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Developing PG Students' Learner Autonomy through the PAH-Continuum: A Case Study

Gurnam Kaur Sidhu¹, Sofwah Md. Nawi², Kamalanathan Ramakrishnan¹, Du Ruofei³

¹ Faculty of Education, Languages and Psychology, SEGi University, Petaling Jaya, Malaysia.

² Academy of Language Studies, Universiti Teknologi MARA Cawangan Johor, Segamat, Malaysia

³ School of Education, Linyi University, Linyi, China

gurnamgurdial@segi.edu.my, sofwah@uitm.edu.my, kamalanathanramakrishnan@segi.edu.my, durofeifei@lyu.edu.cn
Tel: +60361452777, +6079352195

Abstract

To enhance the current postgraduate educational learning environment, this quasi-experimental case study examined the implementation of the Pedagogy-Andragogy-Heutagogy (PAH) Continuum as an instructional framework for developing basic competencies and learner autonomy among 50 postgraduate students. This is in response to the high attrition rates and students' failure to graduate on time, afflicting the quality of postgraduate education in Malaysia. Data were collected via pre and post-tests, a questionnaire, and focus-group interviews. The findings revealed significant improvement in the students' critical reading and research skills, while their learner autonomy level was moderate due to personal and cultural limitations.

Keywords: learner autonomy; PAH Continuum; postgraduate students

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1.0 Introduction

The effect of the current internationalisation and democratisation of education across the globe has witnessed exponential growth in all education sectors, including postgraduate (PG) education. Due to this proliferation, the postgraduate educational learning environment, especially the presiding ethos and characteristics, has changed overnight, resulting in a critical call for immediate attention. Despite the significant growth, PG education in Malaysia has been plagued by high attrition rates and the student's failure to graduate on time due to limited language and research skills and their inability to take responsibility for their learning (Sidhu et al., 2021). At the same time, there is a need for a conducive research learning environment to enable PG students to complete their research. According to Bates (2019), this learning environment refers to not only the physical aspects but also includes the culture presiding the ethos and characteristics of how individuals interact and treat each other, encompassing the organisation of the educational setting to facilitate the learning process.

As PG students are expected to be the creators of new knowledge, they must be able to show critical and independent learning behaviours that would enable them to perform academic research activities. Consequently, postgraduate students' competencies need to be supported to reach independence. At the same time, there is a need for a conducive research environment to enable PG students to complete their research. As proposed by Zaaba et al. (2015), three factors need to be fulfilled, namely "students' development process in

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academic research, students' utilisation of the support system of the postgraduate centre, and the relationship between the student and the supervisor" (p.187).

The PAH Continuum in this study is an instructional framework that embraced the teaching and learning philosophy whereby students were guided through a six-month program to enhance their essential competencies via a pedagogical framework that guided respondents to move from complete dependence (pedagogy) to independence (heutagogy) to help them develop learner autonomy. Therefore, this study aimed to determine the effectiveness of the Pedagogy-Andragogy-Heutagogy (PAH) Continuum. Specifically, it examined the effectiveness of improving students' essential competencies in reading, writing, research skills, learner autonomy and self-management skills to take responsibility for their learning.

2.0 Literature Review

The following section will briefly discuss a review of related competencies in postgraduate study, learner autonomy, and a focus on the PAH Continuum.

2.1 Basic competencies in postgraduate study

Research skills, critical reading skills, academic writing skills, and digital literacy skills are essential for postgraduate study as students need to sieve through volumes of literature and make critical decisions before writing their thesis. However, studies have found that PG students possess somewhat limited critical reading skills in analyzing and interpreting reading materials (Shamida, Sidhu & Nawi, 2021). Similarly, writing skills that underpin academic success are also limited regarding the content, organization, and language accuracy (Lim et al., 2016). Muthukrishnan et al. (2022) highlighted that PG students fail to graduate on time due to limitations in research skills such as research design, instrumentation, data analysis, and interpreting findings. They also recorded limited ability in digital literacy, displaying moderate knowledge in sourcing information and utilizing e-resources for data analysis and interpretation. All these limitations have become an issue of grave concern among various parties ranging from supervisors to universities, stakeholders, and employers. These limitations often result in most postgraduate students becoming somewhat dependent on their supervisors and consequently dropping out or failing to graduate on time. To address this changing postgraduate learning environment, Sidhu et al. (2021) emphasize the need for PG students to embrace learner autonomy.

2.2 Developing learner autonomy among postgraduate students

To complete their study, PG students must possess basic competencies and the ability to take ownership and responsibility for their learning. Therefore, they must develop learner autonomy (LA) which focuses on learners displaying a proactive attitude towards learning. Holec (1981), the father of autonomous learning, defines learner autonomy as the ability to take charge of one's learning, making it a prerequisite for learning effectiveness and a significant instructional goal for success in postgraduate studies. LA, which develops critical thinking and learning responsibility, is recognized as an important instructional goal for success in postgraduate studies (Boonma, 2018).

Instructors play a crucial role in the implementation and development of LA. Abdullah and Evans (2012) found a strong and significant correlation between skill development with independent learning and self-efficacy. This, in turn, would encourage them to reflect positively and initiate efforts to acquire skills for enhancing the overall research experience (Zimmerman, 1989). Providing postgraduate students with opportunities to act autonomously and develop confidence is key to developing PG students who have the independence they need to succeed in their studies. However, instructors encounter difficulties promoting and implementing LA at the postgraduate level as most of them lack a clear understanding of implementing LA effectively (Swatevacharkul, 2009).

The above discussion demonstrates the drawbacks postgraduate students face in terms of their essential competencies and the need to embrace LA. This study attempts to enhance PG students' basic competencies and to help develop learner autonomy among PG students via an instructional framework based on the PAH Continuum.

2.3 PAH continuum

Researchers such as Garnette and O'Beirne (2013) postulate the nexus of the PAH (pedagogy, andragogy, and heutagogy) Continuum as a framework that begins with a known subject and the delivery where the teacher is confident (pedagogy) and moves on to motivating and negotiating the learning process with students (andragogy) and offer creative ways in which learners can take more responsibility for their learning and express what they have learned (heutagogy). The nexus of the PAH Continuum is based on established grounded learning theories of constructivism and humanism. In pedagogy, knowledge is held and controlled by the teacher, who also determines how, what, and when the learning occurs. Andragogy, based on the theory of adult learning postulated by Knowles, rests on the five fundamental principles of self-concept, prior experience, readiness to learn, orientation, and motivation to learn. This approach assumes that students are more capable of becoming self-directed and motivated learners. In contrast, the heutagogy perspective is based on the theory of self-determination and the importance of autonomy for development and well-being put forward by Deci and Ryan (2019) alongside the humanistic and constructive principles that view the student as an independent, self-determined learner who can seek guidance and negotiate access to learning resources, as and when required as they possess the competence, autonomy, and relatedness (Luckin et al., 2010).

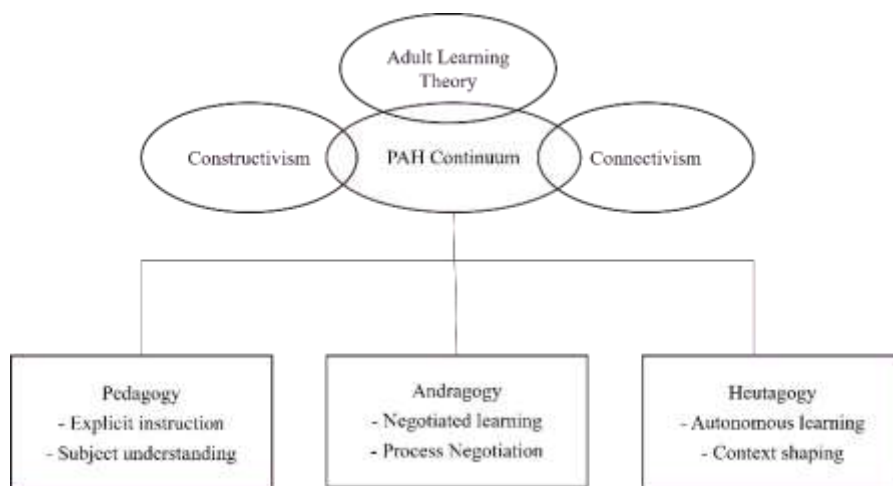


Fig. 1: PAH Continuum framework

The PAH continuum, which is outlined by Garnette and O'Beirne (2013), sees the locus of control shifting from the teacher (pedagogy) to being shared (andragogy) and to be determined by the learner (heutagogy). Typically, the association between these three approaches is related to the level of educational inquiry. Learners are assumed to progress from pedagogy to andragogy and eventually to experience heutagogy. The PAH continuum is also a form of scaffolding, but it is aimed more at releasing the inherent agency in students who have become passive learners rather than increasing conceptual complexity. Blasche (2019) notes there is limited evidence of the potential of this continuum in developing self-determined learners and hence this study hopes to address this gap.

3.0 Methodology

Utilising the PAH Continuum as an instructional framework, this study explored its effect on enhancing PG students' competencies in reading, writing, research skills and learner autonomy. The implementation was based on the ADDIE Model (Analysis, Development, Design, Implementation, Evaluation). First, a need analysis was conducted via three pre-tests to establish respondents' current reading, writing, and research skills. Then the PAH Continuum framework was designed, followed by the development of resources and activities. The implementation was conducted in three phases moving from complete teacher dependence (pedagogy) to moderate guidance (andragogy) and entire dependence (heutagogy). Finally, the effectiveness of the PAH Continuum was evaluated via similar post-tests and interviews.

The study was conducted in a local private university in Malaysia involving 50 first-semester PG students who had just enrolled in a PhD (Education) research-mode programme. The study utilized a quasi-experimental case study as there was no control group, and the sample was not randomly selected. All data were collected F2F and involved pre and post-tests, a questionnaire and five focus group interviews involving 25 volunteer students. The tests were administered F2F to evaluate respondents' critical reading, writing and research skills. The questionnaire investigated respondents' self-perceived perceptions of their reading, writing, research, learner autonomy skills and challenges faced in the PG study. The focus-group interviews investigated the effectiveness of the PAH Continuum and were conducted via the Zoom platform. Validity and reliability of all instruments were conducted via a pilot study involving 32 postgraduate students from another faculty in the same university. The quantitative data were analysed using SPSS Version 24, while the qualitative data from interviews were analysed using a thematic approach based on Braun and Clarke's (2019) six-phase framework. It began with data familiarisation, generating initial codes and searching for themes. Then the themes were reviewed, defined, and named before the final results were tabulated.

Triangulation of data was also conducted as it helped enhance the validity and to help provide an in-depth understanding of the effect of the PAH Continuum. Creswell and Creswell (2018) highlight that besides offering greater generalizability of results obtained in terms of applicability, such a design helps to minimise threats to ecological validity as the study is conducted in the natural environment, and hence the problems of artificiality do not arise.

4.0 Findings

This section provides a brief description of the main findings of the study. The study involved a total of 50 respondents, where approximately 60% were females, and a majority were between the ages of 30 and 40 years old. All were pursuing their PhD (Education) with English as their Second (ESL) or foreign (EFL) language. A large majority were working as educationists in schools and institutions of higher learning. The respondents sat for similar pre and post-tests in a bid to examine their reading, writing, and research skills before and after the six-month PAH-Continuum Training program. The following section presents the findings of the pre and post-tests for each competency.

4.2 Student performance and level of autonomy in critical reading skills

In terms of developing respondents' critical reading skills, the results presented in Table 1 reveal that there was a significant increase displaying the positive effect of the PAH continuum training programme.

Table 1. Pre and post-test results for critical reading skills (n=50)

Items	Pre-test	Post-test	Mean difference	t	Sig. (2-tailed)
Summarizing	3.46	4.42	.96	5.09	.000
Making inferences	3.28	4.06	.78	4.27	.000
Synthesizing	3.02	3.75	.73	4.12	.000
Drawing conclusion	3.06	3.82	.76	4.19	.000
Overall	3.20	4.01	.81	4.93	.000

Scale: 1=Weak, 2= Limited, 3=Fairly, 4= Good, 5= Excellent

This improvement was also articulated by respondents during interviews and almost all 25 respondents emphasized that the critical reading activities were the most beneficial during the PAH Continuum training program. A few students stressed that they were now capable of reading journal articles and research materials with a more critical stance. Respondent 12 from Focus Group 4 stated *"Under the PAH Continuum I not only improved my reading skills, but I think I also learned how to read journals quickly. I can now skim and scan the internet websites and pick out quickly journal articles... I also have learned how to read journal articles more effectively... I also like... the YouTube video clips and exercises that the lecturers give us (R12-FG4).*

4.3 Student performance and level of autonomy in academic writing skills

Findings in Table 2 show that though there was an increase in students' mean scores for writing, the t-test results indicated no significant increase. The qualitative data however revealed a large majority expressing positive views towards the training in enhancing their academic writing skills such as 'summarizing information from articles' and 'writing good conclusion'. In terms of developing autonomy in academic writing, confidence was rather low. Out of the 25 respondents, three (12%) admitted to their ability to work and continue learning whilst 8 (32%) expressed moderate readiness for learner autonomy in writing. The remaining 14 (56%) claimed they still needed much help and guidance from their supervisors.

Table 2. Pre and post-test results for academic writing skills (n=50)

	Pre-Test	Post-Test	Mean difference	t	Sig. (2-tailed)
Summarising	3.07	3.12	.05	1.21	.452
Analysing	2.83	3.01	.18	2.45	.256
Synthesising	2.89	2.95	.06	1.34	.498
Overall	2.93	3.03	.10	2.12	.214

Scale:1=Weak, 2= Limited, 3=Fairly, 4= Good, 5= Excellent

4.4 Student performance and level of autonomy in research skills

Findings in Table 3 exhibit that the PAH Continuum training enhanced students' research skills as there was a significant increase in students' acquisition of research skills.

Table 3. Pre and post-test results for research skills (n=50)

	Pre-Test	Post-Test	Mean difference	t	Sig. (2-tailed)
Research paradigm	3.23	3.90	1.00	5.21	.000
Research problem	2.67	3.82	.95	5.05	.000
Research methodology	2.60	4.20	1.10	5.94	.000
Data analysis and interpretation	2.79	3.95	1.16	6.23	.000
Overall	2.82	3.97	.77	4.21	.000

Scale:1=Weak, 2= Limited, 3=Fairly, 4= Good, 5= Excellent

This was further validated during interview sessions as a large majority voiced enhancement in research skills. Approximately six (24%) respondents claimed they are more confident and capable of working on their own in writing their methodology chapter while the remaining 19 (76%) expressed a moderate level of readiness and autonomy with regard to working on their own. Overall, the sentiment conveyed was that the PAH-Continuum program was moderately effective in instilling learner autonomy in research skills. For example, Respondent 10 (Focus Group 4) explained that *"by joining this program, I am more confident with research skills, in terms of expressing my research objectives and other details that follows such as conceptual framework... I now know how to... to complete the research... I think I can now work on my own (R10-FG4).*

4.5 Student perceptions of their overall autonomy in postgraduate study

Data presented in Table 4 display that the respondents' level of autonomy was at the moderate (M=3.50) level. The highest level of confidence was expressed in their ability to take responsibility for their own learning (M=4.56) followed by their ability to organize learning

materials (M=4.34) as well as to set and plan their learning (M=4.12). They displayed a moderate level of confidence with respect to time management (M=3.87) and limited ability in monitoring (M=2.18) and evaluating (M=1.89) their own learning.

The focus group interview sessions however displayed a mismatch with quantitative data findings. One apparent mismatch was that almost all respondents felt that though they were aware of their responsibility to take charge of their own learning, they were not fully autonomous to work on their own. All agreed they still had a long way to go, and this was succinctly expressed by Respondent 12 (Focus Group 5) when she expressed the following: *I know I am responsible for my thesis... but I cannot say I can do the thesis on my own... I need lots of help from my friends and my supervisor, I have lots of learn about thesis writing... but this program did help and teach me a lot of things like reading, writing, research, how to manage time and data, it is very good program for me, and I think for all the PhD students here."*

Table 4. Respondents' Self-Perceived Level of Autonomy in PG Study

I am confident in...	Mean	SD
setting my personal learning goals	4.18	.766
planning my own learning objectives	4.12	1.009
locating & organizing learning materials	4.34	.341
managing my time / deadlines in PG program	3.87	.432
monitoring my learning process	2.18	.680
evaluating my learning process	1.89	.322
taking responsibility for my own learning	4.56	.832
Overall	3.59	.626

Scale: 1= Strongly Disagree, 3= Almost Agree, 4= Agree, 5= Strongly Agree

5.0 Discussion

In the six-month PAH Continuum Instructional program, respondents were guided to develop learner autonomy in three competencies for PG study, namely reading, writing, and research skills. All 50 respondents unanimously agreed that the program was successful in helping them enhance their essential competencies as the training guided them from complete dependence (pedagogy) to gradual independence (andragogy and heutagogy) within the context of a hybrid learning environment. The findings indicate that the PAH Continuum framework fulfilled the requirements of a conducive research learning environment for PG students (Zaaba et al., 2015).

A majority also highlighted that they valued the F2F and online interactions and discussions with their peers and lecturers, which has been noted by Fotiadou, Angelaki, and Mavroidis (2017) as a crucial element of autonomous learning. This aspect of pedagogy encouraged under the PAH Continuum is also considered valuable in promoting academic integration, especially in the case of first-year PG students (Byl et al., 2016).

Another positive element was the availability of resource materials that allowed them to work independently based on their learning needs. Providing students with materials for their revision aligns with the theories of democratising cognitive learning resources as postulated by Holec (1981). This is crucial to help move the locus of control from instructors to students (Kalyaniwala & Ciekanski, 2021), leading to autonomous learners' development.

Though students viewed the PAH continuum positively regarding skill enhancement, they expressed less confidence and moderate ability in learner autonomy. They felt they did not possess the confidence to work independently in writing their thesis but could manage their postgraduate study on their own. This could be due to respondents coming from a teacher-dependent learning environment in schools or 'role ambiguity' in online learning, as three-quarters of the activities were conducted online due to the university's closure during the Covid-19 lockdowns. Kohan et al. (2017) noted that role ambiguity is a barrier to effective online learning as it may blur the agreeable standard or guideline of the behaviours and roles, leading to a mismatch of expectations between students and instructors, which would affect the development of self-directed learning.

Nonetheless, the respondents felt they were moderately autonomous and more capable of taking responsibility for their learning in terms of critical reading, writing, and research skills, indicating behaviours and predispositions towards more self-directed learning at the postgraduate level. Some, however, felt that their supervisors were still the 'experts' and would, to a certain extent, depend on them. As investigated by Qi (2022), although the respondents in his study have the mindset of autonomous learners, their behaviour contradicts their idea due to cultural influences such as not wanting to "lose face". Loh and Teo (2017) note that such personal and cultural factors often result in teacher-dependent passive learners, especially in the Asian educational learning environment. These may have hindered them from achieving their full potential in developing learner autonomy.

6.0 Conclusion & Recommendations

This study explored an initiative to enhance PG students' learner autonomy in three essential competencies, namely critical reading, academic writing, and research skills for PG study via a six-month PAH Continuum training program. Though students' competencies in critical reading and research skills significantly improved, their academic writing skills left much to be desired. Similarly, their autonomy level was moderate, indicating that they were not entirely determined learners (heutagogy), capable of taking full responsibility for their learning.

To conclude, it must be stressed that this study has its share of limitations as it involved a small sample of 50 PG students from only one private university, implying limited generalization of the findings. Nonetheless, the qualitative data highlighted that they held a positive perception of the PAH-Continuum instructional program, which indicates that its implementation can enhance the learning environment of

postgraduate study and the ethos of PG students. This also implies the need for PG programs to utilize frameworks such as the PAH Continuum to foster learner autonomy, considering influences such as the cultural background. With the new emerging technologies alongside this framework, learners can be trained to gradually shift from teacher dependence to complete independence and capable of becoming lifelong learners.

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Paper Contribution to Related Field of Study

This paper provides both theoretical and practical implications for the burgeoning postgraduate learning environment and supervision. It puts forward a viable instructional framework (PAH Continuum) to help address the issues of attrition and low graduation level among postgraduate students. Correspondingly it also contributes to the theory of andragogy and self-determined learning behaviors (heutagogy).

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