Journal of Education, 2026
Issue 103, http://journals.ukzn.ac.za/index.php/joe http://dx.doi.org/10.17159/2520-9868/i103a04

The influence of a fully online postgraduate carousel model course structure on self-directed learning

Sumayah Ebrahim

Department of Education Leadership and Management, Faculty of Education, University of Johannesburg, Johannesburg, South Africa
sumayahe7@gmail.com
https://orcid.org/0000-0002-0029-8607

Suraiya Rathankoomar Naicker

Department of Education Leadership and Management, Faculty of Education, University of Johannesburg, Johannesburg, South Africa
snaicker@uj.ac.za
https://orcid.org/0000-0003-3796-5028

(Received: 29 April 2025; accepted: 9 March 2026)

Abstract

The growth of online learning has intensified the importance of self-directed learning (SDL) in higher education, particularly in programmes that employ a carousel model of course delivery. In this study, we aimed to explore how the course structure of fully online postgraduate programmes using a carousel model influences students' self-directed learning. Grounded in the modified Community of Inquiry framework, our study examined SDL from the perspective of cognitive, social, teaching, and learning presences. We adopted a qualitative case study approach involving semi-structured interviews with 20 participants, comprising lecturers, teaching assistants, and postgraduate students from two fully online programmes at a South African university. The findings indicate that while the carousel model offers flexibility that can support SDL, its condensed structure and accelerated pace constrained opportunities for deep learning and hindered the development of self-directed learning skills, particularly among students new to the programme. We recommend adjustments to module duration, the introduction of orientation processes, and refined learning management system practices to better support SDL in online carousel model programmes.

Keywords: self-directed learning, online learning, carousel model, higher education

Introduction

In an increasingly complex and rapidly evolving educational landscape, the capacity for learners to assume responsibility for their own learning has become a critical requirement for success in higher education (Du Toit-Brits, 2020). The expansion of online learning has altered fundamentally traditional teaching and learning practices, necessitating approaches that

actively support autonomy, adaptability, and lifelong learning (Giddings, 2015; Jerald, 2009; Organisation for Economic Co-operation and Development, 2009). One key capability underpinning lifelong learning is self-directed learning (SDL) (Tekkol & Demirel, 2018; World Economic Forum, 2019).

SDL refers to the process in which individuals take the initiative in diagnosing their learning needs, formulating goals, identifying appropriate resources, implementing learning strategies, and evaluating learning outcomes, with or without the assistance of others (Knowles, 1975). SDL is recognised widely for its role in promoting lifelong learning (Loeng, 2020) and enhancing personal autonomy and adaptability in changing professional contexts (Candy, 1991). In higher education, particularly in the context of the Fourth Industrial Revolution, the development of SDL is viewed increasingly as essential for both academic success and long-term professional competence (Du Toit-Brits, 2020).

As higher education institutions expand their online offerings, alternative programme structures have emerged to accommodate the needs of diverse and often employed postgraduate student populations. One such structure is the carousel model of course delivery, in which modules are offered in a continuous, rotational sequence rather than in fixed academic semesters (O'Dwyer, 2019). This model allows students to enter programmes at many different points during the academic year and to progress through modules in a flexible manner. In theory, the flexibility and autonomy associated with the carousel model align closely with the principles of SDL. However, the condensed timelines and accelerated pace that characterise many carousel-based programmes may also present challenges for sustained engagement and deep learning (Ebrahim, 2024).

Although a growing body of literature has examined SDL in online and blended learning environments and separate studies have explored the design and implementation of carousel models in higher education, there is a notable lack of research that investigates explicitly how the structural features of fully online postgraduate carousel programmes influence students' SDL. In particular, limited attention has been paid to how aspects such as module duration, pace, workload, and programme entry points shape students' capacity to plan, manage, and regulate their learning in such programmes. This gap is especially evident in the context of South African higher education, where online postgraduate programmes increasingly serve working professionals with varied educational backgrounds and levels of readiness for SDL.

The aim of this study was, therefore, to explore how the course structure of fully online postgraduate programmes that employ a carousel model of delivery influences students' SDL. The study was guided by three objectives:

1. To examine how students, lecturers and teaching assistants experience self-directed learning in fully online postgraduate carousel programmes.
2. To identify specific features of the carousel model that support or hinder the development of self-directed learning.
3. To explore how teaching practices and learning technologies in the carousel model shape opportunities for self-directed learning.

In addressing these objectives, we sought to answer the following research question:

> How does the course structure of fully online postgraduate carousel model programmes influence self-directed learning?

By responding to this question, our study contributes to the literature on online postgraduate education by offering empirically grounded insights into the relationship between programme structure and SDL, with implications for course design, teaching practice, and institutional policy.

Review of related literature

The carousel model of programme delivery

A growing body of literature has examined the implementation of carousel models for online course delivery (Moodley et al., 2023; O'Dwyer 2019; Phillips, 2023). However, tracing the origins of this model remains challenging. Mancini and colleagues (2018) attributed the formal development of the carousel model to the University of Texas at Arlington College of Nursing and Health Innovation, where it was implemented in a Bachelor of Science in Nursing programme. The primary objective was to offer a high-quality, accessible, flexible, and affordable online qualification. Similarly, O'Dwyer (2019) described the redesign of a traditional face-to-face programme into an online carousel format to accommodate diverse student needs and reduce attrition.

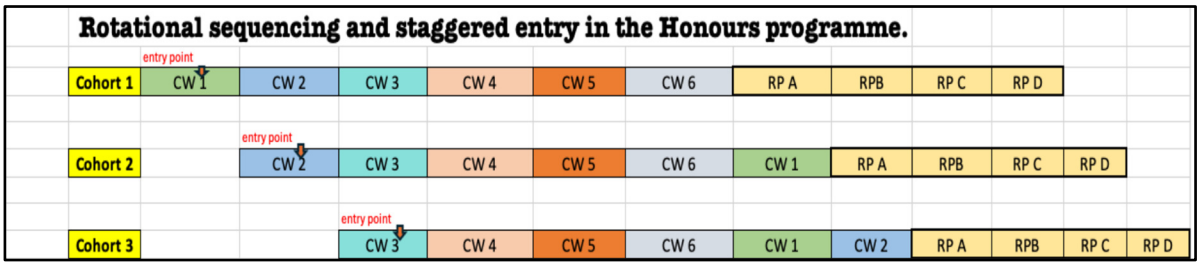
The carousel model is characterised by rotational sequencing, condensed module timeframes, and many entry points throughout the academic year (Mancini et al., 2018). Rather than following a fixed semester calendar, modules repeat in a continuous cycle, enabling students to enter the programme at various points. This structure is particularly attractive in contexts serving working professionals who require flexible access to postgraduate education (O'Dwyer 2019). The carousel model examined in this study follows a similar rotational structure. There are two programmes in the department that uses a carousel model for course delivery. The Honours programme is comprised of six sequential seven-week modules, forming a 42-week academic cycle, with a one-week interval between modules. The Master's programme follows the same modular delivery structure but extends it through the inclusion of two additional seven-week coursework modules, resulting in a total of eight modules. After completion of the coursework component, students proceed to the research phase, where they undertake a supervised dissertation. This structure allows students to progress through the programme in a staged manner, moving from coursework that develops advanced theoretical and methodological knowledge to independent research. Students may enter the programme at the start of any module, typically up to six times per year. All learning activities are conducted through a Learning Management System (LMS), enabling remote access to content, lectures, peer collaboration, and assessments.

Figure 1 illustrates the continuous rotational sequencing of coursework modules and staggered cohort entry points in the carousel model for the Honour's programme. The diagram

demonstrates how students entering at different modules complete the remaining coursework sequentially before progressing to research projects.

Figure 1

Continuous rotational sequencing and staggered entry in the Honours programme. CW = Coursework module; RP = Research project module.



While the literature documents the operational and retention benefits of the carousel model, limited attention has been given to how these structural features relate to students' learning processes, particularly in relation to SDL.

Structural features of the carousel model and their implications for SDL

The theoretical alignment between carousel programme structures and SDL appears plausible; SDL emphasises learner autonomy, responsibility, goal-setting, and self-management (Knowles, 1975; Garrison, 1997). The flexibility inherent in carousel models, particularly many entry points and continuous progression, may provide students with opportunities to exercise agency over their academic pathways.

Research suggests that flexibility in learning environments can support autonomy and enhance learner responsibility (Du Toit-Brits, 2020; Song & Hill, 2007). From this perspective, the carousel structure may enable students to manage their learning schedules, align studies with professional commitments, and assume responsibility for progression decisions. Such features may contribute to the contextual and cognitive dimensions of SDL, including self-management and self-monitoring (Garrison, 1997).

However, flexibility alone does not ensure the development of SDL. Carousel programmes are often characterised by condensed module duration and accelerated pacing. Phillips (2023) highlighted the rapid pace and intensity of such programmes as potential challenges that may affect student well-being and depth of engagement. High assessment density and compressed content delivery may reduce opportunities for reflection, iterative feedback, and sustained inquiry.

In higher education research, time pressure has been associated with more surface-oriented approaches to learning, particularly when assessment demands are concentrated within short periods (Biggs & Tang, 2011; Kember, 2004). In this context, accelerated structures may influence how students prioritise tasks and allocate cognitive effort. Rather than engaging in extended reflection, students may focus on meeting immediate assessment requirements. This

suggests that while carousel structures may promote autonomy through flexibility, workload intensity and pacing may also influence how SDL is enacted in practice.

In addition, carousel models have been associated with improved retention and accessibility (Mancini et al., 2018; Moodley et al., 2023; O'Dwyer, 2019). However, retention alone does not necessarily provide insight into the quality of learning processes nor the development of SDL competencies. Consequently, further investigation is required to understand how specific structural features, including module duration, sequencing and workload distribution, relate to students' capacity to plan, monitor, and regulate their learning in carousel-based programmes.

Teaching practices, learning technologies, and SDL in online contexts

Early conceptualisations of SDL emphasised individual initiative and responsibility (Knowles, 1975). Subsequent scholarship extended this view by positioning SDL as a process shaped by both cognitive and contextual dimensions in specific learning environments (Garrison, 1997). From this perspective, SDL does not develop in isolation but is influenced by instructional design, interaction, and technological mediation (Garrison & Cleveland-Innes, 2005; Song & Hill, 2007).

In online higher education, SDL is regarded widely as an important factor associated with academic success (Song & Hill, 2007). Students are required to manage time effectively, engage independently with materials, and regulate their participation in digital environments. Research conducted during the expansion of online learning indicates that online contexts can both support and challenge SDL, depending on levels of instructional support, interaction, and programme design (Maphalala et al., 2021).

Structural elements of online programmes, including pacing, sequencing, assessment density, and technological mediation may influence the conditions under which SDL develops (Garrison & Cleveland-Innes, 2005). Programmes that provide opportunities for interaction, timely feedback and structured reflection may encourage deeper engagement. Conversely, highly compressed and assessment-heavy environments may shape students' learning strategies in ways that prioritise performance over sustained inquiry.

Although SDL has been examined extensively in online and blended learning environments (Bonk & Lee, 2017; Chou & Chen, 2008), no research to date has explicitly examined SDL in fully online postgraduate programmes that employ a carousel model of delivery. Given the increasing prevalence of such programmes, particularly those serving working professionals, there remains a need to explore how structural design, teaching practices, and technological mediation interact with the development and enactment of SDL.

Theoretical framework

This study is guided by a modified Community of Inquiry (CoI) framework. The original CoI model conceptualised online learning as emerging through the dynamic interaction of three

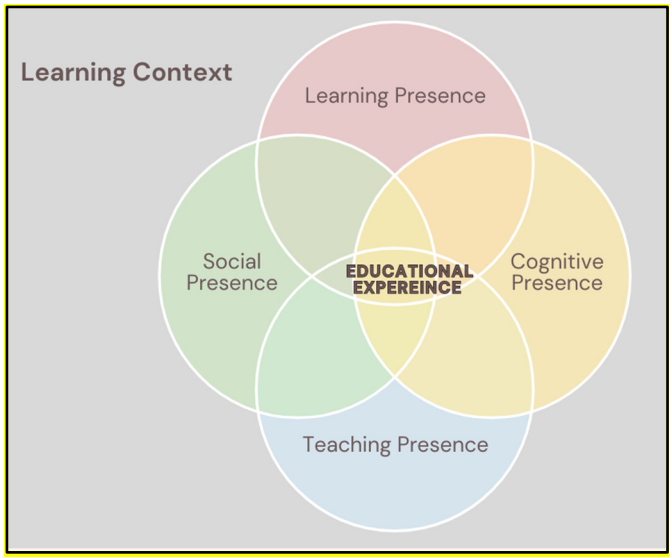
interdependent presences: cognitive presence; social presence; and teaching presence (Garrison et al., 2000). Cognitive presence refers to the extent to which learners construct meaning through sustained reflection and discourse, social presence concerns the ability of participants to project themselves socially and emotionally in a learning community, and teaching presence involves the design, facilitation, and direction of learning processes (Garrison et al., 2000).

While this framework provides a valuable foundation for understanding online learning, subsequent scholarship has identified limitations in its ability to account fully for learner-driven behaviours. In response, Shea and Bidjerano (2010) introduced the concept of learning presence to capture elements of self-regulation, including learner effort and self-efficacy. Learning presence therefore foregrounds the proactive role of students in managing and regulating their learning in online environments.

In this study, we adapted the CoI framework in three ways. First, the learning context, specifically the fully online postgraduate carousel model, was made explicit, in our recognising that structural design influences how the four presences are enacted. Second, learning presence was retained as a core dimension to foreground learner agency. Third, in the category of self-regulation, the indicators were refined to include self-directed learning and self-leadership, consistent with research positioning both constructs in broader self-regulation theory (Durnali, 2020). This adaptation reflects the study's focus on how learners assume responsibility for goal-setting, self-management, and self-motivation in accelerated online structures.

The modified CoI framework therefore provides an integrated way of examining how cognitive, social, teaching, and learning presences interact in carousel programmes to shape the development and enactment of SDL. Figure 2 presents the modified CoI framework used in this study.

Figure 2
Modified CoI Framework (Ebrahim, 2024)



Methodology

We adopted a qualitative case study design to explore how lecturers, teaching assistants, and students experience SDL in fully online postgraduate carousel programmes. The case was comprised of two online postgraduate programmes in a single department at a South African university, constituting a bounded system consistent with case study methodology (Merriam & Tisdell, 2016). This design enabled in-depth examination of SDL in its natural institutional context.

We employed purposive sampling to select information-rich participants with sustained engagement in the carousel structure. The final sample included ten students, six lecturers, and four teaching assistants (n=20). Only participants with more than one year of programme involvement were included to ensure informed reflection on the carousel model.

Data was collected through individual semi-structured interviews conducted online via MS Teams. Semi-structured interviews were selected to allow focused yet flexible exploration of participants' experiences. A pilot interview was undertaken to refine the interview schedule. Each interview lasted approximately 60 minutes, was audio-recorded with consent, and transcribed verbatim.

We analysed the data using thematic analysis. ATLAS.ti software supported systematic coding, organisation, and categorisation of transcripts. Patterns were identified and developed into themes in relation to the research question and the modified CoI framework, ensuring theoretical alignment.

Ethical clearance was granted by the institutional Ethics Committee (Ethics number 1-2020-077). Written informed consent was obtained from all participants, and confidentiality was maintained through anonymisation and secure data storage.

Results and discussion

This study sought to answer the research question: How does the course structure of fully online postgraduate carousel programmes influence self-directed learning?

The findings are organised according to the four presences of the modified CoI framework: learning presence, cognitive presence, teaching presence, and social presence. For purposes of anonymity, lecturers are identified as Lecturer A, B, C, E, L and J; teaching assistants as TA D, F, G, and H and students as Student K to T in the excerpts presented.

Learning presence

Learning presence emerged as the dimension through which the influence of the carousel structure on SDL became most visible. Participants' accounts suggest that the carousel model did not explicitly teach SDL but, rather, its design required students to assume responsibility for organising, pacing, and sustaining their learning in condensed cycles.

Lecturers described the programme as operating according to a fixed and continuous rhythm. Lecturer B explained that students needed to "be at that set point, ready. . . and when you go, you go! Nothing can be in your way!" Similarly, Lecturer A observed that modules "just continue like there's no tomorrow," emphasising the sustained momentum of the carousel. These descriptions indicate that progression was not easily paused or slowed down. Although lecturers did not explicitly frame this as an SDL intervention, their accounts reflect an environment in which independence and self-management were assumed from the outset.

Teaching assistants offered more direct insight into how students responded to these structural expectations. TA F[1] noted that many students enter the programme without well-developed abilities to manage their own learning independently.

> . . . their level of self-directed learning when they begin the modules, it's quite low. . . when they come into the carousel, you don't really fully understand what is needed of you and how much responsibility is needed. . . some students get so shocked that they have to be more responsible. They have to manage themselves.

This observation suggests that the carousel structure exposed variations in SDL readiness, particularly among students transitioning from contact-based programmes. In addition, teaching assistants TA G and TA H, indicated that newcomers frequently required clearer guidance to interpret expectations and organise workload. SDL, therefore, appeared not as an automatic outcome of flexibility, but as a capacity that some students were still developing.

Students' accounts illustrate how SDL was enacted and negotiated over time. Several described the first module as particularly demanding given the immediacy of expectations (for example, Student N and Student K). As Student T explained,

> . . .from the first module, because it's a carousel. . . when you start your first it's like you hit the ground running and the first one can be very overwhelming.

Time management also emerged as a central challenge during this initial adjustment. Students described balancing many assignments in short cycles while managing professional and personal commitments. Student P reflected,

> I think I found it difficult to remember to learn from this experience. . . when there's not enough time and now you're chasing deadlines, and now you're just answering for the sake of answering and making sure that you submit something.

These accounts indicate that, particularly during early modules, SDL was often expressed through pragmatic prioritisation. Students reported allocating time selectively, adjusting reading strategies, and focusing on assessment completion when pressure intensified. Rather than suggesting disengagement, such strategies reflect attempts to manage learning effectively within compressed timelines.

---

[1] Participant responses have not been edited.

Importantly, several participants also indicated that adjustment occurred over time. Teaching assistants observed that students who progressed beyond the initial modules appeared better able to anticipate workload demands and organise their studies accordingly. While the first module was described frequently as overwhelming, subsequent engagement was characterised by greater familiarity with expectations and improved coordination of tasks. This suggests that SDL in the carousel model was not static but developed through continued participation.

At the same time, the flexibility embedded in the structure was experienced positively by some students. The opportunity to enter the programme at many different points during the year enabled alignment with employment and personal responsibilities. As Student N commented,

> I liked the idea of finishing at your own time. . . at other universities, you have to start at the beginning of the year and when you miss registration, you miss the whole year.

Such flexibility reinforced a sense of ownership over decisions related to progression. However, this autonomy also required sustained planning and consistent self-management, particularly in the absence of extended recovery periods between modules.

These findings indicate that the course structure of the carousel model shapes SDL in complex and conditional ways. The condensed seven-week modules and continual sequencing intensify the responsibility placed on students to organise and sustain their learning from the outset. For some, particularly during initial entry, this structure exposed gaps in readiness for independent learning. For others, familiarity with the system enabled adaptation and improved coordination over time. The influence of the carousel structure on SDL is therefore both developmental and contextual: it amplifies the visibility of self-directed capacity while simultaneously requiring its ongoing enactment in accelerated online postgraduate programmes.

Cognitive presence

Cognitive presence refers to the extent to which learners construct and confirm meaning through sustained reflection and intellectual engagement (Garrison et al., 2000). Across participant groups, the carousel structure was described consistently as shaping both the intensity and depth of cognitive engagement in the programme. Lecturers and teaching assistants frequently described the structure using metaphors that conveyed sustained momentum. References to a “train” (Lecturer B), a “monster” (Lecturer J) and an “assembly line” (TA G) emphasised continuity and forward movement. Lecturer E’s remark that the programme operated as a “push, push, push” further underscored the persistent pace embedded in the model. These metaphors foreground the velocity at which intellectual tasks progressed—a condition participants associated with limited opportunities for pause and consolidation.

Lecturers linked this acceleration explicitly to concerns about depth. Lecturer B cautioned that the carousel “risks superficiality of engagement,” explaining that students sometimes completed assessments without demonstrating expanded or integrated thinking. While academic standards remained intact, the compression of time appeared to constrain sustained exploration and iterative reflection.

Teaching assistants reinforced this interpretation by highlighting the cognitive density of the modules. TA D referred to "the amount of work" in the seven-week cycle, while TA G reflected on the difficulty of compressing what had previously been a six-month contact-based course into seven weeks, in questioning, ". . . how do people get time to think, and engage and wrestle with literature. . .? The online programme doesn't allow that time. . . there isn't the luxury of time to smell the roses. Here, the tension lies not in diminished intellectual demand, but in the reduced temporal space required for deep engagement and conceptual integration.

Students' accounts illustrate how this compression shaped engagement practices. Student P described a shift toward completion under deadline pressure, ". . .when there's not enough time and now you're chasing deadlines. . . you're just answering for the sake of answering and making sure that you submit something."

Similarly, Student T reflected that readings were sometimes approached "just to get the assignment done as opposed to reading. . . to learn." Student Q noted that modules could include "ten to twelve academic readings," further intensifying cognitive load within restricted timeframes. These accounts suggest that cognitive effort remained high but was frequently redirected toward managing volume and deadlines rather than extending reflection.

The carousel structure generated substantial cognitive demand while compressing the temporal conditions typically associated with sustained inquiry. Intellectual engagement was clearly present but accelerated sequencing shaped how that engagement was enacted. Rather than diminishing cognitive presence, the structure redirected effort toward strategic task management under conditions of urgency. The depth of reflection that students were able to sustain therefore depended not only on structural pace, but also on how learning processes were designed and facilitated in that pace.

Teaching presence

In the modified CoI framework, teaching presence refers to the design, organisation, and facilitation of learning processes (Garrison et al., 2000). In the carousel context, this dimension became particularly visible in how lecturers enacted pedagogical intentions within the constraints of accelerated delivery. Participants' accounts indicate that deliberate instructional design operated alongside structural limitation.

Lecturers characterised their approaches as "deliberately constructivist" (Lecturer C) and explicitly "student-centred" (Lecturer J). Lecturer A explained that she structures modules to "get them to engage with an idea" rather than focus on content transmission. Lecturer C described consciously simplifying complex concepts to minimise confusion in the online environment, while Lecturer J emphasised the importance of enabling students to "identify with what you are teaching. . . and how it's going to benefit them." These descriptions point to intentional design choices aimed at fostering autonomy, relevance, and sustained intellectual engagement.

At the same time, lecturers acknowledged that facilitation unfolded within compressed timeframes. Lecturer E's characterisation of the programme as operating like a "production line" reflected the intensity and continuity of progression rather than reduced academic expectation. Although lecturers remained committed to meaningful engagement, the shortened cycles limited opportunities for extended dialogue and iterative feedback.

Teaching assistants provided further insight into how these conditions shaped facilitation. TA F observed that students entering their first module often required "more explicit guidance" to interpret expectations and manage workload. TA G similarly noted the challenge of sustaining depth when modules progressed rapidly. These accounts suggest that facilitation demands were heightened during transitional points, particularly for students unfamiliar with independent online learning structures.

Students' perspectives revealed variability in how facilitation was experienced. Student O noted that in some instances "the time between the posting versus the reply was quite substantial," indicating delayed responses in discussion forums. While certain lecturers were described as actively engaging in collaborate sessions and encouraging dialogue, inconsistent responsiveness sometimes reduced clarity and affected students' momentum. Where interaction was timely and dialogic, students reported greater confidence in navigating module expectations; where feedback was delayed, opportunities for scaffolding were diminished.

Teaching presence therefore operated as a mediating mechanism in the carousel model. Although lecturers intentionally designed input for autonomy and engagement, the compressed structure constrained the temporal space required for sustained facilitation. In the CoI framework, effective teaching presence is associated with the organisation and direction of cognitive processes (Garrison et al., 2000; Garrison & Cleveland-Innes, 2005). In this context, the influence of course structure on SDL was shaped not only by pacing itself, but by how pedagogical practices enabled or limited students' capacity to plan, monitor, and regulate their learning in accelerated cycles.

Social presence

Social presence refers to the extent to which participants project themselves socially and emotionally in a learning community (Garrison et al., 2000). In the carousel context, relational interaction functioned as a stabilising dimension within an otherwise accelerated structure. Participants' accounts indicate that while the programme's pace intensified individual responsibility, opportunities for interaction through the Learning Management System (LMS) shaped how students sustained engagement and navigated workload demands.

Lecturers described collaborate sessions and discussion forums as dialogic rather than transmissive spaces. Lecturer B explained,

> The collaborate session is not about my delivering content. We've given you the content. It's about us discussing. . . we are gauging through talking so that you can make sense of the content itself.

This framing positioned interaction as a site of collective meaning-making rather than content delivery. In an accelerated environment, such dialogic spaces created opportunities for clarification, consolidation, and shared interpretation.

Teaching assistants similarly emphasised the relational affordances of the LMS. TA F noted that platforms such as collaborate and support forums enabled students to "support each other and . . . engage with the moderators." These spaces also made participation visible, allowing lecturers and teaching assistants to identify when students were disengaged or struggling. Rather than functioning purely as monitoring tools, such visibility contributed to a sense of connectedness and shared presence in the programme, particularly important in compressed cycles where isolation could intensify.

Students' accounts reveal how these interactive spaces influenced their enactment of SDL. Student P reflected on reading peers' posts,

> . . .when you read through other people's posts. . . you realise that we are all on the same boat. . . you read someone else's post and you think, wow, this is brilliant. . .I can benefit from maybe using this kind of writing style or the perspective that this person is bringing in.

Here, interaction extended individual learning beyond isolated task completion. Exposure to alternative interpretations appeared to support reflection and adaptive strategy use. Student R described the forum similarly as a space in which ". . .we share our ideas in our level and you are able to even check somebody's work. . . and bring some ideas to what fellow students have shared."

Such exchanges suggest that relational engagement supported confidence, clarification, and peer-assisted regulation, particularly important in short module cycles. However, social presence was not experienced uniformly. Several students indicated that participation diminished when forums were optional or when lecturer responses were delayed. As Student O observed earlier, "delayed responses to queries" reduced the usefulness of the forum for time-sensitive assignments. In these instances, interaction became secondary to individual task completion.

The carousel structure therefore influenced SDL not only through pacing and workload, but through the relational conditions under which students interpreted expectations and sustained motivation. While the LMS provided infrastructural capacity for interaction, the extent to which social presence supported self-direction depended on consistent facilitation and active participation. In accelerated programmes, relational engagement functioned as a buffer against isolation and cognitive overload, enabling students to clarify expectations and recalibrate learning strategies within compressed timelines.

Implications for theory and practice

The findings of this study suggest that the influence of course structure on SDL extends beyond individual learner disposition and into the architectural conditions of programme design. In the

carousel model, SDL did not emerge solely as a personal capability; it was, rather, structurally activated through condensed sequencing, continuous progression and distributed entry points. This contributes to ongoing discussions in the SDL literature by illustrating how programme structure can render self-direction both necessary and visible from the outset, particularly in accelerated online postgraduate contexts.

From a theoretical perspective, the study reinforces the value of examining SDL through the modified CoI framework. While cognitive, teaching, and social presences shaped how learning unfolded within compressed cycles, learning presence became especially salient in demonstrating how students enacted responsibility under structural constraint. The findings indicate that SDL development in accelerated environments is conditional: it depends not only on learners' readiness, but on how structural pacing is mediated through pedagogical design and relational interaction. In this sense, the study extends applications of the CoI framework by foregrounding the importance of temporal structure in shaping the enactment of SDL.

At the level of programme design, the findings suggest that accelerated models such as the carousel require intentional scaffolding to support students' transition into self-directed modes of learning. The immediacy of expectations, particularly for first-module entrants, highlights the importance of clear orientation processes, explicit articulation of workload demands, and structured guidance during initial cycles. Where such supports were present, students appeared better able to anticipate workload, organise tasks, and sustain engagement over time.

Pedagogically, the findings underscore the heightened importance of teaching presence in accelerated formats. Compressed timelines reduce the temporal space available for extended dialogue and iterative feedback, thereby increasing the significance of timely facilitation and expectation-setting. Teaching practices that foreground clarity, responsiveness, and structured engagement appear to mediate structural pressure, enabling students to regulate their learning more effectively within condensed cycles.

Finally, the study highlights the relational dimension of accelerated online learning. While the carousel structure intensified individual responsibility, interactive spaces in the LMS functioned as mechanisms for clarification, reassurance, and peer-supported reflection. In compressed programmes, social presence appears to operate as a stabilising condition that supports students' confidence and adaptive strategy use. The infrastructural availability of interaction alone, however, was insufficient; consistent facilitation and structured participation shaped whether relational engagement translated into meaningful support for SDL.

Thus, the study suggests that accelerated online postgraduate programmes do not merely require self-directed learners, they shape actively the conditions under which self-direction is enacted. Understanding SDL in such environments therefore demands attention to structural pacing, pedagogical mediation, and relational dynamics as interconnected influences rather than isolated variables.

Limitations

This study is situated in a qualitative case study of two postgraduate programmes in a single department at one South African university. As such, the findings reflect context-specific experiences and may not be directly generalisable to other institutional settings or disciplinary contexts. The carousel model examined in this study's context operates within particular organisational and technological conditions that may differ across institutions.

The study relied primarily on self-reported interview data from lecturers, teaching assistants, and students. While this approach provided rich insight into participants' perceptions and experiences, it does not capture longitudinal changes in SDL development. Students' accounts reflect perceived enactment of self-direction rather than independently measured SDL competencies.

In addition, although the study included participants at different stages of progression, it did not systematically track developmental shifts in SDL over time. Future research employing longitudinal designs or mixed methods approaches could further illuminate how self-directed learning evolves across successive carousel cycles.

Despite these limitations, the study offers insight into how programme structure shapes the conditions under which SDL is enacted in accelerated online postgraduate environments.

Conclusion

In this study, we set out to examine how the course structure of fully online postgraduate programmes employing a carousel model influences SDL. Our findings indicate that structural features, including condensed seven-week modules, continuous sequencing, and many entry points shape the conditions under which SDL is enacted. Rather than explicitly teaching self-direction, the carousel structure renders it immediately necessary, positioning students in an environment that requires sustained responsibility, coordination, and adaptive strategy use.

The influence of structure, however, is neither uniformly enabling nor inherently constraining. While accelerated pacing intensified cognitive demand and exposed variations in readiness for independent learning, pedagogical mediation and relational interaction played a significant role in shaping how students navigated these pressures. Teaching practices that foregrounded clarity and responsiveness, along with structured opportunities for peer engagement, appeared to support students' capacity to regulate and sustain their learning in compressed cycles.

By analysing the carousel model through the modified CoI, this study contributes to a more contextualised understanding of SDL in online higher education. It highlights the importance of examining programme architecture, not only learner attributes, when we are investigating how SDL develops in accelerated environments. In doing so, the study underscores that SDL in online postgraduate programmes is not merely an individual disposition, but a dynamic enactment shaped by structural pacing, pedagogical mediation, and relational conditions.

References

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university: What the student does* (4th ed.) Open University Press.

Bonk, C. J., & Lee, M. M. (2017). Motivations, achievements, and challenges of self-directed informal learners in open educational environments and MOOCs. *Journal of Learning for Development*, *4*(1), 36–57. https://doi.org/10.56059/jl4d.v4i1.195

Candy, P. C. (1991). *Self-Direction for lifelong learning. A comprehensive guide to theory and practice*. Jossey-Bass.

Chou, P. N., & Chen, W. F. (2008). Exploratory study of the relationship between self-directed learning and academic performance in a web-based learning environment. *Online Journal of Distance Learning Administration*, *11*(1),15–26.

Du Toit-Brits, C. (2020). Unleashing the power of self-directed learning: Criteria for structuring self-directed learning within the learning environments of higher education institutions. *Africa Education Review*, *17*(2), 20–32. https://doi.org/10.1080/18146627.2018.1494507

Durnali, M. (2020). The effect of self-directed learning on the relationship between self-leadership and online learning among university students in Turkey. *Tuning Journal for Higher Education*, *8*(1),129–165. http://dx.doi.org/10.18543/tjhe-8(1)-2020pp129-165

Ebrahim, S. (2024). A case study of self-directed learning in carousel model postgraduate online programmes. [Doctoral dissertation, University of Johannesburg].

Garrison, D. R. (1997). Self-directed learning toward a comprehensive model. *Adult Education Quarterly*, *48*(1),18–33. https://doi.org/10.1177/074171369704800

Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *The American Journal of Distance Education*, *19(*3), 133–148. https://doi.org/10.1207/s15389286ajde1903_2

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2/3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Giddings, S. (2015). *Self-directed learning (SDL) in higher education: A necessity for 21st century teaching and learning.* Faculty of Education, Brock University.

Jerald, C. D. (2009). Defining a 21st century education. *Center for Public Education*, *16,*1–10.

Kember, D. (2004). Interpreting student workload and the factors which shape students' perceptions of their workload. *Studies in Higher Education*, 29(2),165–184. https://doi.org/10.1080/0307507042000190778

Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Association Press.

Loeng, S. (2020). Self-directed learning: A core concept in adult education. *Education Research International*, 2020(1), 1–12.

Mancini, M. E., Cipher, D. J., & Ganji, D. (2018). Maximizing retention and progression to graduation in online programs: A case study in "Designing with the End in Mind". In *Critical assessment and strategies for increased student retention* (pp. 211–225). IGI Global.

Maphalala, M.C., Mkhasibe, R.G., & Mncube, D. W. (2021). Online learning as a catalyst for self-directed learning in universities during the COVID-19 Pandemic. *Research in Social Sciences and Technology*, *6(*2), 233–248. https://doi.org/10.46303/ressat.2021.25

Merriam, S.B., & Tisdell, E.J. (2016). *Qualitative research: A guide to design and implementation*. Jossey-Bass.

Moodley, K., Van Wyk, M., Tive, D., Van Zyl, I., & Cronje, J. (2023). Student retention in fully online programmes at two South African universities, *International Journal of Information and Education Technology*, *13*(9), 1372–1382.

O'Dwyer, C. (2019, July 7–11). *Riding the carousel: Designing an online enabling program to maximize positive learner engagement and outcome*s [Conference Session]. STARS 2019*,* Melbourne, Australia.

Organisation for Economic Co-operation and Development (2009). *Education at a Glance 2009: OECD Indicators*. OECD Publishing. https://doi.org/10.1787/eag-2009-en

Phillips, G. (2023). Evaluating the carousel format of Sunderland Online's LLM programme. *The Law Teacher*, *57*(4), 560–564. https://doi.org/10.1080/03069400.2023.2279445

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, *55*(4),1721–1731. https://doi.org/10.1016/j.compedu.2010.07.017

Song, L., & Hill, J.R. (2007). A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning*, *6*(1), 27–42.

Tekkol, A., & Demirel, M. (2018). An investigation of self-directed learning skills of undergraduate students. *Frontiers in Psychology*, *2324*(9), 1–14. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2018.02324

World Economic Forum. (2019). *Towards a reskilling revolution: Industry-led action for the future of work*. Centre for New Economy and Society Insight Report. https://www.weforum.org/reports/towards-a-reskilling-revolution-industry-led-action-for-the-future-of-work