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# Development and implementation of personal learning environment-based writing for publication scaffolding platform for Ph.D. Students

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This research tackles the challenges Ph.D. students face in academic publishing, which are not fully addressed by existing support systems. It introduces the personal learning environment-based writing for publication (PLE-WfP) platform, created to offer extensive support in academic writing and publication. Developed and tested over ten months with thirteen Year 1 Ph.D. Chinese students at a Thai university, the platform uses a mixed-methods approach encompassing development, intervention, and feedback analysis through reflective diaries. The PLE-WfP platform, structured in individual, group, and submission stages, guides students from beginning writing to collaborative research and final publication, addressing common publishing challenges. Participants expressed a strong preference for the platform's personalized assistance over conventional methods, highlighting its relevance, adaptability, promptness, and thoroughness. The importance of the academic community in enhancing collaborative writing, confidence, emotional regulation, and resource sharing was also emphasized. This study highlights the need for emotional and financial support in addition to cognitive and technical assistance in academic writing. By providing a novel scaffolding approach, this research contributes valuable insights and solutions to the academic community, demonstrating significant theoretical and practical benefits for global academic discourse.

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## Introduction

Since the early 2000s, there has been a growing trend in universities worldwide to mandate publications in highly-ranked, English-medium journals indexed in recognized citation databases (Cho, 2009; Lei & Hu, 2019; Maher & Fallucca, 2013). This shift has significantly impacted novice researchers, including doctoral candidates, who are often required to publish in these journals as a prerequisite for degree completion and to secure their place in academic communities.

Ph.D. students navigating the 'publish or perish' culture in academia face significant pressures. Challenges include the lack of a structured mentoring system (Ramsay et al., 2014), unfamiliarity with publishing protocols, inadequate institutional backing, and language obstacles (Lua & Hyland, 2016). In response, social sciences and humanities have seen a rise in co-authorship as a means to alleviate these publication pressures (Ossenblok & Verleysen, 2014).

In the realm of English for Research Publication Purposes (ERPP), these students face complex issues. They must grapple with maintaining linguistic accuracy and adhering to the conventions of academic discourse (Khany et al., 2018), while also mastering the structure and logic of scientific argumentation (Shuhui & Weicheng, 2011). Non-native English speakers, in particular, encounter significant socialization challenges, navigating not just the language, but also the intricacies of scholarly communication (Cargill & O'Connor, 2006). These academic hurdles are further intensified by practical issues such as managing time, finances, and emotional well-being (Flowerdew, 2012), and the critical need for constructive relationships between advisors and students (Huang, 2010).

In response to these challenges, various support mechanisms have been implemented by research institutions. These include short-term publication courses and longer-term writing support groups (Mathew et al., 2006), English for Academic Purposes (EAP) and English for Research Publication Purposes (ERPP) courses (Li & Flowerdew, 2020), one-on-one mentorship (Busse et al., 2022), and multiple source-based writing tasks (Allagui, 2023). Additionally, Personal Learning Environments (PLEs) have been promoted to assist students (Drajati & Wisudawati, 2020). Yet, there remains a scarcity of research on the use of PLEs in scaffolding Ph.D. students' writing for publication. Some studies have utilized software tools like Blackboard to deliver course materials tailored to various learning styles (Beth et al., 2015; Bolsen et al., 2016; Alzahrani & Aljraiwi, 2017).

Addressing this research gap, this study contributes to both the theoretical and empirical understanding of using a PLE approach for scaffolding Ph.D. students' writing for publication. The paper raises two critical research questions:

- (1) How can Personal Learning Environments be developed and implemented to scaffold Ph.D. students' Writing for Publication?
- (2) What are students' perceptions of the PLE-WfP platform?

By exploring these questions, this research aligns with the frameworks proposed by Murray (2002) and Matthew et al. (2006), incorporating a weekly online academic writing course and the innovative PLE-based writing scaffolding platform, the PLE-WfP, to support Ph.D. students in publishing in international peer-reviewed journals. Leveraging the scaffolding theory, this study not only designed the PLE-WfP platform but also rigorously evaluated its effectiveness through an analysis of reflective diaries, providing insights into Ph.D. students' perceptions of the platform. Our investigation delves into the ongoing discourse on the effectiveness of various scaffolding methods, including writing courses and groups, in the context of publication writing. Furthermore, we offer a detailed overview of the

construction and implementation of the PLE-WfP platform, underscoring its potential to enhance the quality, quantity, and competence of Ph.D. students' publications.

## Context of the study

The personal learning environments-based writing for publication (PLE-WfP) project was conceived to specifically assist Ph.D. students with the complexities of academic writing and publication. This initiative is a collaborative effort between Stamford International University in Thailand and the World Sports Publisher, reflecting a unique synergy between academic and publishing expertise. The project is distinguished by its comprehensive support structure, encompassing both empirical research assistance and financial aid for article processing charges (APC), demonstrating a commitment to alleviating common obstacles faced by doctoral candidates.

The personal learning environment-based writing for publication (PLE-WfP) platform merges individualized learning with group knowledge creation through its unique application of scaffolding theory. It is structured into three phases: individual, group, and submission services, each designed to support different stages of the academic publishing process. By utilizing interactive tools like Wikis, blogs, and Google Docs, the platform moves beyond traditional academic formats to a more dynamic, collaborative approach, reflecting the shift towards inclusive and participatory digital academic practices.

This platform embeds Vygotsky's zone of proximal development (ZPD) within personal learning environments (PLEs), promoting a learner-centered strategy where digital tools aid the progression from simple to complex research tasks. This aligns individual efforts with collective scholarly work, fostering both personal and academic growth.

A key feature of the PLE-WfP platform is its emphasis on mentorship, particularly from experienced mentors at a partnering Thai university. This introduces a combination of global and local academic perspectives, enhancing traditional mentorship methods with personalized, context-sensitive support. The platform's approach to authorship promotes active student involvement, positioning Ph.D. students as primary authors to enhance ownership and responsibility, supported by faculty co-authors.

The platform's effectiveness is evidenced by the successful submission of 11 manuscripts to international peer-reviewed journals, including publications in prestigious Scopus-indexed journals. The PLE-WfP's comprehensive approach integrates academic, emotional, and financial support, setting a new benchmark in support for doctoral students and addressing the complex challenges of academic publishing. This holistic strategy makes the PLE-WfP an innovative and effective tool in doctoral education and academic writing support.

## Literature review

**Challenges at three levels in English for research publication purposes.** The landscape of English for Research Publication Purposes (ERPP), a critical subset of English for Academic Purposes (EAP), is marked by its unique demands on researchers. This specialized domain requires a deep understanding of academic norms and linguistic precision. Khany et al. (2018) outline seven essential elements of ERPP, emphasizing the need for criticality, voice, and objectivity. Their work suggests a structured approach to ERPP education, contrasting with Shuhui and Weicheng (2011) who provide a more holistic view, integrating discourse structure and scientific reasoning into ERPP competence. This contrast illuminates the debate between a structured,

skills-based approach and a more integrated, holistic understanding of academic writing. Additionally, Hartley's (2008) description of scientific writing complements these perspectives by underscoring the necessity of an impersonal, objective stance, thus highlighting the multifaceted nature of ERPP challenges.

The literature reveals a consensus on the correlation between English proficiency and scholarly productivity, as illustrated by Richards (2017). Yet, this relationship is nuanced by the barriers non-native speakers face, documented extensively by Burrough-Boenisch (2003) and Gosden (2003). The specific challenges of writing introductions and discussions, as identified by Cargill and O'Connor (2006), point to a broader issue of academic socialization, where non-native speakers struggle with not only language but also with engaging in scholarly discourse. Flowerdew (2012) extends this discussion to the practical hurdles of time, cost, and emotional stress, painting a comprehensive picture of the non-native English-speaking researcher's predicament.

Huang (2010) provides an in-depth look at the challenges faced by Ph.D. students, such as academic writing skill improvement and the dynamics between advisors and students. This insight into Ph.D. students' experiences adds depth to the discussion on ERPP challenges, revealing layers of complexity involving cultural, psychological, and institutional factors.

**Enhancing the writing for publication competence through interventions.** Effective strategies for enhancing writing for publication proficiency are multifaceted, addressing individual, group, and external challenges. At the individual level, the critique by Keen (2007) on the pragmatic shortcomings of traditional academic writing literature illuminates a gap between theoretical guidance and real-world application. This critique starkly contrasts with the approach advocated by Busse et al. (2022), who emphasize a personalized, needs-based analysis before training, suggesting a pivot towards more tailored and practical writing support solutions.

In direct response to Keen's criticisms, the practical steps toward developing referencing skills and utilizing writing software are underscored as essential individual strategies. This methodological individualism contrasts with the communal strategies found in group-level interventions, suggesting a dialectical relationship between personal skill development and collaborative learning environments.

At the group level, the effectiveness of writing support structures is highlighted by McGrail and Rickard (2006), who argue that writing groups form the cornerstone of effective writing intervention, a sentiment echoed by Kempenaar and Murray (2018). This collective approach starkly differs from individual strategies, highlighting the synergistic effects of group dynamics on writing proficiency. The multifaceted approach is recommended by McGrail and Rickard (2006) contrasts with the more structured, hierarchical framework of academic writing instruction, such as the IMRaD format emphasized by Willison (2012). This comparison underscores a tension between structured academic formats and the fluid, dynamic nature of collaborative writing groups.

Willison's (2012) advocacy for structured article construction using the IMRaD format introduces another layer of complexity, juxtaposing the structured academic rigor against the organic, community-driven approaches of writing groups and mentorship programs. This highlights the ongoing debate between traditional and progressive pedagogical approaches in academic writing.

Furthermore, the situated learning approach, supported by Cargill and O'Connor (2013) and Maher and Fallucca (2013), reinforces the value of immersive, context-specific learning

environments. This method contrasts with more conventional, didactic learning strategies, suggesting that real-world engagement and community integration offer significant benefits for developing academic writing competence.

Externally, the necessity of supporting academic writing beyond the academic institution is addressed by Busse et al. (2022), who emphasize the importance of resources like open-access publication fees and reliable internet access. This perspective is complemented by the findings of Moore (2003) and Murray and Newton (2020), who underscore the value of structured writing retreats in enhancing writer well-being, motivation, and productivity. The contrast between these external supports and the internal, personal, and group-level interventions underscores the holistic nature of academic writing challenges and the diverse strategies required to address them.

The literature collectively emphasizes the necessity for a comprehensive, multilevel approach to support academic writing and publication efforts. The contrast between individual skill development, collaborative learning experiences, and the provision of external resources highlights the complexity of academic writing challenges and the varied strategies required to overcome them. This multifaceted approach underscores the importance of addressing writing for publication competence from multiple angles, ensuring a holistic support system for academic writers aiming for successful publication outcomes.

**Rise of collaborative writing in academic research.** Collaborative writing has increasingly become a staple in academic research, marking a significant shift from traditional, solitary writing endeavors. This trend is well documented by Çakır et al. (2019), Kuld and O'Hagan (2018), and Kwiek (2020), who note the rise in interdisciplinary collaborations and publications co-authored by multiple researchers. The movement towards this collaborative paradigm encompasses a variety of practices, from writing support groups to interactive writing workshops, each with unique benefits and challenges.

Contrasting sharply with the traditional model of the solitary researcher, collaborative writing introduces a dynamic where the sum is greater than its parts. Hollis (2001) identifies this synergy, noting an increase in academic productivity and publication output as a key benefit of collaborative efforts. Yet, this raises questions about the quality of collaboration versus individual efforts. Are more publications necessarily indicative of higher-quality, or does the collaborative process introduce complexities that affect the research's integrity?

This model proves particularly advantageous for novice writers, as highlighted by Albarran and Scholes (2005). The mentorship aspect of collaboration allows less experienced writers to learn from their more seasoned counterparts, a dynamic that not only aids skill development but also ensures more equitable workload distribution. This mentor-mentee relationship within collaborative frameworks contrasts with the isolation often experienced in solo writing, suggesting a significant shift in how academic knowledge and practices are transmitted.

However, collaborative writing's benefits extend beyond mere productivity and mentorship. Hollis (2001) suggests that collaborative efforts often result in higher-quality research, though this claim invites scrutiny. What defines "quality" in this context, and how does collaboration enhance it? Furthermore, Murray (2020) emphasizes the role of collaborative writing in breaking down professional barriers and fostering a culture of shared knowledge and constructive feedback. This aspect introduces a social dimension absent from individual writing, suggesting that the collaborative model not only impacts output but also shapes the academic community's ethos.

Yet, this shift towards collaborative writing is not without its challenges. The transition from individual to collective writing involves navigating group dynamics, aligning disparate research agendas, and managing contributions equitably. These complexities contrast with the direct control and singular focus associated with individual writing projects.

It becomes clear that collaborative writing embodies a nuanced balance between enhancing academic productivity and navigating the inherent challenges of teamwork. The transition from solitary to collaborative academic writing reflects broader shifts in the research landscape, emphasizing the importance of adaptability, shared expertise, and the collective advancement of knowledge. As the academic community continues to grapple with these changes, the evolving practices of collaborative writing will likely play a pivotal role in shaping future research paradigms.

**Impact of personal learning environments on collaborative learning.** The path to academic publishing is riddled with obstacles, especially for early-career researchers like Ph.D. students. The gap between their current academic literacy skills and the demands of scholarly communication is stark and problematic (Scholtz, 2016). While traditional educational frameworks may fall short, the literature suggests targeted interventions and support structures are vital for mitigating the inherent pressures of publication (Kramer & Libhaber, 2016; McGrail & Rickard, 2006). Against this backdrop, personal learning environments (PLEs) are posited as innovative solutions, bridging the gap between student capabilities and the requisites of academic writing and publication.

PLEs have gained traction for their ability to tailor learning experiences to individual needs, contrasting sharply with the one-size-fits-all approach of traditional academic settings (Dabbagh & Kitsantas, 2012). The personalized, service-oriented nature of PLEs supports a decentralized model of learning, diverging from the centralized, often rigid structures of classroom-based education. This individual-centric versus institution-centric dichotomy underscores a significant shift in educational paradigms, particularly relevant in the context of academic writing.

However, the effectiveness of PLEs in fostering academic writing and publishing success raises questions about the extent to which these environments can replicate or surpass the mentorship and structured learning found in conventional academic settings. The PLE-WfP platform seeks to address these concerns by offering a more nuanced, holistic approach tailored specifically to the needs of Ph.D. students. This platform extends beyond the mere provision of collaborative tools to encompass mentorship, real-time feedback, and emotional and financial support, addressing the multifaceted nature of academic challenges beyond cognitive and technical hurdles.

In conclusion, while PLEs, exemplified by the PLE-WfP platform, offer promising advancements in personalized and collaborative academic writing support, their effectiveness compared to traditional educational structures warrants careful consideration. The integration of individualized tools with comprehensive mentorship and support mechanisms represents a significant evolution in addressing the needs of Ph.D. students. By juxtaposing these modern, digital solutions against traditional academic training methods, the academic community can better understand the potential and limitations of PLEs in facilitating successful scholarly publishing.

**Interplay of scaffolding and zone of proximal development.** In enhancing L2 writing skills, scaffolding serves as a foundational strategy, providing structured support to help non-native speakers develop in both composition and language use. Grounded in

Vygotsky's sociocultural theory, established in the 1970s, scaffolding involves strategies like detailed feedback, collaborative assignments, and the gradual introduction of complex linguistic structures, thus building upon the learner's existing knowledge and encouraging their advancement (Ferris, 2003; Lantolf, 2000). Beyond mere language enhancement, scaffolding promotes confidence and independence among students, enabling them to approach writing tasks with greater self-reliance (Swain, 2005; Applebee & Langer, 2011). By breaking down the writing process into manageable sections and providing personalized support, scaffolding assists students in navigating the challenges of second-language writing, leading to significant improvements in writing proficiency and overall language abilities (Cumming, 2001; Myers et al., 2016).

This concept aligns with the zone of proximal development (ZPD), which highlights the discrepancy between what learners can accomplish on their own and what they can achieve with expert guidance. Scaffolding, by its dynamic nature, facilitates this transition, offering temporary support that diminishes as the learner's proficiency increases, thereby enabling them to undertake tasks they previously could not handle independently (Gonulal & Loewen, 2018; Piamsai, 2020). This approach is particularly effective in L2 writing, where it significantly enhances learning outcomes and overall performance by effectively bridging the gap between learners' current abilities and their potential competencies.

Hammond and Gibbons (2005) highlight the importance of the interaction between instructors and students in the scaffolding process, asserting that while structured materials are necessary, the reciprocal, supportive dialogue between educator and learner is fundamental. In writing education, scaffolding manifests in various forms, including content, structural, and linguistic scaffolding as identified by Choi and Wong (2018). Cotterall and Cohen (2003) further elaborate on the key components of academic essay scaffolding, emphasizing structured essay formats, staged instruction, language support, and consistent feedback mechanisms.

Empirical studies have underscored the significant impact of instructional scaffolding on enhancing students' writing skills and sub-skills (Melrose & Park, 2013; Piamsai, 2020). These studies point to improvements in writing fluency, accuracy, and the facilitation of meaningful interactions between teachers and students, alongside the provision of constructive peer feedback (Spycher, 2017). Scaffolding, therefore, not only elevates the overall quality of writing but also heightens students' awareness of the writing process.

Nevertheless, the literature suggests that the scope of scaffolding in writing should transcend cognitive and skill-based support. As argued by Afitska (2016) and Hasan and Karim (2019), scaffolding in L2 writing should also address the unique linguistic challenges faced by non-native speakers, providing nuanced support in areas such as grammar, vocabulary, and discourse structure. This aligns with the notion that scaffolding for publication should constitute a comprehensive system (Yeh & Yang, 2011), encompassing every stage of the research process, from topic selection to addressing reviewers' comments and managing the emotional and financial aspects associated with academic publication.

### Research methods

This study, approved by the Institutional Academic Board of a Thai University, adopted a mixed-methods design to evaluate the effectiveness of the personal learning environment-based writing for publication (PLE-WfP) platform for Year-1 Ph.D. students. This approach was selected to merge qualitative depth with

quantitative breadth, offering a comprehensive view of the platform's influence on academic publishing.

The research involved three key instruments: platform development, aimed at constructing a supportive space that facilitates students' transition from novice to adept academic writers. This process involved creating a structured environment with phases tailored to individual learning, collaborative work, and preparation for submission, aimed at improving students' writing skills and publication outcomes.

The intervention experiment was conducted to observe the platform's impact on students' writing and publishing abilities. This phase included practical engagement with the PLE-WfP, workshops, peer reviews, and mentorship, focusing on enhancing student's understanding of academic writing and the publication process.

Lastly, the reflective writing task required students to maintain diaries detailing their experiences and progress while using the platform. This task aimed to gather qualitative data on the student's personal and academic development, providing insights into the platform's utility and the students' evolving research competencies.

**Participants and recruitment.** Participants were 13 first-year Ph.D. students specializing in educational leadership, and three supervisors, all recruited via email from the university. The students, aged between 27–32 and primarily teachers or administrators from mainland China, had varying levels of English proficiency and writing experience. This purposive sampling, aligned with qualitative research guidelines suggesting data saturation typically occurs with six to 12 interviews (Guest & Bunce, 2006), was intended to provide in-depth insights into the participants' experiences with the PLE-WfP platform. Informed consent was obtained from all participants, with forms available in both Chinese and English.

**Research design and epistemology.** The study's design was exploratory and descriptive, focusing on describing the implementation process of the PLE-WfP platform and exploring its impacts on the participants' writing skills and publication efforts. The research followed an interpretivist epistemology, seeking to understand the subjective experiences and meanings that the participants attributed to their use of the PLE-WfP platform.

**Instruments.** The central element of our qualitative analysis was the reflective diaries kept by participants, acting as a key instrument to understand Ph.D. students' experiences with the PLE-WfP platform. These diaries, subjected to structured coding, contained five targeted questions aimed at eliciting detailed insights into the platform's scaffolding effectiveness, challenges faced, and its impact on their academic writing and publication endeavors. The questions were as follows:

- (1) Compared to the lecture approach in thesis writing courses, which do you find more helpful: personalized guidance (from topic selection to writing) or traditional lectures? Which method do you prefer and why?
- (2) Regarding the improvement of your thesis writing and publishing abilities, what support do you find in the lecture-based writing courses, and what problems exist?
- (3) In terms of enhancing your thesis writing and publishing abilities, what do you consider the advantages of personalized guidance? In what areas could it be improved?
- (4) Regarding the enhancement of your thesis writing and publishing abilities, do you find the construction of an academic community (thesis guidance groups, paper

teamwork, etc.) helpful? In what aspects does it provide help?

- (5) If developing an online personalized academic guidance platform, what services, plugins, and resources do you think are necessary to effectively enhance your thesis writing abilities?"

**Research procedure.** The study was structured in three phases: The first phase was platform construction. This phase involved detailing the development of the PLE-WfP platform, focusing on its three stages—individual service, group service, and submission service. Each stage was designed to cater to different aspects of the publication process.

The second phase was the experiment or implementation of the PLE-WfP platform. The PLE-WfP platform's implementation starts with participant orientation, highlighting collaborative writing's role in academic publishing. Students then partake in a two-month online writing course focused on educational leadership, followed by collaborative manuscript drafting using the platform's tools. Subsequently, students choose research topics, submit proposals, and form teams for collaborative research with supervisor guidance. In the final stages, they refine and submit manuscripts, navigating the review process with continued platform support, including financial assistance for accepted papers, ensuring end-to-end backing.

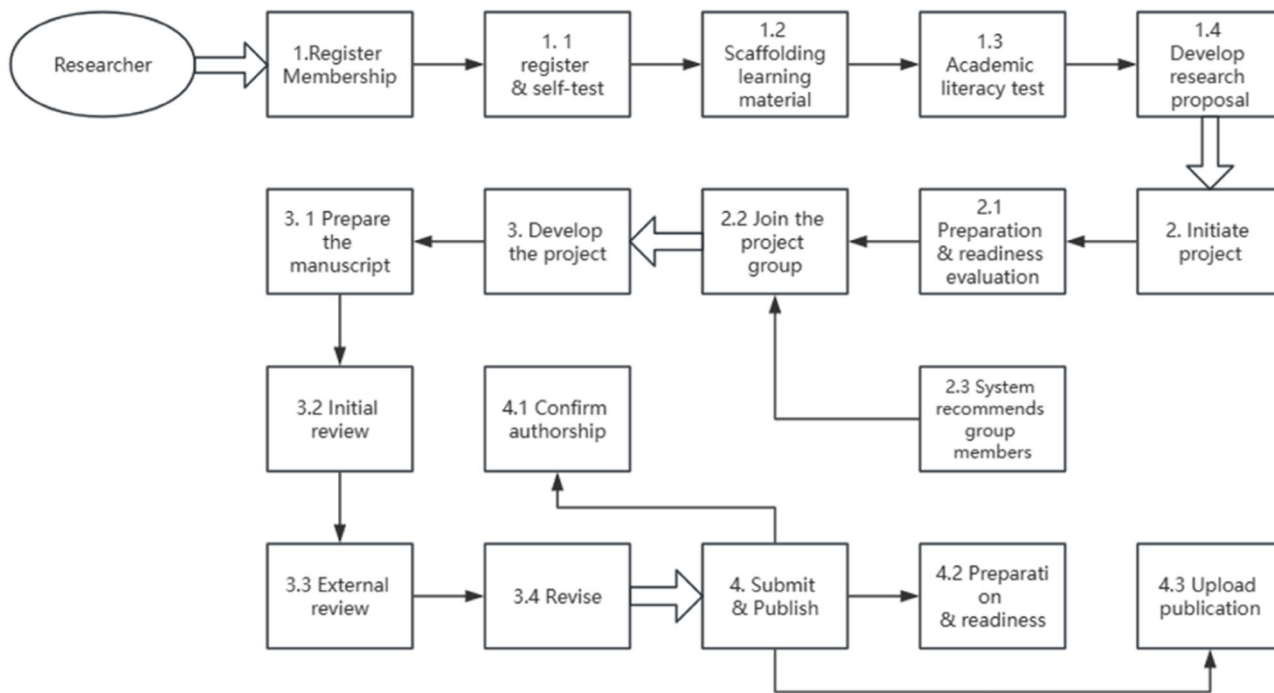
The third phase was reflective diary collection and analysis: The study leveraged reflective diaries to delve into Ph.D. students' experiences with the PLE-WfP platform, aiming to fill the research void in scaffolding for publication. Participants were prompted to document their journey two weeks before the end of the 10-month project, culminating with in-depth reflections prompted by five targeted questions. These questions were crafted to elicit comprehensive insights into the efficacy of the platform's scaffolding, the challenges faced, and the overall developmental impact on their academic writing and publication process. An in-depth thematic analysis was conducted on the diary entries to extract significant themes.

**Data analysis.** The reflective journals were analyzed using Braun and Clarke's (2006) coding method. Initially, codes were developed and refined by both researchers, leading to independent thematic analysis. After extensive review and discussion, themes were adjusted and a second coding cycle was completed, achieving over 90% agreement on themes and codes, resulting in a finalized set of well-defined themes.

During coding, we incorporated specific metrics and observational protocols to document and assess the emotional and other non-cognitive facets influencing collaborative practices. These included qualitative assessments of diary entries for expressions of stress, motivation, and community feeling among participants, enhancing our understanding of the scaffolded support's emotional dimensions.

**Supervisory team.** The supervisory team, comprising three scholars from varied academic fields, was instrumental in guiding the research and publication process. The team included a Thai female Ph.D. supervisor with 20 years of research experience, a male postgraduate supervisor from Macao with a decade of experience, and a female Ph.D. supervisor and international journal editor from mainland China with eight years of research experience.

**Ethical considerations.** The study adhered to ethical guidelines, with informed consent obtained from all participants.



**Fig. 1 State diagram of the PLE-WfP platform.** Source: self-made. This diagram describes the detailed activities associated with the four states of the paper publication through the PLE-WfP platform.

Participants were assured of confidentiality and were informed of their right to withdraw from the study at any time.

**Construction of the PLE-WfP platform**

The PLE-WfP platform, designed to facilitate the paper publication process, is structured into three distinct stages: individual service, group service, and submission service, each targeting specific aspects of the publication journey. The subsequent sections provide a detailed account of the activities associated with each stage, as depicted in Fig. 1.

**State 1: membership registration and self-assessment on the PLE-WfP platform.**

Step 1 Register and self-test. Upon accessing the PLE-WfP platform, researchers must register as members to initiate or join projects. The registration process involves filling out a form detailing their academic background, including current occupation, education, research disciplines, and areas of expertise. Following this, registrants complete a self-assessment of academic maturity, typically through a checklist, to evaluate their proficiency with fundamental research tools like SPSS and NVivo. This collected data is then integrated into their portfolios on the platform.

Step 2 System scaffolding learning material. The system then will scaffold online academic research materials according to the results of the self-tests. The researchers can select the recommended materials in their space:

- (1) Reference: video, academic paper, weblink
- (2) Research tools and tutorials: analytical tools (based on open source and free software)
- (3) Journal Paper structure template
- (4) Research proposal template

Step 3 Basic academic literacy test. Upon completing their self-study of the online academic learning materials, members are expected to undergo a basic academic literacy assessment on the platform. The assessment mainly focuses on testing their

comprehension of reference styles, citations, plagiarism, ethics, and other relevant topics.

Step 4 Develop a research proposal. After passing the basic academic literacy test, members can proceed to write or revise their research proposals, integrating feedback from the instructor team. Upon approval of these proposals, they are eligible to form research groups and engage in one-on-one consultations with instructors for further guidance. They also have the opportunity to utilize the discussion board for additional support. Furthermore, following proposal approval, members can apply for research funding, including resources for activities like administering questionnaires.

- (1) //Pass d: //write research proposal
- (2) //Finish e: //Evaluation: Readiness (to form team) → checklist
- (3) //Pass f: //One to one consultation, //Discussion Board
- (4) //Pass f://Apply for research funds

**State 2: project initiation and research group building.**

If a researcher decides to initiate a project, they assume the role of the project owner, taking on the responsibility of assembling the research group. Notably, each project is limited to a single project owner. Researchers also have the flexibility to join existing teams by evaluating and selecting from the proposals approved by the instructor team. Additionally, there is no restriction on the number of projects a researcher can participate in. The steps involved in initiating a project are detailed in the subsequent table (Tables 1–3).

**State 3: project development and manuscript preparation on the PLE-WfP platform.**

Once the research team is formed, the project owner is tasked with fostering team cohesion and assisting in manuscript preparation. Following multiple rounds of discussions and revisions, the manuscript reaches a stage ready for review. The first level of review is undertaken by the instructor team. An external review, though optional, may be pursued

**Table 1 Activities involved in initiating a project.**

**Activities**

**Initiate a project:**

- 1) upload the research proposal (approved version)
- 2) A detailed description of the project task division and authorship
- 3) A detailed description of the requirements for group members
- 4) Available for members to join in

**Preparation and readiness evaluation:**

- 1) Online learning materials (e.g., group building)
- 2) Evaluation of the readiness to join the group

**Join the project group:**

Researchers join the group:

- 1) Select the project interested in
- 2) Select the divided task of the project
- 3) Consult or discuss with the project owner (optional)
- 4) Confirm the authorship
- 5) Become project group members

**System recommends group members:**

- 1) System recommends a group member and/or instructor list based on researchers' registration profiles
- 2) Project owners select group members in the list
- 3) System notifies the selected researchers
- 4) Researchers respond to the invitation
- 5) Research group built
- 6) Agreement signed

**Table 2 Activities involved in developing the project.**

**Prepare the manuscript:**

- 1) Sequence and schedule activities, using RACI (Accountable, Responsible, Consult, Inform)
- 2) Schedule Project retrospective (e.g., Lesson learned, activities adjustments).
- 3) Team-building activities (e.g., emotional support)
- 4) Prepare the manuscript

**Initial review:**

- 1) The instructor team gives feedback and comments
- 2) Respond and revise according to the feedback and comments

**External review (optional):**

- 1) External reviewers give feedback and comment
- 2) Response and revise according to external reviewer feedback and comments

**Revise**

- 1) The project owner is in charge of the revision process management
- 2) All the team members should be involved in the revision and revise their parts accordingly

**Table 3 Activities involved in submission and publication.**

**Activity**

**Submission:**

- 1) Journal paper and authorship confirmation
- 2) Preparation and Readiness:
  - a) Online learning materials
  - b) Evaluation of knowledge
- 3) Journal matching service (optional)
- 4) Formatting service (optional)
- 5) Submission:
  - a) Feedback and comment
  - b) Response and revise

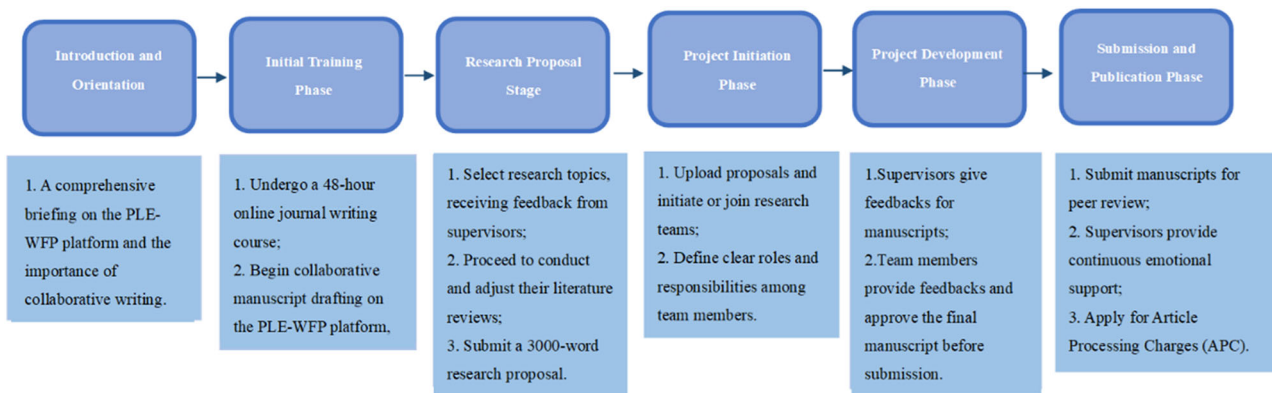
**Publication:**

- 1) Upload the journal acceptance letter(s)
- 2) Upload the accepted manuscript/online publishing
- 3) Upload the receipt (e.g., APC) (optional)
- 4) Applying for publication funding (e.g., APC) (optional)
- 5) Funds granting (optional)

depending on the manuscript's quality and the prestige of the target journal.

**State 4: manuscript submission and publication process on the PLE-WfP platform.**

After addressing feedback from initial or external reviewers, research groups prepare to submit their manuscripts. Before submission, each group member must confirm their authorship and readiness to proceed with the final version. Additionally, they can access online resources to refine their understanding of the journal submission process. The PLE-WfP platform offers services such as journal matching and formatting upon request. When receiving reviewer feedback, it is incumbent upon all group members to collaboratively revise the manuscript. The platform provides templates for responding to reviewer comments and drafting ethics committee approval letters. Following necessary revisions, the manuscript enters the publication phase. If submitting to open-access journals, project owners can apply for article processing charges (APC) funding by submitting the journal acceptance letter, the published paper, and



**Fig. 2 Implementation flowchart of the PLE-WfP platform.** Source: self-made. This diagram describes the detailed activities associated with the implementation of the PLE-WfP platform.

Table 4 Themes and codes of the reflective diary.	
Theme	Codes
Preference for personalized writing guidance	-Relevance to individual needs -Customization for research problems -Timeliness of feedback -Reduction in stress
Limitations of lecture-based instruction	-Comprehensiveness of support -Fragmented knowledge acquisition -Lack of practical application -Insufficient individual attention
Enhancement of writing skills and confidence	-Improvement in writing skills -Enhancement of confidence and emotional well-being -Need for collaborative writing strategies
Impact of the academic community	-Emotional support -Facilitation of collaborative writing -Resource sharing and networking
Needs for an online academic guidance platform	-Technical support and tools -Academic community service -Comprehensive scaffolding system

establish or become part of research teams, engaging in a reciprocal selection process with supervisors. Each team, guaranteed to have a supervisor as a co-author, allocates clear roles and responsibilities to ensure fair contribution and authorship. This team-building process on the platform leads to collaborative efforts under guided supervision.

In the project development phase, supervisors play a pivotal role in monitoring the progress of the manuscript. They contribute insights during the literature review, data collection, analysis, and discussion stages. Concurrently, team members are encouraged to provide constructive feedback and are responsible for endorsing the final manuscript before its submission to a peer-reviewed journal.

The concluding phase of the project involves the submission and publication of the manuscript. During this critical period, supervisors are urged to provide unwavering emotional support to the team, particularly in instances of manuscript rejection. Upon acceptance by a journal, the World Sports Publisher facilitates the payment of article processing charges (APC), in line with the pre-established funding budgets. This final stage is designed to maintain consistent support for the participants, accommodating the diverse requirements of various academic journals throughout the publication process (see Fig. 2).

the APC receipt. The World Sports University’s academic committee then allocates funds based on the journal’s indexing, supporting the project owners in covering publication costs.

**Implementation of the PLE-WfP platform.** At the beginning of the PLE-WfP project, participants are thoroughly briefed on the platform’s functionality and objectives, with a particular focus on the significance of collaborative writing in the challenging publication process, which often includes cycles of rejection and revision. The initial phase of the project involves a comprehensive 48-hour online journal writing course, extending over two months, that concentrates on developing writing skills and structural knowledge, with a specific focus on educational leadership. Following the course, students engage in collaborative manuscript drafting on the PLE-WfP platform, utilizing its various scaffolding features for support. During the research proposal stage, Ph.D. students choose topics within the realm of educational leadership and receive evaluative feedback from supervisors on their viability and design. After confirming their topics, students enter a three-week phase for conducting and adjusting their literature review, culminating in a five-week deadline to submit a 3000-word research proposal via the PLE-WfP platform.

Following the uploading of proposals, the project initiation phase commences. In this stage, students have the option to

**Results**

**Result of the reflective diary.** The data from students’ reflective journals were transcribed and stored in consecutively numbered Microsoft Word files within a designated ‘Students’ Reflective Journal’ folder. The coding process, involving the first and second authors, adhered to the steps outlined by Braun and Clarke (2006). Initially, the first author reviewed the textual content, creating an initial set of codes. These codes were then discussed and refined by both researchers, leading to the formation of potential themes. Following this, each researcher independently conducted a thematic analysis using the initial codes. This stage was crucial for ensuring a rigorous and unbiased interpretation of the data.

Subsequent discussions between the coders led to over 92% agreement on the identified themes, codes, and references, demonstrating a high level of inter-coder reliability. Discrepancies were resolved through thorough comparison and discussion, resulting in the redefinition of some codes and the recategorization of certain themes. A second round of coding was then carried out based on these revised themes. The outcome of this process was a finalized set of themes and codes (see Table 4 below).

**Question 1: preference for personalized writing guidance over lecture approach.** Reflective journal analysis revealed a strong



preference among participants for personalized writing guidance over the lecture-based approach. Key themes identified were relevance, customization, timeliness, reduction in stress, and comprehensiveness.

Firstly, participants expressed a clear preference for the tailored support provided by the PLE-WfP platform, especially valued during the critical research proposal stage. One student described the contrast with lecture-based guidance, stating, "When I encountered problems in writing, such as difficulties in choosing a topic, the supervisors of the personalized writing guidance platform were always able to give targeted advice, which enabled me to choose a topic successfully. And you can hardly get such specific guidance from the lectures."

The second key advantage is the platform's capability to offer highly customized support tailored to the unique research interests and challenges of each individual. Participants appreciated the customized assistance, with one noting, "Personalized writing guidance can be tailored to my research problems." This adaptability extended beyond the initial stages, deeply influencing the quality and detail of their research proposals.

The third benefit is the immediacy of feedback from the platform, improving time management and the efficiency of academic writing. "The platform is designed in such a way that the tutor quickly understands the student's specific situation and always gives prompt advice when I need it," reported a participant, underlining the benefits of real-time interaction."

A more supportive and less stressful writing environment was a noted benefit. "The immediate feedback and encouragement from the platform significantly eased my anxiety during the writing process," shared a participant. This reflects the platform's effectiveness in mitigating the common pressures associated with academic writing.

Finally, the platform's holistic approach was recognized for covering all aspects of academic writing and publication. "The platform helps us a lot in all aspects of paper writing. Furthermore, the publication funding support is a great help for our ongoing research," a participant observed, highlighting the extensive nature of the support provided.

These perspectives collectively underscore the tailored, timely, and comprehensive support provided by the PLE-WfP platform, distinguishing it as a highly effective tool for academic writing and publication."

#### **Question 2: perceived limitations of lecture-based instruction.**

Most participants recognized the value of paper-writing lectures, particularly for gaining insights into current research trends, understanding theoretical frameworks, and learning specific research methodologies. They especially appreciated the resources, materials, and firsthand publication experiences shared by experts and scholars in these lectures.

While lectures were found to help provide theoretical knowledge, they were less effective in addressing practical writing issues. The general format of the lectures was seen as insufficient for individual student needs. Echoing this sentiment, one participant expressed, "I often felt as though I only half-understood the lectures, and communication with the lecturer was not convenient due to the large audience. Therefore, I did not find the paper writing lectures particularly beneficial to my own writing needs."

**Question 3: advantages of personalized guidance for skill enhancement.** All participants acknowledged the significant role of the PLE-WfP platform in enhancing their writing for publication skills. The findings align with previous research by Melrose and Park (2013) and Piamsai (2020), particularly

regarding the benefits of timeliness and customization in academic writing support. Additionally, many participants emphasized the significant impact of personalized guidance on their confidence and emotional well-being, echoing findings from Yantraprakorn and Darasawang (2013). For example, a participant shared, "I used to feel very anxious when writing academic papers, but the communication in the platform built my confidence and increased my motivation. I think emotional support like this is crucial for new academics." This underscores Amanda's (2018) assertion that academic writing encompasses cognitive, social, and emotional processes.

In terms of enhancement, a notable number of participants suggested further development of the PLE-WfP platform to better support team research and collaborative writing. One participant proposed more frequent group interactions to cultivate a conducive academic environment and expand students' horizons. Another recommended integrating authors with similar research interests on the platform for more effective discussion on research questions, methods, and progress.

#### **Question 4: impact of constructing an academic community.**

The establishment of an academic community was highly valued by participants. The benefits derived from being part of an academic community are threefold. First, the provision of emotional support emerges as a primary benefit. This sentiment was captured by a participant who stated, "Scientific research and academic writing are very boring; thus, the support and encouragement of academic community members is a very important spiritual pillar that makes me feel that I am not alone."

Moreover, such communities are instrumental in enhancing collaborative writing endeavors. A participant reflected on this advantage, noting, "Personally, my ability to independently analyze and process data is relatively weak, and the academic writing team solves this problem very well. Working together improves writing efficiency, and effectively shortens the writing and publication cycle."

Lastly, the function of academic communities extends to the facilitation of resource sharing and networking. They forge a confluence of individuals from varied scholarly fields, creating a fertile ground for the interchange of academic materials. This encompasses the latest in research developments to specialized knowledge in writing techniques. This utility of academic networks is underlined in Daly's (2010) study, which emphasizes the significance of both close and distant connections within these networks for the efficient exchange of resources.

#### **Question 5: enhancements for the PLE-WfP platform.**

Participants pinpointed several specific enhancements for the PLE-WfP platform. Firstly, participants stressed the necessity for robust technical support within the platform. Essential features identified include live streaming capabilities, online meeting functions, and the ability to share resources and engage in real-time chat. The addition of relevant plugins was also recommended to enhance functionality. Secondly, they highlighted the importance of the development of services that support the growth of academic communities. Participants suggested creating a dedicated space within the platform that allows researchers with similar interests to connect and partake in scholarly discussions. Thirdly, the feedback indicated a clear demand for a well-structured online scaffolding system. This system should support users throughout all stages of the academic writing process. Key components include guidance on topic selection, assistance with conducting literature searches, and support in the writing, revision, and publication phases.

The responses underscored the need for a holistic scaffolding approach, incorporating a range of academic navigation tools. For instance, one participant proposed the following: “The platform can develop more complete academic navigation functions that students can choose the corresponding functions according to their needs, such as topic selection help, literature search, text editing.”

In sum, the in-depth interviews reveal that academic writing is an all-encompassing process, requiring comprehensive scaffolding support at every stage. This study also brings to light the often-overlooked importance of emotional and financial support, as well as the value of academic community engagement, thus filling a gap in the existing literature on academic writing support.

**Result of the publication.** Through the engagement with the PLE-WfP platform, 13 participants collectively achieved a noteworthy level of success in academic publishing. Specifically, the project facilitated the submission of 11 manuscripts to international peer-reviewed journals, underscoring the project’s role in promoting research dissemination and scholarly communication among the participants.

Of these submissions, four have been accepted and published in prestigious Scopus-indexed journals, a testament to the quality and relevance of the research produced. This success rate highlights not only the participants’ improved writing and research capabilities but also the effectiveness of the PLE-WfP platform in guiding and supporting users through the complexities of academic writing and the publication process.

## Discussion

The findings of this study offer valuable insights into the preferences and perceptions of Year-1 Ph.D. students at a Thai university regarding academic writing and publication support systems. These results build upon previous research, aligning closely with works by Strobl et al. (2019) and Wu et al. (2013) while also delving into personalized academic support. The specific elements highlighted by participants—relevance, customization, timeliness, stress reduction, and comprehensiveness—underscore the importance of tailored assistance throughout the academic writing process.

First, the study’s results reveal a strong preference among learners for personalized writing guidance over lecture-based approaches, citing benefits such as relevance, customization, and reduced stress. This preference highlights the importance of tailored support in shaping perceptions of L2 academic writing, which is supported by the research done by Busse et al. in 2022. Conversely, limitations of lecture-based instruction underscore the need for platforms addressing practical writing issues.

Second, participants attribute their enhanced writing skills and confidence to personalized guidance, emphasizing the impact of timeliness and customization. Engagement with an academic community through the platform is valued for emotional support and collaborative opportunities, contributing to positive perceptions of L2 academic writing, which is highlighted in Willison’s (2012) study.

Moreover, our investigation reaffirms the significance of emotional support in academic writing, echoing the sentiments of Huerta et al. (2017) and Laursen et al. (2017). It also sheds light on the necessity for structured emotional and financial support mechanisms within academic writing platforms, an area relatively underexplored in existing literature. Its commitment to fostering collaborative learning environments and community engagement, combined with a structured project development framework, marks a significant step forward in meeting the diverse needs of doctoral students, as highlighted by Joseph Jeyaraj et al. (2022)

and Li (2023). These findings underscore the multifaceted hurdles faced by young academics and emphasize the importance of support systems that address psychological and logistical barriers alongside skill enhancement.

Suggestions for platform enhancements, including technical support and community development, reflect learners’ desire for user-friendly, collaborative platforms. Overall, writing platform construction significantly influences perceptions of L2 academic writing and enhances learners’ writing competence.

However, it’s crucial to acknowledge the limitations of our study, particularly its focus on a specific demographic, which may limit the generalizability of the results to broader contexts. Engaging in a reflective dialogue, we must consider how these insights might vary across different cultural or academic settings. Future research should aim to broaden the spectrum of understanding by exploring the platform’s effectiveness and adaptability across diverse academic landscapes.

## Conclusion and future study

The imperative to publish in prestigious academic journals presents significant challenges for early-career researchers, particularly Ph.D. students, exacerbating the pressure to bridge the gap between nascent academic skills and the rigorous expectations of scholarly communication. In addressing these challenges, this study pioneers the integration of personal learning environment (PLE) concepts through the development of the PLE-WfP platform, grounded in the principles of scaffolding theory and the zone of proximal development (ZPD). The findings underscore the platform’s effectiveness in addressing the multifaceted needs of novice researchers by offering comprehensive support that extends beyond traditional academic aid.

Crucially, the PLE-WfP platform provides a revolutionary scaffolding system that not only addresses content, structural, and linguistic support but also delves into the critical yet often neglected emotional and financial realms of academic writing. This inclusive approach marks a departure from piecemeal strategies, heralding a holistic solution tailored to the intricate landscape of academic writing challenges faced by Ph.D. students.

Theoretically, this research enhances the scaffolding theory and ZPD within the context of academic writing, extending their applicability to the nuanced ecosystem of PLEs. This fusion of theoretical frameworks with the practical necessities of doctoral scholarship enriches our understanding of how various forms of support can be synergistically employed to reinforce academic writing and publishing skills, broadening the scope of these theories beyond traditional educational boundaries.

Practically, the PLE-WfP platform exemplifies an innovative approach to surmounting the hurdles encountered by emerging scholars. Its comprehensive design sets a new standard for academic support systems, offering a template that, if adopted, could significantly boost the support structure for Ph.D. students, thereby potentially increasing their publication output and success rates.

However, it’s important to note the limitations of this study. The research primarily focuses on first-year Ph.D. students from Stamford International University in Thailand, which may restrict the broader applicability of the findings. Future research could enhance the platform’s universality by examining its effectiveness across diverse academic cultures and stages of doctoral study. Additionally, the study mainly utilized information from students’ academic diaries, which might have led to overlooked data. A more detailed analysis could unveil deeper insights into student behaviors, emotional states, and external influences on their academic journey. Such findings could inform the development of more tailored features for the PLE-WfP platform.

Further, the incorporation of alternative research methodologies, such as learning analytics, could offer further insights into the efficacy and impact of the PLE-WfP platform, validating its role in supporting emerging scholars in the competitive arena of academic publishing.

### Data accessibility and transparency statement

The data supporting this study, available as supplementary files with the manuscript, consists of reflective diaries from 13 first-year Ph.D. students in educational leadership. These diaries, analyzed through structured coding, include responses to five targeted questions assessing the effectiveness of the personal learning environments-based writing for publication (PLE-WfP) platform. This analysis provides a comprehensive review of the platform's role in aiding academic writing and publication, highlighting its impact, the challenges faced by users, and its overall utility in facilitating doctoral students' publication endeavors.

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## Author contributions

XX conceptualized the project, performed the analysis, developed the methodology, provided resources, managed the software, and co-authored the original draft; JL partnered in conceptualization, took part in the investigation, co-designed the methodology, and co-wrote the original draft; HZ engaged in formal analysis, carried out research validation, and contributed to the manuscript's review and editing; YZ participated in the investigation, collaborated in validation, and played a role in manuscript editing.

## Competing interests

The authors declare no competing interests.

## Ethical approval

Ethical considerations for this study were strictly adhered to, following guidelines from Stamford International University in Thailand's Institutional Academic Board. The need for local ethical approval was driven by participant recruitment from Stamford International University and the collaboration with the World Sports Publisher for the PLE-WP project, aimed at assisting Ph.D. students with academic writing and publication. Emphasizing local ethical standards was essential for protecting participant welfare and rights. A detailed application covering the study's aims, methods, potential risks, and protective measures for participants was submitted to the university's IRB. Following a comprehensive review, the IRB granted approval (SIU202302), acknowledging the study's ethical integrity and dedication to maintaining participant dignity and confidentiality.

## Informed consent

Informed consent was diligently obtained from all participants involved in the study, ensuring adherence to ethical standards. Detailed consent forms, outlining the study's scope and participants' rights, were signed by participants. Documentation of this process is well-maintained and can be provided upon request during peer review or post-publication.

## Additional information

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1057/s41599-024-03094-2>.

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