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The Future is Connection:

Collaboration, Creativity and Compassion in a Digital Society

Time management and deferred learning intentions

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As online learning places greater responsibility on students to organise their own learning time, self-regulated learning support must account for the tools and routines students already use. This exploratory sequential mixed-methods study examined how university students manage deferred learning intentions: intentions to return to learning-related materials later. Phase one involved semi-structured interviews with 13 high-engagement university students in Australia and the UK, and phase two surveyed 200 university students in Malaysia. Interviews distinguished longer-horizon organisation connected to broader academic and career goals from short-horizon task management shaped by immediate deadlines and commitments, and suggested different tools serve different functions. Survey respondents used mixed tool ecologies to retain deferred learning materials, and described post-saving practices ranging from explicit planning to intentional or opportunistic return and forgetting. Larger reported backlogs were associated with progressively higher rates of rushed or lower-quality return. Calendar use appeared selective: students often preserved intentions in notes or task systems while using calendars to represent some as scheduled commitments. The findings suggest that preservation and activation are separable functions, and that time-management scaffolds should support movement from preserving learning intentions toward planned or cued re-engagement.

Keywords: time management, self-regulated learning, learning intentions, procrastination, calendar use, student wellbeing, exploratory analysis methods

Introduction

Higher education increasingly requires students to regulate their own learning time. The growth of asynchronous and blended learning has reduced fixed participation structures and shifted more responsibility for when and how to engage with students (Baker et al., 2019). Post-pandemic learning contexts have further blurred academic, personal, and professional boundaries, heightening difficulties with concentration, motivation, stress, procrastination, and disengagement (Patzak et al., 2025). Time management is therefore not merely a productivity concern: it is associated with wellbeing and performance (Wolters et al., 2025), and raises design questions about how learning environments can better support student time management.

This paper examines student time management through deferred learning intentions: intentions to re-engage with previously encountered learning materials after engagement has been postponed. We use this term descriptively rather than as a new psychological construct, and remain agnostic about whether deferment reflects regulatory failure, deliberate prioritisation, or other strategic delay. Our focus is on the post-deferment process: how intentions are kept available and later brought back into consideration. We examine how students manage these intentions amid competing commitments and existing tool ecologies, guided by the following research question: How do university students manage deferred learning intentions amid competing commitments and existing tool ecologies?

Literature review

Wolters et al. (2025) define academic time management as students' strategic efforts to plan, monitor, and regulate when and for how long they engage in academic work, linking effective time management to wellbeing and performance. Patzak et al. (2025) similarly identify planning, goal setting, prioritisation, and task organisation as benefiting productivity, wellbeing, and performance in higher education and workforce contexts. Baker et al. (2019) found that prompting students to schedule lecture watching had a short-lived but measurable benefit to quiz performance, particularly for students with weaker self-reported time-management skills. These studies link time management to learning and wellbeing.

Procrastination research helps clarify why deferred learning intentions are consequential, while cautioning against treating all deferment as problematic. Steel (2007) defines procrastination as voluntarily delaying an intended action despite expecting to be worse off, linking it to self-regulatory difficulties, weaker academic performance, and the intention-action gap. Turner and Hodis (2023) further show that procrastination can be amplified by unstructured learning environments, long deadlines, distractions, and limited progress monitoring. However, Chu and Choi's (2005) concept of "active procrastination" demonstrates that delay may also be deliberate: active procrastinators intentionally postpone action, may prefer working under pressure, and nevertheless retain the ability to meet deadlines and achieve satisfactory outcomes. Their formulation therefore combines characteristics of the initial deferment with characteristics of what happens subsequently. For the present study, these are analytically separated. Deferment describes the postponement of engagement, regardless of motivation. Once engagement has been deferred, a separate problem arises: the intention must remain recoverable and become actionable again if re-engagement is to occur. Our focus is on this post-deferment process without classifying the motivation for delay as adaptive or maladaptive.

Self-regulated learning (SRL) includes students' ability to regulate, control, and monitor cognitive, metacognitive, and motivational learning processes, and recent studies position SRL scaffolding as a practical design concern in university (Pacitti et al., 2024) and TVET (Choy & Quek, 2024) contexts. However, personalised prompts may improve planning without improving learning performance (Lim et al., 2024), while scheduling interventions can have only short-lived effects (Baker et al., 2019). Time management is also shaped by motivation, context, and sustained regulatory practice, not tools alone (Patzak et al., 2025; Wolters et al., 2025). For deferred learning intentions, recognising, saving, or planning a task does not guarantee later action. Deferred learning intentions overlap with task management, information management, prospective memory, and SRL, but do not replace these constructs. Rather, they identify the narrower situation in which previously encountered material has been set aside with an intention to return, allowing the post-deferment process to be examined separately from the motivation for delay. Within this process, we distinguish preservation and activation as analytically separable functions. Preservation keeps an intention recoverable; activation connects it to a cue, plan, scheduled opportunity, or commitment that brings it back into consideration. These are not formal SRL stages, but functions that may be supported through students' tools and routines, with re-engagement as the desired proximal outcome.

Methodology

This exploratory sequential mixed-methods study used interviews (phase one) to identify recurring patterns in students' experience with time management, followed by a broader survey (phase two) to examine whether deferred learning practices were also evident beyond the purposively selected high-engagement sample. The analysis is descriptive rather than causal, focusing on patterns in how students manage deferred learning intentions, rather than the effects of specific tools.

Phase one consisted of semi-structured 45–60-minute interviews with 13 university students in Australia and the UK, recruited through LinkedIn. Participants were selected for indicators of high engagement, such as visible academic performance, extracurricular leadership, internship experience, or competition participation, to obtain information-rich accounts of how engaged students manage learning time across competing commitments. Retained transcripts supplemented contemporaneous notes, coded by the interviewer who was one of the authors. Interview participants provided informed consent.

Phase two broadened the inquiry through an incentivised survey of 200 university students in Malaysia recruited through Rakuten Insight, a managed research panel. The survey focused on "learning-related content," defined to include university coursework and self-discovered materials such as readings, videos, lecture recordings, academic papers, notes, slides, podcasts, and short videos, where the primary motivation was learning rather than entertainment. Respondents were asked how often they encountered learning-related materials they intended to revisit, how they kept track of these deferred materials, and how they used calendars, including whether they scheduled specific learning tasks such as reading or reviewing notes. Phase one interview notes were reviewed inductively to identify recurring distinctions in time horizon and tool function, which informed survey design and response interpretation.

Results

Interviews surfaced a distinction between long-horizon and short-horizon management of learning intentions. Of the 13 students interviewed, seven articulated a distinction between longer-term planning and shorter-term task management. Long-horizon planning was strategic and connected to broader goals such as academic performance, employability, career preparation, and self-directed learning. Short-horizon planning was tactical and task-oriented, involving assignments, exams, jobs, interviews, deadlines, and immediate study tasks. This distinction helps explain why longer-term learning intentions can become vulnerable when nearer-term pressures dominate. One participant described the experience of an unexpected attractive internship interview invitation arriving close to exam season, "I didn't have time to plan neatly anymore, I was in fight or flight mode…out of my comfort zone."

The phase one interviews generated hypotheses about the tools students use to manage deferred learning intentions. These were followed up in the phase two survey through the question: "If you come across learning-related things you intend to return to later, how do you usually keep track of them?" The survey also asked what usually happened after respondents saved something to learn later. Among respondents who experienced deferred learning intentions (n = 195), 36% reported that they scheduled or planned time for the saved material, while 20% intentionally revisited it later. However, 34% returned only when they had time, and 10% usually forgot about it. This suggests that saving a learning material does not consistently create a clear mechanism for return; deferred learning intentions varied from explicit scheduling through intentional but unscheduled revisiting, to opportunistic return or forgetting.

The survey found no single dominant tracking system. Table 1 partially integrates the two phases by presenting phase two tool prevalence (n = 195, excluding five respondents who indicated that they did not usually experience deferred learning intentions) alongside phase one interpretations of tool function; these interpretations are illustrative rather than evidence that particular tools belong exclusively to any one time horizon. Deferred learning intentions were distributed across notes apps, task systems, memory, messaging, browser tools, calendars, bookmarks, and paper planners. This distribution suggests a mixed tool ecology rather than one canonical student workflow.

Table 1.
The tools that students use to track deferred learning intentions, integrating phase two prevalence data (n = 195) with illustrative phase one interpretations of their functions across long- and short-horizon management.

Tool	Respondents	Illustrative function observed from phase one interviews
Notes apps (Notion, Apple Notes, Google Docs, etc.)	46%	Long-horizon "Second-brain" retention with flexible organisation and categorisation for implicit or explicit goal alignment, and short-horizon semi-structured deferment capture
Task lists/to-do apps	46%	Optimised low-friction deferment capture
I rely on memory	40%	Long-horizon static goals remain top of mind, short-horizon daily tasks in short-term memory
Messaging it to myself (chat apps)	38%	Short-horizon task tracking with a rich chat UI enables a more seamless sharing/forwarding mechanism
Browser tabs	32%	Tab grouping enables short-horizon task organisation
Calendars (online/app or paper)	32%	Short-horizon constraint and commitment identification, with native activation mechanism through time-based prompting
Browser bookmarks	28%	Categorisation enables long-horizon goal alignment
Paper planners, organisers, or diaries	27%	Flexible long-horizon planning with freedom of annotation, with flexible short-horizon annotation

Calendar use provided a narrower view of activation. Figure 1 shows that fixed commitments and deadlines were more commonly calendared than specific learning tasks or study blocks. This suggests that calendar adoption did not necessarily imply calendarisation of self-directed learning. Calendars may support activation by turning some intentions into scheduled commitments, but the survey findings suggest that this function applied unevenly across learning-related tasks.

Two survey analyses suggested that the frequency of deferred learning intentions was associated with pressure on re-engagement. First, respondents who reported more frequent encounters with learning-related materials they intended to return to later also reported more rushed or lower-quality follow-through. Among respondents who experienced deferred learning intentions (n = 195), deferral frequency was moderately associated with rushed/lower-quality return, Spearman ρ = 0.45, p < .001.

Second, respondents with larger current backlogs were more likely to report often or very often returning later than intended in ways that felt rushed or lower quality. This was reported by 10.6% of respondents with 1–3 outstanding items (7/66; Wilson 95% CI: 5.2–20.3%), 23.7% with 4–10 items (23/97; 16.4–33.1%), 52.9% with 11–20 items (9/17; 31.0–73.8%), and 80.0% with more than 20 items (8/10; 49.0–94.3%). Confidence intervals were wide for the two largest-backlog groups, so this pattern should be treated cautiously. Together, these cross-sectional findings do not establish causality, but they suggest that both frequent deferral and accumulated backlog are linked to greater pressure on re-engagement.

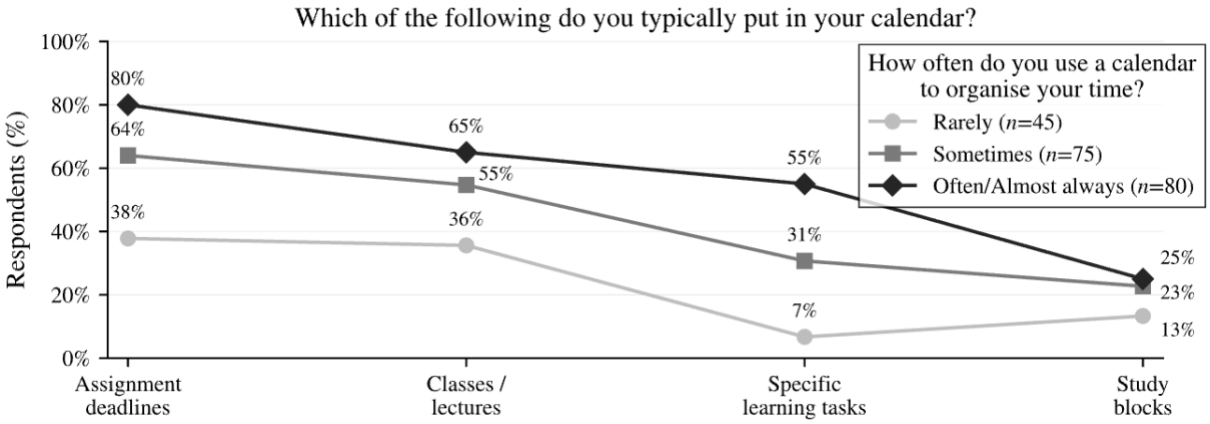


Figure 1. *Types of calendar entries that students make, segmented by calendar usage*

Conclusion

This study examined how university students manage deferred learning intentions amid competing commitments and existing tool ecologies. Students used heterogeneous combinations of notes, task systems, memory, messaging, browser tools, calendars and paper planners rather than one dominant workflow. Interview accounts suggested that longer-horizon intentions connected to broader academic and career goals were vulnerable when immediate tasks and deadlines became urgent. Survey responses likewise indicated that saving a learning resource did not consistently create a clear mechanism for return.

Respondents reporting larger current backlogs also reported substantially higher rates of rushed or lower-quality return, although the cross-sectional design does not establish the direction or causality of this relationship. Calendars appeared to represent one possible activation mechanism, but the calendar findings were narrower: fixed commitments and deadlines were more commonly calendared than specific learning tasks or study blocks. This suggests that conventional calendar-based activation may not fit all forms of deferred learning work, particularly when learning is uncertain, open-ended, or dependent on fluctuating workload.

The two research phases were designed to broaden the inquiry. Phase two was intentionally conducted in a different national and educational context to examine whether the phase one patterns remained recognisable beyond the original cohort, rather than to support direct cross-context comparison. Accordingly, differences in national and educational context, engagement profile, workload, and digital practices may have influenced the observed patterns. The study is further limited by self-reported survey data and sample size, which produced small cells in the largest-backlog groups and prevented robust disciplinary subgroup analysis. The findings are therefore interpreted as exploratory descriptive patterns rather than causal or population-level estimates.

The contribution of this paper is to distinguish preservation and activation as analytically separable functions in students' management of deferred learning resources. Preservation keeps an intention available; activation connects it to a cue, plan, scheduled opportunity or commitment for later return. SRL scaffolds should therefore fit students' existing organisational systems and support movement from preservation toward planned or cued re-engagement.

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