



# Exploring Hybrid and Personalized Learning in Doctoral Education: A Case Study of Doctoral Students' Learning Experiences

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## ABSTRACT

**Gap:** Doctoral education is increasingly expected to accommodate diverse learner backgrounds and the professional commitments of working scholars. While hybrid and personalized learning models are often proposed as solutions to enhance flexibility in doctoral programs, empirical evidence on how these approaches shape doctoral students' learning experiences remains limited. **Objective:** This study aims to examine the learning experiences of students enrolled in a hybrid doctoral program in educational technology that integrates personalized learning principles. **Method:** Using a descriptive survey design, data were collected from eight doctoral students who participated in the program's initial onsite academic sessions. The survey explored four dimensions of the learning experience: perceived academic quality, learning interaction, personalized learning experience, and the overall learning environment. **Result:** The results indicate a high level of student satisfaction with the onsite sessions, with an average satisfaction score of 4.63 on a five-point scale. Students reported that the academic discussions were intellectually stimulating and that interactions with faculty members and peers fostered critical reflection and scholarly development. The findings also suggest that hybrid learning environments can balance academic rigor with flexibility, which is particularly valuable for doctoral students who are working professionals. **Novelty:** This study contributes new empirical insights into the early learning experiences of doctoral students in a hybrid doctoral program that integrates personalized learning principles, with particular attention to academic depth, intellectual interaction, and the development of doctoral identity.

## INTRODUCTION

Doctoral education has undergone significant transformation over the past two decades, not only in terms of interest and number of population but also growth and diversification, formalization, and modes of study (Taylor, 2023). Traditionally, doctoral programs were structured around an apprenticeship model in which students worked closely with supervisors while conducting independent research within a specific discipline. However, the changing landscape of higher education, rapid technological advancement, and increasing demands for interdisciplinary knowledge have prompted universities worldwide to reconsider how doctoral education is structured and delivered (Gardner, 2009; Golde & Walker, 2006).

In the Indonesian higher education context, where most doctoral students are active professionals, doctoral education faces a distinctive challenge. On the one hand, doctoral programs are expected to cultivate rigorous academic and research competencies; on the other hand, students must balance the competing demands of their professional and academic responsibilities. This tension raises important questions about which instructional modes can best support meaningful learning while accommodating the realities of doctoral students' lives. The challenge is further

complicated by the expanding expectations placed on doctoral education. Contemporary doctoral programs are expected not only to develop advanced research competencies but also to cultivate critical thinking, collaboration, innovation, and leadership in complex professional environments.

Doctoral learning is widely understood as a complex intellectual and social process through which students gradually develop research competence and scholarly identity. Beyond acquiring advanced disciplinary knowledge, doctoral students must learn to participate in the norms, values, and practices of academic communities (Golde & Walker, 2006). This process of doctoral socialization occurs through continuous interaction with supervisors, faculty members, and peers as students refine their thinking, test ideas, and engage in scholarly dialogue (Gardner, 2009). From a socio-cultural perspective, learning in doctoral programs involves engagement in communities of practice, emphasizing that knowledge development occurs through participation in collaborative intellectual communities (Arar et al., 2026; Stoten, 2019; Wenger, 2008). Within such environments, research discussions, seminars, and collaborative learning activities allow doctoral students to develop confidence, critical thinking, and academic identity as emerging scholars.

The quality of interaction within doctoral learning environments therefore plays a crucial role in shaping students' academic development. Studies have shown that meaningful intellectual dialogue between students and faculty members, opportunities for critical discussion, and engagement in collaborative research activities significantly enhance doctoral learning experiences and students' sense of belonging in academic communities (Gardner, 2010). Conversely, doctoral programs that rely heavily on individualized supervision without sufficient opportunities for peer interaction may lead to isolation and hinder students' academic development (Lovitts, 2002). A study conducted by Golding (2023) also raised concerns about how doctoral students often face crises due to a lack of appropriate support. In response, many universities have begun integrating structured learning activities such as doctoral seminars, cohort-based learning, and collaborative research discussions to support both intellectual engagement and scholarly community building (Jones, 2013).

Alongside these pedagogical developments, advances in digital technology have also reshaped learning environments in higher education. One notable development is the growing adoption of hybrid learning models, often referred to as blended learning. Hybrid learning integrates face-to-face instruction with online learning environments in order to combine the strengths of both modalities (Garrison & Kanuka, 2004). Within higher education, hybrid learning has been widely recognized for its potential to enhance flexibility, accessibility, and interactive learning opportunities (Arfat et al., 2025; Bennett et al., 2020; M.P. & Lathabhavan, 2025; Yalan & Marcial, 2025; Yaqin et al., 2025).

The effectiveness of hybrid learning is often explained through the Community of Inquiry (CoI) framework, which highlights the interaction among cognitive presence, social presence, and teaching presence as essential elements of meaningful learning environments (Garrison et al., 1999; Guo et al., 2025; Rawal, 2025). Cognitive presence refers to learners' ability to construct meaning through sustained reflection and discourse; social presence reflects participants' ability to present themselves as authentic members of a learning community; and teaching presence involves the design and facilitation of learning processes. When effectively integrated, these three elements

create a collaborative learning environment that supports both intellectual engagement and knowledge construction (Garrison & Vaughan, 2008).

Hybrid learning models may be particularly valuable in doctoral education because many doctoral students are adult learners who must balance academic study with professional responsibilities and personal commitments. Such models can enhance learning efficiency and performance (Al-Enzi et al., 2023), while also fostering critical thinking and research capabilities (Kayyali, 2026). The integration of synchronous face-to-face interaction with asynchronous online learning activities allows doctoral programs to provide intensive scholarly engagement while maintaining flexibility for working professionals (Means et al., 2013). Digital technologies such as online discussion platforms, video conferencing tools, and collaborative research environments can further support sustained academic interaction among geographically dispersed students and faculty members.

In addition to hybrid learning, contemporary higher education has increasingly emphasized personalized learning approaches that recognize the diverse backgrounds, interests, and learning pathways of students. Personalized learning refers to instructional approaches that allow greater flexibility in learning processes while supporting individual learners' intellectual development and goals (Pane et al., 2017). Personalized learning involves using information about a learner to inform instructional planning and educational decision-making that is specifically tailored to that individual (Beese, 2019). Rather than adopting a uniform instructional model, personalized learning environments enable students to pursue learning experiences that align with their prior knowledge, professional interests, and research aspirations.

Personalized learning is particularly relevant in doctoral education because doctoral students often enter programs with diverse disciplinary backgrounds, professional experiences, and research interests. Although limited research has examined the influence of personalized learning at the doctoral level, several studies have explored this concept within the broader context of higher education (du Plooy et al., 2024; Hughey, 2020; Makhambetova et al., 2021). Effective doctoral programs therefore need to balance individualized research development with collaborative intellectual engagement. Personalized learning in doctoral programs may take various forms, including flexible research topics, individualized supervision, adaptive learning activities, and opportunities for students to pursue research questions aligned with their professional contexts. Such learning environments can support the development of doctoral identity, through which students begin to see themselves as scholars capable of contributing original knowledge to their academic fields (Barnacle & Mewburn, 2010).

The principles of personalized learning also align closely with theories of adult learning. According to andragogy, adult learners are typically self-directed, bring valuable prior experiences to the learning process, and are motivated by learning that is relevant to their personal and professional goals (Knowles et al., 2012). Educational environments that recognize these characteristics – by emphasizing autonomy, practical relevance, and reflective learning – are more likely to foster meaningful engagement and sustained motivation among adult learners (Merriam & Bierema, 2013). As a result, doctoral programs that integrate flexible learning structures and individualized learning pathways may be particularly effective in supporting working professionals pursuing advanced academic study.

Despite the growing interest in hybrid learning and personalized learning in higher education, empirical research examining how these approaches are implemented within doctoral programs remains relatively limited. Understanding how doctoral students experience these learning environments is therefore important for designing doctoral programs that effectively support both academic rigor and student development.

This study aims to examine the early learning experiences of doctoral students in the first cohort of a newly established hybrid doctoral program in educational technology that integrates personalized learning principles. Specifically, the study seeks to: (1) examine doctoral students' perceptions of the academic depth of learning within the program; (2) explore the quality of intellectual interaction between faculty members and students; and (3) assess the extent to which the learning environment supports their development as emerging scholars.

## RESEARCH METHOD

### Research Design

This study employed an exploratory case study design to investigate doctoral students' learning experiences within a hybrid doctoral program that integrates personalized learning principles. Case study research is particularly appropriate for examining complex educational phenomena within their real-life contexts, especially when the boundaries between the phenomenon and the context are not clearly defined (Yin, 2017). In the present study, the case under investigation is the implementation of a hybrid doctoral learning environment within a newly established doctoral program.

The case study approach allows researchers to gain an in-depth understanding of participants' perceptions and experiences within a specific educational setting. In higher education research, case studies are frequently used to explore learning environments, program innovations, and institutional practices that may offer insights into broader educational developments (Merriam & Tisdell, 2015). In this study, the case study approach enabled the researchers to explore how doctoral students experienced the academic interactions, intellectual engagement, and learning environment during the initial onsite sessions of the program.

To obtain a comprehensive understanding of the case, the study utilized multiple sources of data, including quantitative survey responses and qualitative feedback from students. The survey data provided an overview of students' perceptions of different aspects of the learning experience, while qualitative comments from open-ended questions offered additional insights into how students interpreted and evaluated their learning experiences.

### Research Context

The study was conducted within a Doctoral Program in Educational Technology at a private university in Indonesia. The program was designed to address emerging needs in contemporary higher education by integrating hybrid learning structures with personalized learning principles. The hybrid learning model combines in-person classroom instruction with synchronous online learning conducted through real-time communication platforms such as Zoom and Microsoft Teams, as well as asynchronous learning activities delivered throughout the semester via the Moodle Learning Management System (LMS).

At the beginning of each semester, doctoral students participate in a structured onsite academic session that serves as an intensive academic orientation for doctoral study. These onsite sessions are designed to establish the intellectual foundation for doctoral research while fostering academic interaction among students and faculty members. During the onsite period, students attend a series of academic sessions covering core doctoral-level courses, including:

- 1) Philosophy of Science
- 2) Research Methodology
- 3) Learning Theories and Instructional Models
- 4) Personalized Learning

These courses are designed to introduce students to key epistemological perspectives, research methodologies, and theoretical frameworks that support doctoral-level scholarship. The onsite sessions also emphasize intellectual dialogue, collaborative learning, and academic reflection, allowing students to discuss theoretical concepts, exchange perspectives, and begin developing their research interests. Such interactions are intended to foster an academic community among doctoral students and support their transition into scholarly inquiry.

Following the onsite sessions, the remainder of the semester is conducted through a hybrid learning format that combines synchronous online meetings and asynchronous learning activities using the university's digital learning platform. This structure allows students, many of whom are working professionals, to engage in doctoral study while maintaining their professional responsibilities.

### Research Participants

The participants in this study were eight doctoral students enrolled in the first cohort of the doctoral program. All students in the cohort voluntarily participated in the survey after completing the onsite academic sessions. The participants represented diverse professional and educational backgrounds, including higher education, school education, industry, and non-professional sectors. A summary of the participants' demographic characteristics is presented in Table 1. To ensure participant confidentiality, pseudonyms are used when reporting demographic information and qualitative excerpts in this study.

**Table 1.** Demographic Profile of Participants

| Participant | Gender | Age Range | Professional Background  | Sector                     |
|-------------|--------|-----------|--------------------------|----------------------------|
| Daniel      | Male   | 30-35     | Educational Technologist | Industry                   |
| Lydia       | Female | 50-55     | Lecturer                 | Higher Education           |
| Adrian      | Male   | 35-40     | Lecturer                 | Higher Education           |
| Samuel      | Male   | 40-45     | Teacher                  | School Education           |
| Maria       | Female | 55-60     | Lecturer                 | Higher Education           |
| Clara       | Female | 35-40     | Homemaker                | Community/Non-professional |
| Jonathan    | Male   | 40-45     | Curriculum Coordinator   | School Education           |
| Michael     | Male   | 30-35     | Educational Technologist | Industry                   |

Because doctoral programs typically enroll relatively small cohorts of students, the sample in this study represents the entire population of the first cohort of the program. Including the entire cohort allowed the researchers to capture a comprehensive overview of students' perceptions and experiences within this particular learning environment. Within the case study framework, the small number of participants does not represent a limitation but rather reflects the focused nature of case study research,

which seeks to provide in-depth insights into a specific educational context rather than broad statistical generalization (Yin, 2017).

### Research Instrument

Data for this study were collected using an online survey questionnaire administered through Google Forms. The questionnaire was designed to capture students' perceptions of their learning experiences during the onsite academic sessions. The survey instrument was developed to evaluate several key dimensions of doctoral learning experiences, including academic quality, intellectual interaction, personalized learning experiences, and the overall learning environment. These dimensions were informed by literature on doctoral education, hybrid learning, and adult learning in higher education.

Most items were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale allowed students to express the degree to which they agreed with statements related to different aspects of the learning experience. In addition to the Likert-scale items, the questionnaire included several open-ended questions that invited students to describe the strengths of the onsite learning sessions and provide suggestions for improvement. These qualitative responses allowed participants to elaborate on their experiences and provided richer insights into how students perceived the learning environment.

The inclusion of both quantitative and qualitative responses enabled the study to capture not only overall satisfaction levels but also more nuanced perspectives regarding students' experiences in the hybrid doctoral learning environment. The main dimensions and indicators measured in the questionnaire are presented in Table 2.

**Table 2.** Research instrument

| Variables                                     | Dimensions                                                                                                                              |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Academic Quality of Learning                  | depth of academic material<br>integration between courses<br>intellectual stimulation of discussions                                    |
| Learning Interaction and Experience           | interaction between faculty and students<br>opportunities for critical reflection<br>implementation of personalized learning principles |
| Learning Environment and Program Organization | classroom facilities<br>technological support<br>program organization and scheduling                                                    |

### Data Analysis

The data analysis process involved both quantitative descriptive analysis and qualitative thematic interpretation, consistent with the exploratory case study design. Quantitative data obtained from the Likert-scale items were analyzed using descriptive statistics, including means and frequency distributions. These statistics were used to summarize students' perceptions across different dimensions of the learning experience, such as academic quality, learning interaction, personalized learning, and program organization.

Descriptive statistical analysis is commonly used in exploratory educational studies to provide an overview of participants' perceptions and to identify general patterns within the data (Creswell & Creswell, 2017). In addition to the quantitative analysis, responses to the open-ended questions were examined using thematic analysis. This process involved identifying recurring themes within students' comments regarding

the strengths of the learning experience and suggestions for improvement. The qualitative responses were then used to complement the quantitative findings by providing illustrative examples of students' experiences.

By integrating quantitative survey results with qualitative student feedback, this study aimed to provide a richer and more comprehensive understanding of how doctoral students experienced the hybrid learning environment. The combination of descriptive statistics and qualitative insights allowed the researchers to capture both the overall trends in students' perceptions and the deeper meanings underlying their learning experiences.

## RESULTS AND DISCUSSION

### *Results*

This section presents the findings of the exploratory case study examining doctoral students' learning experiences during the onsite sessions of a hybrid doctoral program. The findings reflect the perceptions and experiences of students who participated in the initial onsite academic activities. The analysis focuses on four key dimensions of the learning experience: overall satisfaction with the onsite program, academic quality of learning, interaction and intellectual engagement, and the learning environment. Descriptive statistics are used to summarize the quantitative results, while qualitative responses from open-ended questions provide additional insights into students' perspectives. A summary of students' perceptions of the onsite learning experience is presented in Table 3.

**Table 3.** Summary of Students' Perceptions of the Onsite Learning Experience

| Dimension                           | Mean Score (1-5) | Interpretation   |
|-------------------------------------|------------------|------------------|
| Overall Satisfaction                | 4.63             | Very high        |
| Academic Quality of Learning        | 4.63             | Very high        |
| Intellectual Discussion             | 4.50             | Very high        |
| Faculty-Student Interaction         | 4.63             | Very high        |
| Personalized Learning Experience    | 4.38             | High             |
| Learning Environment and Facilities | 4.63             | Very high        |
| Program Organization and Support    | 4.38             | High             |
| <b>Overall mean</b>                 | <b>4.54</b>      | <b>Very high</b> |

### **Overall Satisfaction with the Onsite Learning Experience**

The findings of this case study indicate a high level of satisfaction among doctoral students regarding the onsite learning sessions. On a five-point Likert scale, the average satisfaction score was 4.63 out of 5, indicating a very positive perception of the program. Among the eight respondents, five students (62.5%) reported being very satisfied, while three students (37.5%) indicated that they were satisfied with the overall learning experience. No respondents expressed dissatisfaction with the program.

In addition to the satisfaction measure, students were asked to indicate the likelihood that they would recommend the doctoral program to colleagues or peers. Responses were measured on a ten-point scale. The results showed an average recommendation score of 9.25 out of 10, indicating a strong level of endorsement for the program. Specifically, six students fell into the "promoter" category (scores of 9-10), while two students were categorized as "passive" (scores of 7-8). No respondents fell

into the detractor category. These results suggest that students generally perceive the program as valuable and would be willing to recommend it to others.

### **Academic Quality of the Learning Experience**

The findings indicate that students perceived the academic quality of the onsite sessions to be very strong. The average score for items related to the academic depth of course materials was 4.63 out of 5, suggesting that students viewed the learning experience as consistent with doctoral-level expectations. Students also reported that the courses offered during the onsite sessions were well integrated. The courses, Philosophy of Science, Research Methodology, Learning Theories and Instructional Models, and Personalized Learning, were perceived as mutually reinforcing components of a coherent academic framework for doctoral study.

The results further indicate that the learning activities stimulated critical thinking and intellectual reflection among students. The average score for items measuring the ability of discussions to promote critical thinking was 4.50 out of 5, demonstrating that students perceived the learning environment as intellectually engaging.

Qualitative responses from participants reinforced these findings. One participant noted that the onsite sessions provided opportunities to deepen conceptual understanding through interaction with both faculty members and peers:

*"The opportunity to ask questions and engage in direct discussions was very valuable. The lecturers were very open to students from any background, even for those who do not work in the field of education."* [Daniel]

Another student emphasized the value of interaction in strengthening their understanding of the course material:

*"The discussions helped sharpen my understanding through interaction with both lecturers and fellow students."* [Adrian]

Overall, these findings suggest that the academic structure of the onsite learning sessions effectively supports the development of doctoral-level intellectual engagement.

### **Interaction and Intellectual Engagement**

Interaction between faculty members and students emerged as one of the strongest aspects of the onsite learning experience. The average score for items related to faculty-student interaction was 4.63 out of 5, indicating that students perceived the learning environment as highly interactive. Students reported that discussions during the onsite sessions encouraged active participation and intellectual dialogue. Opportunities to ask questions, exchange ideas, and discuss research interests contributed to a learning atmosphere that supported critical reflection and collaborative inquiry. Qualitative feedback further emphasized the importance of these interactions. One participant commented:

*"The discussions became more lively, and we had the opportunity to get to know our peers better."* [Clara]

Another student highlighted the importance of intellectual exchange between students and faculty members:

*"There was a lot of intellectual exchange between students and lecturers. The lecturers' experiences were very rich and provided new insights for me." [Michael]*

The findings also suggest that the onsite sessions helped foster a sense of academic community among doctoral students. Many respondents indicated that direct interaction with peers during discussions strengthened their sense of belonging within an intellectual learning community. These findings align with previous research highlighting the importance of intellectual interaction and academic dialogue in doctoral education (Gardner, 2010). Meaningful academic interaction appears to play an important role in shaping doctoral students' learning experiences and scholarly development.

### Personalized Learning Experience

The study also examined the extent to which students perceived the learning environment as reflecting principles of personalized learning. The average score for items related to personalized learning was 4.38 out of 5, indicating that students generally perceived the learning approach as supportive of individual learning needs and research interests. Students reported that they felt respected as adult learners and that the learning environment allowed them to bring their professional experiences into academic discussions. Several respondents indicated that the program created opportunities for them to explore research topics that were relevant to their personal interests and professional contexts. One participant emphasized the importance of personalized learning in supporting their engagement in the course:

*"The lecturers were highly knowledgeable and emphasized personalized learning, which helped ensure that I did not feel left behind during the class discussions." [Jonathan]*

Another participant highlighted that the open learning environment allowed them to connect their professional experiences with academic ideas and research development. These findings suggest that the integration of personalized learning principles within the doctoral program contributed to a supportive learning environment in which students could engage with academic content in ways that were meaningful to their individual learning journeys.

### Learning Environment and Program Organization

Students also evaluated aspects related to the learning environment and program organization, including classroom facilities, technological support, and logistical arrangements. The average score for items related to learning facilities was 4.63 out of 5, indicating a very positive evaluation of the physical learning environment. Qualitative responses from students were further analyzed to identify recurring themes related to their learning experiences during the onsite sessions. A summary of these themes is presented in Table 4.

**Table 4.** Thematic Summary of Students' Qualitative Feedback

| Theme                   | Description                                                                            | Illustrative Student Feedback                                                                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Academic Interaction    | Students valued direct discussions and intellectual exchange with lecturers and peers. | <i>"The opportunity to ask questions and engage in direct discussions was very valuable. The lecturers were very open to students from any background." [Daniel]</i> |
| Intellectual Engagement | Discussions helped deepen conceptual understanding and stimulate critical thinking.    | <i>"The discussions helped sharpen my understanding through interaction with both lecturers and fellow students." [Adrian]</i>                                       |

| Theme                       | Description                                                                                                               | Illustrative Student Feedback                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personalized Learning       | Students appreciated the flexibility of the learning environment and the recognition of diverse professional backgrounds. | <i>"The lecturers emphasized personalized learning, which helped ensure that I did not feel left behind during the class discussions."</i> [Jonathan]     |
| Learning Community          | Interaction during the onsite sessions helped students build relationships and academic collaboration with peers.         | <i>"The discussions became more lively, and we had the opportunity to get to know our peers better."</i> [Clara]                                          |
| Suggestions for Improvement | Students suggested improvements in scheduling, preparation of materials, and hybrid learning support.                     | <i>"Course materials could be uploaded to the learning platform two days before the session so that students can prepare for the discussion."</i> [Clara] |

The themes presented in Table 3 illustrate how students experienced the learning environment and highlight both the strengths of the program and areas for improvement. Respondents reported that the classroom environment was comfortable and conducive to academic discussions. Technological facilities such as audiovisual equipment and internet connectivity were also perceived as functioning effectively during the onsite sessions.

In addition, students expressed satisfaction with the support provided by administrative staff and program organizers. The average score for items related to staff support and program organization was 4.38 out of 5, reflecting positive perceptions of the program's logistical management.

Despite the overall positive evaluation, several constructive suggestions emerged from the qualitative responses. Some students recommended that course materials be shared prior to the onsite sessions to allow more time for preparation. Others suggested adjusting the daily schedule of learning activities to allow more time for reflection and assignment completion. For example, one participant suggested:

*"Course materials could be uploaded to the learning platform two days before the session so that students have a clearer understanding of the upcoming class."* [Clara]

Another participant highlighted the need to improve support for students participating online in the hybrid sessions:

*"It would be helpful to have a Zoom administrator who can facilitate discussions, manage breakout rooms, and ensure that online participants can clearly see the lecturer and the whiteboard."* [Michael]

These suggestions provide valuable insights for improving the design and implementation of the onsite learning sessions for future cohorts.

## Discussion

The findings of this exploratory case study provide valuable insights into how doctoral students experience learning within a hybrid doctoral program that integrates personalized learning principles. Overall, both the quantitative survey results and qualitative feedback from students indicate that the onsite learning sessions were perceived as academically rigorous, intellectually engaging, and supportive of students' development as emerging scholars. These findings contribute to the growing body of research on doctoral education by highlighting the importance of structured learning environments, meaningful academic interaction, and flexible learning designs for contemporary doctoral programs.

One of the most significant findings of this study is the high level of overall student satisfaction with the onsite learning experience. The average satisfaction score of 4.63 out of 5 and the high recommendation score suggest that the program successfully created a learning environment that students perceived as valuable and meaningful. Qualitative feedback from participants further reinforced this finding, as students frequently highlighted the value of open discussions, intellectual exchange, and supportive interactions with lecturers and peers. These results support previous research emphasizing that doctoral students' learning experiences are strongly influenced by the quality of academic interaction and the intellectual climate of the program (Gardner, 2009; Golde & Walker, 2006). When students perceive the learning environment as intellectually stimulating and supportive, they are more likely to engage deeply in scholarly inquiry and develop confidence in their academic abilities. A positive academic climate can transform doctoral students' academic passion into ambidextrous learning (Chen & Zhao, 2024), while higher levels of academic engagement are also associated with greater research productivity (Khuram et al., 2023).

The findings also highlight the importance of academic interaction and intellectual dialogue within doctoral learning environments. Students consistently reported that discussions with faculty members and peers were among the most valuable aspects of the onsite sessions. Both quantitative results and qualitative excerpts illustrate how these discussions enabled students to exchange ideas, clarify complex theoretical concepts, and connect their professional experiences with academic perspectives. Such findings are consistent with Arar et al. (2026), Stoten (2019), and Wenger's (2008) concept of communities of practice, which suggests that learning occurs through participation in social and intellectual communities. In doctoral education, these communities play a crucial role in helping students gradually develop their scholarly identity and confidence as emerging researchers.

Another important finding relates to the role of structured academic sessions in supporting doctoral learning. While traditional doctoral education often emphasizes independent research and individualized supervision, the results of this study suggest that structured learning opportunities, such as intensive academic discussions and collaborative seminars, can significantly enhance students' intellectual engagement (Deroncele-Acosta et al., 2025; V. Uskov, 2023). The qualitative feedback provided by students further illustrates how these structured discussions created opportunities for deeper reflection and collaborative learning. This finding aligns with research suggesting that structured doctoral coursework and collaborative learning environments can reduce feelings of isolation and strengthen the sense of academic community among doctoral students (Jones, 2013).

The results aligns with prior studies (Arfat et al., 2025; Bennett et al., 2020; M.P. & Lathabhavan, 2025; Yalan & Marcial, 2025; Yaqin et al., 2025) that demonstrate the potential value of hybrid learning models in doctoral education, in which, by combining intensive onsite academic sessions with online learning components, hybrid doctoral programs can offer both intellectual depth and learning flexibility and interactive learning opportunities. This design is particularly relevant for doctoral students who are often working professionals managing multiple responsibilities. Consistent with the Community of Inquiry framework (Garrison et al., 1999; Guo et al., 2025; Rawal, 2025), the hybrid learning environment in this study appears to support cognitive presence through academic discussions, social presence through peer

interaction, and teaching presence through structured instructional design. In this context, hybrid learning enables doctoral programs to maintain rigorous academic engagement while providing flexibility for adult learners.

Furthermore, the findings indicate that personalized learning principles can contribute positively to doctoral students' learning experiences. Students reported that the learning environment respected their diverse professional backgrounds and allowed them to connect academic discussions with their professional contexts. Qualitative feedback also suggests that personalized learning approaches helped students feel more confident in participating in discussions and developing their research interests (Nedrehagen et al., 2025). This finding aligns with adult learning theory, which emphasizes the importance of autonomy, relevance, and experiential learning in adult education (Knowles et al., 2012). When doctoral programs acknowledge students' prior experiences and provide opportunities for individualized exploration of research ideas, students may become more motivated and engaged in the learning process.

The implementation of personalized learning within doctoral education may also play an important role in supporting the development of doctoral identity. Barnacle and Mewburn (2010) argue that doctoral identity formation involves a gradual process in which students begin to see themselves as scholars capable of contributing to academic knowledge. Learning environments that encourage intellectual exploration, open dialogue, and reflective inquiry may facilitate this transformation (Formenti & Jorio, 2019). The results of this study suggest that personalized learning approaches, combined with collaborative academic interaction, may help create conditions that support such identity development.

In addition to identifying the strengths of the program, the study also revealed several areas for improvement. Some students suggested that course materials could be distributed prior to the onsite sessions to allow more time for preparation. This findings align with the study conducted by Anthony Jnr (2024), Tangtrongchit (2024) and Wang et al. (2024) explaining that early distribution of learning materials is particularly important in hybrid learning environments because students rely on digital resources to prepare for learning activities and engage in meaningful discussions during synchronous sessions. Others recommended adjustments to the daily schedule to provide greater opportunities for reflection and assignment completion, which is in line with the study conducted by Fabian et al. (2024), van der Stap et al. (2024), and Welmer et al. (2025). Suggestions were also made to improve the management of hybrid sessions, particularly in facilitating interaction for students participating online. These insights highlight the importance of continuously refining instructional design and program organization to enhance the overall learning experience (Meenakumari et al., 2024).

Overall, the findings suggest that hybrid doctoral learning environments that integrate personalized learning principles may provide a promising model for contemporary doctoral education. Such environments can support meaningful intellectual interaction, accommodate the needs of adult learners, and foster the development of scholarly identity among doctoral students. As doctoral education continues to evolve in response to changes in higher education and professional practice, flexible and student-centered learning designs may become increasingly important for supporting doctoral student success.

## CONCLUSION

This study explored doctoral students' learning experiences during the onsite sessions of a hybrid doctoral program that integrates personalized learning principles. Drawing on quantitative survey data and qualitative feedback, the findings indicate that the learning environment was perceived as academically rigorous, intellectually engaging, and supportive of students' development as emerging scholars. Students reported high levels of satisfaction with the onsite sessions, noting that the academic content aligned with doctoral-level expectations and helped them understand key conceptual and methodological foundations of doctoral study. Meaningful discussions and active interaction between faculty members and students further enhanced the quality of the learning experience.

The findings highlight the central role of intellectual dialogue and collaborative learning in doctoral education. Opportunities for critical discussion and knowledge exchange enabled students to deepen their understanding of complex academic concepts while building connections with peers and faculty members. These interactions contributed to the development of a supportive academic community, which is widely recognized as an important component of effective doctoral learning environments. The results also suggest that hybrid learning models can effectively support doctoral education when combined with well-designed academic activities and opportunities for face-to-face scholarly engagement, offering both intellectual depth and flexibility for adult learners balancing academic and professional responsibilities.

Overall, this exploratory case study suggests that hybrid doctoral learning environments that incorporate personalized learning principles may offer a promising model for contemporary doctoral education. By fostering intellectual interaction, supporting adult learners, and allowing individualized research development, such programs can enhance doctoral students' engagement and scholarly identity formation. Importantly, these findings reinforce the central thesis of this study, that hybrid doctoral programs grounded in personalized learning principles can create intellectually rigorous and socially supportive environments that meaningfully enhance doctoral students' academic development. In addition, this study contributes to the literature on doctoral education by providing early empirical insights into how hybrid and personalized learning approaches can support meaningful academic engagement within doctoral programs.

## Implications

The findings of this study offer several implications for the design and implementation of doctoral programs in higher education. First, they highlight the importance of creating learning environments that foster meaningful academic interaction. Structured discussions, collaborative learning opportunities, and open intellectual dialogue between faculty members and students can strengthen doctoral students' learning experiences and support the development of vibrant scholarly communities. Second, the results suggest that hybrid learning models may provide an effective approach for doctoral education, particularly for programs serving working professionals. By integrating intensive onsite engagement with flexible online learning environments, universities can balance intellectual depth with accessibility for adult learners. In addition, incorporating personalized learning principles can further enhance students'

engagement by recognizing their diverse professional backgrounds and research interests.

## LIMITATIONS AND SUGGESTION

Despite these contributions, several limitations should be acknowledged. This study was conducted within a single doctoral program with a relatively small cohort of students. Although such cohort sizes are typical in doctoral education, the findings may not be fully generalizable to other programs or institutional contexts. Future research could extend this work by examining doctoral learning experiences across multiple programs or institutions to better understand how different learning designs influence academic development, research productivity, and doctoral identity formation. Longitudinal studies that follow students throughout their doctoral journey may also provide valuable insights into how learning experiences evolve over time and contribute to persistence and completion. As doctoral education continues to evolve in response to technological advancements and changing professional demands, further research on hybrid and personalized learning environments will remain important for informing the development of innovative and effective doctoral programs.

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