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Transformative teaching: the synergy of paragogy and peer assessment in teacher training courses

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Abstract

The need for more creative approaches that emphasise active and collaborative learning is being recognised by teacher education more and more. The insufficiency of traditional models in training educators for the needs of contemporary classrooms underscores the pressing need for revolutionary educational methods. By examining the experiences of 15 postgraduate student teachers engaged in curriculum and instruction courses, this qualitative case study investigates how paragogy and peer assessment might be integrated into teacher training programs. Three sources of data namely focused group interviews, assessment exercises, and classroom observations were garnered for data analysis. As part of the evaluation process for their courses, these students engage in peer assessment activities. Three major themes emerged from the study's thematic analysis, which involved participant interviews and classroom observations: ongoing professional and personal assistance, informal constructive criticism, and peer-assisted learning. The findings add to the continuing conversation regarding successful tactics in the current educational environment by highlighting the collaboration between paragogy and peer evaluation as a catalyst for innovative teaching approaches in educator preparation programs.

Keywords: Paragogy, peer assessment, postgraduate student, teacher education, transformative teaching

Introduction

In recent times, there has been a notable global shift in the teacher education sector, mostly due to the pressing demand for innovative and efficient teaching approaches. As educators deal with the complex issues of teaching in twenty-first-century classrooms, traditional pedagogical techniques are coming under more criticism (Chu et al., 2016). Effective teacher preparation today prioritises the deployment of new teaching approaches in light of changing educational landscapes (Darling-Hammond, 2021). Traditional teacher preparation programs' ability to prepare instructors to fulfil the varied and changing requirements of today's students is a source of increasing concern (Petrychenko et al., 2023). Critics contend that these courses frequently promote a "teach-to-the-test" methodology, leaving graduates unprepared to help students develop their critical thinking, cooperation, and problem-solving abilities (Chu et al., 2016). Concerned with this issue, academics are pushing for a revolutionary approach to teacher preparation. The goal of this strategy is to create reflective educators who can evaluate their own instruction, adjust to the different needs of their students, and promote a culture of lifelong learning in the classroom (Darling-Hammond, 2021). By creating a learning environment in the classroom that equips students for leadership roles in a world that is becoming more interconnected, transformative education goes beyond simply imparting knowledge and enables teachers to serve as change agents in society (Boylan et al., 2023). This offers a singular chance to investigate the application of transformative teaching ideas in the Malaysian setting. With an emphasis on equity and access, Malaysia's educational system is growing quickly (Siti Nur Fathanah Abd Hamid et al., 2024). But just like in other nations, Malaysia's teacher training programs struggle to keep up with the changing needs of classrooms in the twenty-first century (Nor Fazlin Mohd Ramli et al., 2023).

In Malaysian higher education, paragogy and peer assessment have enormous potential for creating transformative teacher training programs. A cooperative learning environment is promoted by paragogy, in which student-teachers study alongside their classmates (Herlo, 2014; Asomah et al., 2023; Chakyarkandiyil & Prakasha,

2023). This allows both parties to contribute to the knowledge base. This method gives student-teachers a sense of agency, which empowers them. Peer assessment is an additional transformative method in which student teachers offer helpful criticism of one another's work. In addition to improving critical thinking and self-reflection abilities, this technique fosters a sense of community and shared learning responsibility among student instructors (Javed, 2024). Peer evaluation is especially beneficial in developing the critical thinking and problem-solving abilities needed to teach effectively in the twenty-first century, according to research (Dutta et al., 2023; Iglesias-Pérez et al., 2022). Within teacher training programs, the integration of peer assessment and paragogy engenders a potent atmosphere that fosters transformative learning. Student-teachers develop the abilities and dispositions necessary to become skilled educators capable of creating comparable learning environments in their own classrooms through cooperative learning and constructive feedback.

Although there is substantial theoretical backing, there are a number of obstacles that must be overcome before paragogy and peer assessment may be used in practice, especially in Malaysian teacher preparation programs. Significant obstacles include inadequate resources, training gaps, and institutional constraints (Mohammad Arsyad Arrafii, 2023). These institutions frequently struggle with the shift from traditional lecture-based methods to more interactive and participatory approaches because of their deeply ingrained power structures and outmoded pedagogical practices. According to studies by Lukins et al. (2023) teachers' and students' lack of comprehension and acceptance of these approaches is the root cause of the implementation's irregularities. Insufficient training prevents many educators from managing peer evaluation processes or fostering peer learning environments, which results in less than ideal results. Peer-based learning systems may also face resistance from Malaysia's cultural setting, which has historically valued hierarchical ties in education.

A critical analysis of the long-term effects of peer assessment on Malaysian teaching practices is also necessary. Although the short-term advantages, such improved teaching abilities and self-efficacy, are widely known (Lam et al., 2022; Perveen et al., 2020), little is known about how these advantages last over time and show up in professional teaching practices. According to Asregid et al. (2023), peer evaluation can support reflective educators who enhance their pedagogical approaches over time. Colognesi et al. (2020), however, contend that the short-term benefits of peer assessment might not materialise into long-term gains in the absence of continuous assistance and professional growth. In addition to that, Li et al. (2020) conducted a longitudinal study that highlights the value of ongoing mentorship and institutional support in preserving and enhancing the skills learnt through peer assessment. This study emphasises how important it is to have a systematic framework that encourages reflective practice and continuous professional development after initial teacher training.

There are benefits and drawbacks to integrating technology-enhanced learning resources with paragogy and peer evaluation. Sroyprapai et al. (2025) claim that by offering scalable solutions and real-time feedback, digital platforms can significantly improve peer assessment and collaborative learning. Sánchez-Cruzado et al. (2021) do, however, issue a warning, pointing out that the efficiency of these tools hinges on their conception, application, and the level of digital literacy possessed by teachers and students alike. Inadequate training or badly designed tools can make problems worse, which can cause resistance or disengagement. Furthermore, Mathrani et al. (2022) draw attention to the digital divide as a crucial problem, noting that differences in access to technology may restrict the efficacy of these strategies in particular situations. As such, this study intends to explore the impact of peer assessment in learning performances of student-teachers.

Conceptual framework

Fundamentally, paragogy is based on socio-constructivist theory of learning, namely on Vygotsky's (1978) Zone of Proximal Development (ZPD) idea, which highlights the role of social interaction in promoting learning. According to Vygotsky (1978), students who work together can achieve greater cognitive levels than they would if they worked alone. By portraying students as co-creators of information, paragogy expands on this idea and increases their understanding and involvement (Muhammad Noor Abdul Aziz & Fathiyyah Abu Bakar, 2022) Comparably, the constructivist model—in which students actively develop their knowledge through evaluative activities—is the foundation for peer assessment. Peer assessment is a formative tool that promotes self-regulation and critical thinking, according to Zhang and Hwang (2023). According to Social Learning Theory (SLT), which draws heavily from Bandura's Social Cognitive Model from 1986, learning takes place in a social setting and is impacted by modelling, imitation, and observation. According to this theory, people learn new behaviours and information by watching others, emphasising the importance of social interactions and the environment in the learning process. Peer assessment offers a real-world implementation of SLT in higher education by letting students interact with and witness each other's work, which promotes social interaction and learning. Peer evaluation supports the concepts of SLT and develops students' metacognitive and cognitive skills, which in turn leads to a deeper comprehension of the material and the development of critical thinking (Deneen & Hoo, 2023).

Social Learning Theory (SLT) proposes that students can learn by seeing and giving feedback to each other by promoting peer assessment. Students are exposed to a variety of viewpoints, strategies, and tactics when they assess the work of their classmates. This exposure helps them recognise good practices and steer clear of

frequent mistakes. According to Bandura (1982), peer modelling helps students learn because it gives them explicit instructions on what to do by showing them examples of appropriate behaviours and results. Students might internalise these examples in a peer evaluation context, improving their performance in general and their academic practices in particular (Haro et al., 2024). Another important component of SLT is the development of self-efficacy, which is facilitated by the participatory nature of peer assessment. Bandura (1982) further advocated that self-efficacy is the conviction that one can achieve in a given circumstance. Peer assessment provides students with helpful criticism that can increase their self-esteem. Students' self-efficacy can be raised through positive experiences and constructive criticism during peer assessment activities. This will inspire them to take on more harder assignments and persevere under trying circumstances. In addition to improving academic achievement, this improved self-efficacy helps students get ready for professional settings where ongoing self-evaluation and development are crucial (Blondeel et al., 2024).

Peer evaluation also fits in nicely with the Social Learning Theory's (SLT) emphasis on learning as a reciprocal and collaborative process. This is especially true in higher education, where students can give and receive criticism because the positions of assessor and assessee are frequently interchangeable. Students in a learning community that is mutually accountable for each other's advancement are fostered by this reciprocity. Students' grasp of the subject is deepened as they gain the ability to provide constructive comments and build critical analytical abilities as assessors. As assessees, they learn insightful things about their own work from the viewpoints of their peers, frequently pointing out areas that they could have overlooked for improvement. This dynamic role-exchange reinforces the SLT idea that learning is a social activity and highlights the value of peer evaluation in fostering a reflective and cooperative learning environment in higher education (Madden, 2023).

Research objective

This study is guided by a primary research objective which is to explore the impact of peer assessment in learning performances of student-teachers.

Methodology

Research design

This qualitative case study explores the difficulties graduate student teachers encounter while practising paragogy and peer evaluation during the conduct of the course. Adopting an exploratory and investigative approach, qualitative research is especially well-suited for this kind of study (Creswell, 2008). In order to provide thorough and comprehensive insights into the particular context and complexity involved in the application of paragogy and peer assessment within a teacher training program, a case study design is able to provide valuable input for analysis (Yin, 2013).

Focused group interviews, assessment exercises, and classroom observations were employed as the data collection methods. Three stages of data collection were conducted: weekly observations in the classroom, student interviews at the end of the semester, and assignment reviews. Multiple data sources were offered by this triangulated technique, assuring the validity and comprehensiveness of the findings (Denzin, 2009). Using a modified observation sheet by Trujillo et al. (2009), observational data were gathered throughout peer assessment activities to record interactions, behaviours, and classroom dynamics in real time. By providing context, observations enabled researchers to compile data that participants might not have mentioned in journals or interviews. In order to provide longitudinal data on peer assessment and paragogy, participants were also required to keep reflective diaries during their coursework. These journals provided insights into their personal development, obstacles, and experiences throughout time (Veine et al., 2020). In order to collect extra information that would help the study succeed, focused group interviews were carried out with questions modified from Dutta et al. (2023). Their evaluation activities were also recorded. The interview protocol and observation checklist which were adapted from previous studies were then validated by two undergraduate programme coordinators who were directly involved in teacher training programmes.

Thematic analysis, a technique that finds, examines, and summarises themes in data, was used to analyse the data (Braun & Clarke, 2013). The six stages of the analysis were familiarising oneself with the data, creating preliminary codes, looking for themes, evaluating themes, defining and labelling themes, and creating the report. The coding process was done manually using Microsoft Excel. The process was shared with two experts who are professors in qualitative research as well as curriculum and their feedback were taken into consideration before the themes were generated. In addition to that, the university's ethics board granted ethical approval, and each participant provided informed consent. The aim, methods, and rights of the participants were explained to them in detail, including the freedom to discontinue participation at any moment and without consequence. By keeping

the research materials safely stored and anonymising all data, confidentiality was preserved (Allen & Wiles, 2016). The researchers also abided by the trustworthiness guidelines suggested by Lincoln and Guba (1985). Credibility was maintained by providing clear steps in conducting the study while confirmability was established by using member-checking.

Respondents of the study

Fifteen postgraduate student teachers from a higher education institution in Malaysia participated in the study. Purposive sampling, which focuses on people with relevant experience and understanding of the study issues, is a suitable strategy for qualitative research and was used to pick these participants (Palinkas et al., 2013). They were selected as participants because they are all google certified teachers and head of committee in their schools. These participants also have a range of professional and educational backgrounds, which adds richness to the study's findings and increases its validity through triangulation (Patton, 2002).

Findings and discussions

In the effort to understand the data collected, a thorough analysis was carried out and three themes emerged to answer the research question posed in the beginning of this paper.

Theme 1: Peer assisted learning

Numerous analyses emphasised the benefits of peer assistance. Teacher 3 gave an example, saying, "It was much easier for me to understand things after talking them out with a peer." We appeared to be instructing one another." In a similar vein, Teacher 7 said, "Working with my colleagues kept me engaged and motivated." Knowing that there is someone else going through the same thing as you is consoling." Classroom observations corroborated these findings. Students were observed confirming their understanding, asking questions, and explaining topics to one another during group exercises. For example, in Week 3, Teacher 2 encountered difficulties with Kurt Lewin's Model of Curriculum Change. Consequently, Teacher 1 provided clarifications, which enabled Teacher 2 to make progress by the end of the lesson. Teacher 12 further pondered, saying, "My peer helped me grasp the notion of 'Alternative and Authentic Assessment,' which I was finding difficult to grasp." I felt more assured once she gave me an explanation that just made sense to me."

Peer-assisted instruction fosters a more welcoming and enthusiastic learning atmosphere for students. When explaining things to one another, students frequently use familiar examples and simpler language, which helps students understand complicated concepts. This is consistent with the viewpoints of Sousa-Vieira et al. (2023) and Prestridge & Cox (2023) who highlight the increased motivation and involvement in social learning environments. Students that collaborate can build on one another's ideas, which fosters deeper comprehension and a lifelong enthusiasm in learning. Peers frequently provide different viewpoints that might improve the accessibility of the subject, which is especially beneficial for students who have trouble understanding the formal language or structure used by teachers. Peer explanations can aid in demystifying abstract ideas since they are based on common experiences and language. This is consistent with Vygotsky's (1978) theory of the ZPD, which holds that students grow when they collaborate with more experienced peers.

Misconceptions might proliferate because different students do not have the same comprehension level or capacity for clear communication of concepts. Consequently, it is critical to have systems in place to oversee and direct peer interactions in order to guarantee that the information shared is correct and helpful.

Theme 2: Informal constructive feedback

Informal feedback was often commended for its usefulness and timeliness. According to Teacher 14, "Receiving quick, constructive feedback from my peers helped me correct mistakes on the spot, which was helpful for my learning." Someone else said, "Informal feedback was on the spot, which encouraged me to apply suggestions immediately, making the learning process more dynamic and engaging." Six participants' additional remarks and observations from the classroom strengthened this topic. Teacher 2 said, "The immediate feedback helped me see where I was potentially naive around the topic before moving on." Teacher 4 continued, saying, "It was crucial that I received criticism right away in order to avoid forming poor behaviours. I felt as though I had a coach assisting me at every turn." Findings showed that informal comments frequently adopted a conversational style, which made it less scary and simpler to understand than formal evaluations. This, in turn, encouraged participants to be more forthcoming and receptive. Comparable experiences were reported by Teacher 11, who said, "I could implement the feedback in the next activity or session, which made the learning sink in more effectively."

Participants expressed gratitude for the informal feedback's promptness and relevance, although many had reservations about its thoroughness and depth. Since informal feedback is quick and provided on-the-spot, it

might not contain the same level of in-depth analysis as formal assessments, which could result in a superficial comprehension of difficult subjects. Real-time feedback is great for making quick adjustments, but it does not necessarily address the guiding ideas or long-term plans required for continuous development (Setterington et al., 2023; Li & Kim, 2024). Concerns over consistency and competency were also raised by the dependence on peer review. Peer evaluations might differ greatly based on the knowledge, experience, and communication abilities of the individual. Peer feedback was useful to some participants, but it was sometimes uneven, which could cause misunderstandings. Chong and Lin (2024) emphasise the need of teaching peers to offer accurate and constructive comments as a solution to this problem. Including teacher oversight can also assist guarantee the calibre and precision of the feedback given.

While immediate learning and practical application are greatly enhanced by real-time informal feedback, formal assessments guided by well-defined criteria must be balanced in order to maximise efficacy (Qadir et al., 2020). Formal assessments provide a methodical and comprehensive appraisal of a student's performance, addressing areas such as deeper conceptual knowledge, analytical abilities, and strategic thinking that may be overlooked in casual feedback. A strong foundation for teacher development can be produced by utilising a hybrid method that blends formal and informal feedback. This method maintains the breadth and accuracy of formal evaluations while utilising the immediate and pertinent nature of informal feedback. Completing the picture of a learner's development is made possible by combining periodic official assessments with informal peer feedback sessions. Clear criteria and rubrics that provide consistent and impartial performance measurements can further improve the efficacy of both forms of feedback.

Theme 3: Continuous personal and professional guidance

Peer evaluation encourages self-control and in-depth learning. Teacher 10 clarified, saying, "We get a better and deeper grasp of our own learning the more we analyse the work of others. Introspection is essential to our development." This perspective is supported by classroom observations, which demonstrate that students who participate in peer assessment are more likely to pinpoint areas that require work and create reasonable goals. Student teachers were seen in Week 4 debating feedback with their classmates, which resulted in a more sophisticated comprehension of the material. Peer learning also creates a welcoming environment where knowledge is jointly produced. Teacher 4 observed, "We feel more comfortable voicing our thoughts and taking chances in a peer-learning setting. This is because the instructor isn't watching us closely, which lowers inhibitions and promotes engagement." This was made clear in Week 10 when peer-led talks showed signs of increasing involvement and passion. Peer learning's collaborative format gives students the chance to investigate many viewpoints and hone their critical thinking abilities.

To get the most out of peer assessment and learning, you need ongoing professional and personal coaching (Hogg, 2018; Darvishi et al., 2022). As Teacher 7 put it, "It's not enough to implement peer assessment and peer learning; lecturers must guide and mentor students continuously." She highlighted the importance of continuing support. Students benefit from this instruction by strengthening their comprehension and honing their assessment techniques. Students were better at reacting to constructive criticism by posing queries and offering solutions during the lecturer's feedback and reflective sessions in Week 12. Teacher 13 said, "I can see myself, who at first found it difficult to evaluate myself and get criticism from peers, growing over time into a more self-assured and independent learner. This change demonstrates the effectiveness of regular assistance and thoughtful actions." Observation logs attested to Teacher 13's considerable improvement in academic performance, self-efficacy, and confidence after she had been quiet for the first three weeks.

According to Alt and Raichel (2022) as well as Ibarra-sáiz et al. (2020), the development of a reflective and independent learner depends on the synergy between peer evaluation, peer learning, and ongoing coaching. They underlined that knowing how to evaluate oneself is just as important for lifelong learning as learning how to criticise others. Teacher 7 said, "We take ownership of our learning when we participate in peer assessment. We start asking for criticism and making changes more proactively." The fourth teacher stated, "Peer learning transforms the classroom into a dynamic space where students are both teachers and learners." This dual role builds community and improves the educational process.

To sum up, peer evaluation and learning, bolstered by ongoing professional and personal coaching, are essential elements of a successful educational structure. These techniques foster critical thinking, self-control, and teamwork while improving academic achievement (Le & Nguyen, 2024; Sharma et al., 2024).

Conclusions and recommendations

Through the provision of alternate viewpoints and explanations that may be more relatable than those provided by standard teacher-led instruction, peer-assisted learning cultivates a collaborative environment in which students assist one another's academic advancement. Informal constructive criticism offers pertinent and timely insights that facilitate quick implementation (Ekambaram, 2024) and ongoing learning result improvement (Cao & Yu,

2023). It is imperative to counterbalance informal comments with formal evaluations in order to guarantee thorough comprehension and ongoing advancement. Ongoing mentorship and assistance are crucial for optimising the advantages of peer evaluation and learning, as demonstrated by the provision of consistent personal and professional guidance. This study emphasises how incorporating these tactics into an educational framework can have a profoundly positive impact by creating a dynamic learning environment that encourages cooperation, self-control, and critical thinking.

Subsequent investigations may examine how digital tools and platforms can improve peer-assisted learning. Examining the ways in which technology-mediated interactions—such as virtual reality environments, collaborative software, and online discussion forums—affect the efficacy and calibre of peer assistance could yield insightful findings. This research could potentially incorporate characteristics that support guided and structured interactions, which could alleviate issues with inconsistent peer feedback (Zhai et al., 2024). It is imperative to carry out longitudinal research to investigate the long-term impacts of ongoing professional and personal mentoring on students' academic and career advancement. This kind of study might follow participants over a number of years to evaluate the effects of long-term mentoring on self-control, critical thinking abilities, and professional advancement. It might also look at the differences in the effects of other kinds of coaching, like professional coaching, peer mentorship, and academic support.

Future studies should also look into the use of peer assessment and peer learning in a variety of educational contexts, such as various cultural, socioeconomic, and disciplinary settings, as well as their results. Studies that compare different areas, educational levels, and subject areas may be able to pinpoint best practices and required modifications. Learning how to customise peer evaluation techniques to fit the unique requirements and difficulties of different learner demographics would help create more inclusive and functional learning environments (Toyokawa et al., 2023).

Conflict of interest

The authors declare no conflicts of interest.

Author contribution

Muhammad Noor Abdul Aziz: Conceptualization, Methodology, Analysis.
Nurliyana Bukhari: Data curation, Writing- Original draft preparation.
Noor Aida Mahmor: Writing- Reviewing and Editing.
Nurahimah Mohd Yusoff: Supervision, Validation

Data availability statement

Data will be made available on request.

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