	Delays & high dropout potential	Graduation rates increase, tardiness decreases	Study completion increases
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CONCLUSION

This study concludes that digital mentoring strategies and virtual communities of practice significantly contribute to improving the completion of distance learning doctoral students at Universitas Terbuka. Digital mentoring allows for accessibility, consistency, and quality communication between mentors and students, while virtual communities of practice serve to reduce academic isolation, strengthen collective academic identity, and increase motivation.

The combination of these two strategies creates a learning ecosystem that supports both the individual and collective needs of doctoral students. Theoretically, this study enriches the literature on distance learning by emphasizing the importance of integrating socio-academic aspects in supporting study success. Practically, this study provides recommendations for Universitas Terbuka and similar institutions to design systematic digital mentoring policies and develop structured virtual communities of practice to strengthen student completion.

This study has limitations, namely its focus on the context of a single doctoral program at Universitas Terbuka. Therefore, further research is recommended to expand the scope to various distance learning doctoral programs in Indonesia and internationally, and to test the effectiveness of this strategy using a quantitative approach using a structural model.

Thus, digital mentoring strategies and virtual communities of practice can be positioned as relevant pedagogical innovations in addressing the challenges of distance higher education, particularly in supporting doctoral students to complete their studies effectively and be globally competitive.

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