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Student perceptions of supports for managing study in higher education according to internal and external locus of control

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ABSTRACT

Higher education has seen a significant shift in the last two decades, with contemporary students representing more diverse cohorts who are increasingly balancing study alongside competing life-roles and responsibilities. Given the rise in student attrition and concerns regarding engagement, we saw a visible need to consider how our students could be better supported in managing their study requirements which might improve retention and engagement. We asked students what best helps them to manage their learning and time, and this study reports on responses from 430 students over 8 course offerings between 2019 and 2021. Responses were coded using inductive category development and grouped into internal and external locus of control. The findings reveal 52.6% students demonstrated an interplay of internal and external locus of control factors, while 29.5% identified fully internal and 17.9% indicated fully external LOC. The study highlights that flexible, multi-pronged strategies and institutional supports are fundamental in supporting diverse modern tertiary student populations. The paper concludes with considerations for educators and higher education institutions, drawing on the principles of Universal Design for Learning and pedagogical care that may address many aspects raised by students that are outside their locus of control, which may consequently benefit student retention and engagement.

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Student support; student retention; higher education; locus of control, universal design for learning; pedagogical care

Introduction

The ability for students to manage their learning and time in study is a particularly important issue given the ongoing and growing concerns around less-than-satisfactory rates of student retention (completing the program) and engagement (active participation in the course content) throughout many higher education institutions (Coates 2010; Tight 2020). In order to better understand our student needs and therefore support them in managing their study requirements, our research commenced with the question: What do higher education students identify that supports them to best manage their learning and time in their studies?

The higher education landscape has seen significant change in the last 20 years. No longer is the picture of the school-leaver or early-adult scholar studying on the campus green between classes representative of many contemporary tertiary students. Blended and online learning have opened up the possibility of tertiary learning without the need to attend

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a campus (Stone, Freeman, and Dyment 2019); flexible university calendars and modes of delivery such as micro credentialing are specifically tailored to permit students to undertake study in 'manageable chunks of time' that can sit around wider life responsibilities (Selvaratnam and Sankey 2021); and university support and adaptive technologies are providing opportunities for students with disabilities to engage with learning where previously it was less accessible (Cain and Fanshawe 2021). The diversification of university students sees an increasing number of life roles being simultaneously carried out alongside study, including full time work commitments, family life, caring duties etc. Unsurprisingly, contemporary higher education students are therefore more diverse in ethnicity, age, ability, and life circumstances than ever before (Altbach and Reisberg 2018; DET 2017). Such changes are undeniably desirable and, simultaneously, bring with them attendant challenges in fostering positive student retention and engagement for the more diverse, time-poor contemporary student cohort. Student retention and engagement are thus key foci of Higher Education providers, who are concerned not only about maintaining student enrolments, but also in seeing those students successfully complete their studies with the requisite knowledge and skills from their program of learning (Tight 2020).

Student wellbeing further represents a considerable and growing concern in the Higher Education (HE) sector (Brewster et al. 2022). Some reports show that tertiary students have lower levels of happiness and higher levels of anxiety than the population at large (Brown 2016; Stallman 2010), and the demand for psychological services and support often outstrips supply in tertiary contexts (Brown 2016). A clear correlation has been demonstrated between student wellbeing, retention and engagement (Collings, Swanson, and Watkins 2014), meaning that universities have a distinct impetus to enact the kinds of support mechanisms that will help students not only to remain enrolled, but also connected, leading to successful and meaningful learning outcomes (Stone and O'Shea 2019).

The link between student success, retention and engagement and a care-centred approach to education are well documented, highlighting the centrality of care in higher education when considering how to support students through their study journey. Pedler's et al.'s study (2022) demonstrated an alignment between a student's sense of belonging and their motivation and retention, and the work of Kirby and Thomas (2022) demonstrated that a sense of belonging at the classroom level (rather than campus level) was 'associated with increased self-efficacy and academic motivation ... [and that] a sense of belonging may support student success by reducing psychological distress and the risk of mental health problems' (p. 368). Interestingly, Bell found that – while academics in her study placed emphasis on course design and organisation as a key indicator of quality education, students in her research placed more emphasis on the value of relationships with staff, noting that warm and respectful staff interactions were of the greatest importance in their study. Collectively, these studies and similar wider research (Burke and Larmar 2020; Burke, Fanshawe, and Tualualelei 2022) indicate not only the significance of individual educators enacting relational care with students, but also that it may take precedence over wider institutional initiatives and course design for keeping students engaged and progressing in their studies. Nonetheless, at the institutional level, 'an amplified emphasis on academic outcomes frequently disregards the holistic nature of university education and the importance of the subjective wellbeing experiences of university students' (Eloff, O'Neil, and Kanengoni 2022, 219).

Barnacle and Dall'Alba (2017) suggest that a way to re-orientate student engagement is to provide opportunities for all students to express how they learn. Listening to the opinions of students about their experiences in Higher Education has been seen to play a role in the development of Higher Education programs in both participation as a student representative by working with university leaders (Holdsworth 2021; Patrick 2022), as well as providing input into specific courses through student responses to surveys (Blair and Valdez Noel 2014) and partnerships with academic staff to influence course offerings (Cook-Sather 2020). Matthews and Dollinger (2022) identify the two separate roles that students play in shaping the educational experience, while

warning of the importance to consider the diversity of students who are providing input. According to McLeod (2011) providing opportunity for as many different students as possible to present their voice will increase representation and should be considered as ‘a strategy to promote equity and wider participation in higher education’ (McLeod 2011, 179).

Collectively, these understandings prompted this research and our desire to gain a more holistic picture of what our students identified as useful supports in their studies. As academics within an Initial Teacher Education (ITE) program in a regional Australian university, we were keenly aware of high attrition rates in higher education (Stone, Downing, and Dymment 2021), and particularly, in Initial Teacher Education (ITE) programs (Ovenden-Hope 2023), particularly for online learners (Dymment and Downing 2020), which compromise approximately 75% of our enrolments. Our own experience confirmed what we saw in the literature: that student wellbeing was often less-than-acceptable, and there was a visible correlation with students who were flourishing (or otherwise) in our courses. Motivated by a conviction regarding the importance of a pedagogy of care (Burke and Larmar 2020) for our students, we were interested in listening to our students regarding what they felt supported them to succeed in learning in Higher Education, with the intention to use this information to better support them holistically, beyond the mere focus on our own course design and facilitation.

Method

As part of a larger study that examined students’ thoughts about learning in Higher Education, we asked students who were enrolled in a third-year Initial Teacher Education (ITE) core course in a regional university about their learning experiences (University of Southern Queensland ethics approval #ETH2020-0100). Students were asked to respond to a voluntary, anonymous survey within the course platform, which comprised of multiple choice and some open-ended responses.

The research presented in this paper responds to a single question that was asked of a total pool of 670 ITE students, with responses from 430 students from six student cohorts across eight course offerings of the same course between 2019 and 2021 (Table 1). The total population of students in this pool, as identified in the university enrolment system identified as studying online (79%) or on campus (21%) and in full-time (54%) and part-time (46%) capacity. 430 valid responses (64.17%, as shown in Table 1) were received in response to an open question which is analysed in this paper: ‘List 3 things that you feel support you to best manage your learning and time’. Most of the 430 valid student responses nominated 3 separate aspects in their response. 374 (87%) nominated 3 aspects; 41 (10%) nominated 2 aspects and 15 (3%) nominated only 1 aspect, resulting in a total of 1219 separate ‘quotations’. Predominantly, each quotation was assigned a single code; however, the occasional allocation of two codes per quotation resulted in a total of 1247 separate student responses for coding.

Student responses to the survey question were initially themed using inductive category development (Mayring 2000). Within the inductive category development process, qualitative data is interpreted by the researchers and allocated to categories that arise from the data, which are considered as objects of meaning (Gläser-Zikuda, Hagenauer, and Stephan 2020). Therefore, with a considerable data set, it was important to work towards coding reliability to carefully interpret the data to reveal the participant’s meaning (Merriam and Tisdell 2016). In order to do this, we individually conducted an initial coding from 87 student responses with an aim to reach agreement on the naming of emergent thematic categories. Codes were cross analysed within the research

Table 1. Valid Response Rate: $430/670 = 64.17\%$.

	S1 2019	S2 2019	S3 2019	S1 2020	S3 2020	S1 2021	S3 2021	S1 2022	Total
Total students in course	87	25	140	55	98	91	86	88	670
On-campus	47			22		30		40	139
Online	40	25	140	33	98	61	86	48	531
Valid Responses Q3	53	23	104	48	70	47	48	37	430

Table 2. Overview of the identified codes.

TYPE	CODE	% Respondents	% Codes	Responses	Codes
Internal	PLANNING schedule; diary; organisation	58%	23%	249	282
Internal	STUDY TECHNIQUES and aids; lists; routines; practice	37%	15%	157	191
External	LEARNING RESOURCES access ; Tutorials; Lectures; forums; F2F; on campus; engaging examples	35%	16%	152	202
External	COURSE & ASSESSMENTS design ; expectations; instructions; schedules; deadlines; flexibility; reminders	25%	11%	106	132
External	STAFF access; skills; support; feedback; communication	18%	6%	76	80
Internal	EFFORT application; attendance; practice; help seeking	17%	6%	72	76
External	PEERS discussions; collaborate	16%	5%	68	68
Internal	ATTITUDE motivation; confidence; discipline; focus	15%	5%	63	64
Internal	SELF CARE health; diet; rest; balance; coffee	10%	4%	43	45
Internal	INDEPENDENT LEARNER reflections; own pace; own understanding	10%	3%	41	41
External	FAMILY Partner family community; support network	8%	3%	36	37
External	LEARNING WORKSPACE	7%	2%	29	29

team to ensure consistency of coding procedures prior to completing the analysis of the full data set, with the help of a research assistant.

Within this process, it was identified that the responses clearly identified both internal and external factors that influenced students' perceptions of how they best manage their learning and time in higher education. We therefore referred to Rotter's (1966) Locus of Control (LOC) Scale as a tool for coding and analysis of the data. Locus of control refers to a person's perception about events that occur and whether they are seen as being influenced by their own control (internal locus of control) or the control of others (external locus of control) (Kovach 2018). Students with an internal academic LOC believe that academic success results from their own effort and skill, compared with those with an external academic LOC who hold that academic outcomes are contingent upon elements outside their own control, such as luck or the behaviour of others.

With researcher agreement established, the full 1247 responses were coded into 12 broad codes: 6 related to 'internal locus of control' and 6 to 'external locus of control'. The data was coded in *Atlati.Ti* (<https://atlati.com/>) and the coded result exported to Excel to sort by Respondent ID or by Code to enable further analysis, including calculations and cross comparison of responses and codes. We now present the key findings emerging from the analysis process.

Findings

In response to the statement: 'List 3 things that you feel supports you to best manage your learning and time', students demonstrated a clear delineation of factors that pertained to an internal or external locus of control, and within these two broad categories, more specific aspects were then identified. [Table 2](#) provides an overview of each of the identified codes, along with the percentages of students whose responses aligned with each code.

Importantly, 82.1% of the respondents nominated at least 1 internal LOC aspect, and 70.5% nominated at least 1 external LOC aspect, indicating an interplay of internal and external LOC factors for the majority of respondents. Overall, these percentages indicated a slightly stronger propensity to an internal LOC, which was supported by further breakdown of responses as internal, external, or a combination of both as will be explored below

Internal locus of control

When analysing the data both from the perspective of respondents ($n = 430$) and total responses ($n = 1247$), it became clear that the students leaned more towards internal factors. We considered internal LOC to incorporate aspects influenced by their own control. The most frequently mentioned

aspect ($n = 249$, 58%) that students saw as central in managing their learning related to students' own PLANNING, organisation, and time management. This aspect was the most nominated in terms of number of respondents as well as number of aspects coded. Student responses demonstrated their awareness of their need to intentionally manage their time through strategies to hold themselves accountable and prioritise their study, and this was regularly listed in response to wider competing time demands and commitments, such as 'being able to work around my work and family' (#35), the creation of 'a semester calendar [that] helps to manage uni work as well as other life commitments' (#386) to 'ensure I make time to sit down and do my work' (#15). For some, wider commitments were reconsidered by 'reducing work hours' (#36 and 280), or 'knowing the size of my workload' (#265) in order to plan accordingly.

The second most nominated aspect ($n = 157$, 37%) also demonstrated an internal LOC, and it encompassed various STUDY TECHNIQUES, including aids, and practices that respondents nominated as important to their learning management. These techniques and practices included tangibles such as 'Post It notes around my desk' (#86) and checklists, but also involved habits and practices such as 'checking StudyDesk daily [the university Learning Platform]' (#109) and strategies to maximise their effort: 'Prioritising the content to view (e.g. what is the most important for upcoming assessments)' (#375).

While not as frequently identified, 17% of the 430 respondents ($n = 72$) recognised the importance of their own EFFORT as one of the three things supporting learning. Personal application through 'working hard' (#50), 'committing myself to my own learning' (#97), reach[ing] out with questions [and] attend[ing] discussions to listen and learn" (#286) highlighted some students' recognition of their agency as learners that contributes to their success. Similarly, 15% ($n = 63$) credited their ATTITUDE as an important aspect in supporting their learning. This included an acknowledgement of passion, motivation, confidence, discipline and focus, which sometimes came from external sources such as 'an element of stress [and] being against the clock' (#9), and 'having deadlines' (88). For others, self-talk was important: 'reminding myself [of] that big picture; each hour I put in brings me closer to my goal of being an educator' (#194), and 'patience and positivity' (#370).

Finally, a small number of students recognised SELF CARE ($n = 43$, 10%) and INDEPENDENCE as a learner ($n = 41$, 10%) to be important in managing their study. Students who recognised their independence as a learner included in their responses aspects of self-management, taking time on their own to develop their reflections and cultivate their own understanding at their own pace. This included 'individual alone time to complete learning' (#229), 'less group conversations and more independent work' (#40) and 'Having the time and flexibility to understand concepts myself without the embarrassment of others seeing me fail first' (#204). 10% of responses related to SELF CARE included aspects such as 'looking after my social and emotional wellbeing' (#113), 'daily exercise' (#151), getting a good work and rest balance which included 'relaxation time' (#217), and using rewards including 'coffee' (#14), 'coffee' (#179) 'coffee!' (#200), 'coffee lol' (#385), and 'Coffee and more coffee' (#385).

External locus of control

When analysing the data, overall student responses leaned more heavily towards an internal LOC. However, a high percentage of participants in the study ($n = 310$, 70%) identified external factors which supported them to best manage learning and time. We considered external factors to be those elements affected by the control of others. One third of respondents ($n = 152$, 35%) identified the availability of LEARNING RESOURCES as important in supporting them to best manage their learning and time. LEARNING RESOURCES availability included access to and quality of lectures and tutorials, tools on the Learning Management System, and clear instructions. Student responses indicated that it was important to them that 'lectures and tutorials ... are informative and interactive' (#1). They also noted that 'compact information' (#315) was appreciated, with students suggesting concise lectures and tutorials (#343), 'rich reading content (so

small number of readings but good ones)' (#196) and examples that established the 'relation-[ship] between what I am learning and the practical application to the real world' (#302) were valued.

The availability of the course was also identified as a support for students as a way to manage time and learning. Availability included access to lectures, tutorials, resources, multi-modal representations and visual examples of course content, especially useful for students who were unable to attend live sessions (#177). Video recordings of lectures and tutorials were also identified as an important support 'as I enjoy listening to the discussions and drawing meaning from them' (#238). It was acknowledged that it was supportive when courses were 'presenting information in different ways (lectures, cognitive grappling during tutorial interactions, and independent reading' (#233). Further, the 'availability of all course materials at all times (no locked materials)' (#73) was noted by participants. Students wanted to have access to learning materials at a time that suited them; 'I love when the entire semester of work is available' (#22)

COURSE & ASSESSMENT DESIGN were also identified by 25% of participants ($n = 106$) in this study as at least one of the three top aspects which supports them to best manage their learning and time. COURSE AND ASSESSMENT DESIGN included all aspects of the course requirements and expectations as set out by staff, course design, assessments documentation, expectations, schedules and deadlines. Creating a 'well-structured course' (#176) was seen as important by the respondents, specifically in terms of 'being able to locate and find content' (#176) and 'knowing what is required to complete a task (module, assessment)' (#363). Six participants identified that the course should be structured to allow flexibility, such as 'attending live tutorials or watching the recordings if not able to attend' (#356).

Again, students identified 'succinct instructions to activities and assessments' (#159) as important for their learning of content and time to prepare for assessment. This included 'guides and instructions' (#38; 154) and 'clear and explicit task sheets with a supporting presentation' (#233) so students were aware 'what standard is expected of me' (#124). Many students identified that study schedules with 'deadlines' ($n = 26$) and due dates ($n = 13$) 'from the beginning' (#281) assisted learning and time. It was also acknowledged by participants ($n = 21$) that reminders of upcoming task and assessment completion was useful. Students suggested reminders could be communicated 'through the forums' (#316).

STAFF were also important to supporting students to best manage their learning and time ($n = 76$, 18%). Nominations coded as STAFF included having access to staff, their skills, availability for support, providing feedback and maintaining good communication. Students felt it was important 'to have opportunities to ask clarifying questions' (#112), whether that be face-to-face ($n = 9$), through emails ($n = 4$), forums ($n = 19$) or through 'Zoom sessions where I have the opportunity to ask questions' (#77). Communication was important for feedback ($n = 17$), and the opportunity for 'reassurance and guidance' (#369). Emotional support from staff ($n = 13$) was also identified as an important aspect of STAFF within the course, with participants who listed 'support, empathy, respect' (#167) as a valuable support for their own learning.

PEERS ($n = 68$, 16%) and FAMILY ($n = 36$, 8%) were further identified by participants as valued in supporting their learning. Valued interactions with peers included discussions and formal and informal collaboration and group work of other students within their course. Benefits of peers included 'opportunities to discuss and engage with peers to reflect on and consolidate learning' (#295), interactions to build on knowledge such as 'input from other students through the forum' (#129), as well as 'working with friends' (#430) to complete tasks. Support from family included support from their partner or children, friends and their community, including services as childcare. This included emotional support and 'understanding from family' (#168), as well as practical applications such as 'day-care for the kids' (#68) and family who were able to help out at home (#417), or provide 'space and time to complete work' (#265). This was also identified in the LEARNING WORKSPACE ($n = 29$, 7%) where a quiet comfortable workspace with no interruptions was seen as helpful.

Internal versus external LOC

While 52.6% students nominated a combination of internal and external LOC in their response, 29.5% of respondents nominated only internal LOC aspects (i.e. all their nominations were coded to internal LOC codes) and 17.9% nominated only external LOC aspects. 24.9% of respondents nominated mostly internal LOC aspects (meaning 2/3 responses for students who provided three responses), compared to 23.3% who nominated mostly external LOC aspects. (4.4% of respondents who provided only two responses coded one internal and one external LOC). 82% of respondents nominated at least 1 internal LOC aspect. 70% nominated at least 1 external LOC aspect (see Figure 1).

Importantly, when comparing the responses of students who nominated aspects that supported their learning and time, the categories in order of significance remain unchanged, showing that, regardless of a student’s propensity to view the issue of managing their learning and time from an internal or external locus of control, the prevalence of some issues over others was consistent (as demonstrated in Table 3).

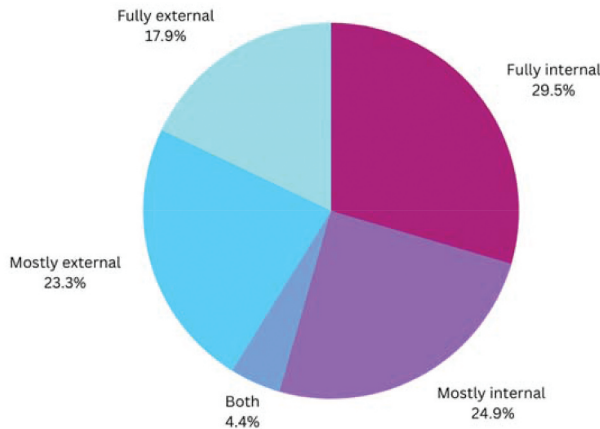


Figure 1. Orientation of responses according to LOC.

Table 3. Student responses according to fully internal and external LOC orientation.

	% Respondents	No. of respondents
Fully internal LOC (n = 127)		
Planning schedule; diary; organisation	80%	101
Study techniques and aids; lists; routines; practice	68%	86
Effort: application; attendance; practice; help seeking	32%	41
Attitude: motivation; confidence; discipline; focus	28%	36
Self care: health; diet; rest; balance; coffee	17%	21
Independent learner reflections; own pace; own understanding	10%	13
Fully external LOC (n = 77)		
Learning resources access; tutorials; lectures; forums; f2f; on campus; engaging examples	75%	58
Course & assessments design; expectations; instructions; schedules; deadlines; flexibility; reminders	60%	46
Staff access; skills; support; feedback; communication	36%	28
Peers discussions; collaboration	25%	19
Family partner family community; support network	6%	5
Learning workspace privacy, concentration	5%	4

Discussion and conclusion

Our original intent in approaching this study was to gain insight into how we could better support our students in managing their learning, which by extension, might contribute to higher retention and engagement. The data highlighted that the responding students reflected a number of the concerns that are mentioned in the literature, including balancing competing demands of family life, work and wider commitments alongside their study, the strategies that they saw as important in managing their time, and expectations regarding how their learning is accessed and delivered to make the juggling act possible.

The findings showed a majority of students (52.6%) demonstrated an interplay of internal and external LOC, while 29.5% identified fully internal and 17.9% indicated fully external LOC. Regarding the 56% of the total quotes (as separate to respondents) coded as an internal LOC nature, the top two nominated aspects represented dimensions that were largely beyond our purview as educators, with participants nominating the following internal LOC aspects:

- (1) the students' own planning, organisation, and time management (58%); and
- (2) establishment of their own study techniques, aids, and practices (37%).

Given that research demonstrates a correlation between an internal LOC, higher self-efficacy and more positive academic outcomes (Bachekapili and Karaman, 2020; Landis, Altman, and Cavin 2007; Valdes-Cuervo et al. 2015), this was a pleasing finding, suggesting that a sizeable proportion of respondents in our study appeared to take responsibility for their learning, and were making explicit connections between their own activity and effort and its impact upon successfully managing their study.

External LOC dimensions were identified in 44% of the codes. Student responses in our study were similar to Al Mulhim's (2021), who looked at LOC for learning retention and found that students with external LOC relied on the course to provide learning environments that met students' needs. The 3rd and 4th most nominated aspects in response to our question were:

- (1) **Access** to university provided learning resources (35%); and
- (2) Course and assessment **design** (25%).

These were of particular interest to us, as they represent the areas which we as educators have the most direct power to have impact. Further, a common feature of responses across both of these aspects was the notion of targeted resources, succinctness and authenticity (real-word relevance), as well as a visible desire for flexibility in ways to approach learning (such as reading, viewing, listening or interacting with others) and in expectations around access according to different time schedules, with a repeated emphasis on having open access to all resources and assessment requirements from the commencement of the course. Presumably, such features are useful for students when balancing competing work, life and study responsibilities which then contribute to their own planning. Supports for students such as explicit and timely communication, clear instructions and well-structured course were also valued.

Interestingly, staff were identified as the 5th highest nominated code. While previous research highlights that staff support, care and relationship is of great significance in student engagement and enjoyment (Bell 2022; Burke, Fanshawe, and Tualalelei 2022), only 18% of the students (76/430) nominated 'staff' as important to managing learning and time. The key difference between this study and former studies was the focus of our research question on supporting students to best manage *their* learning and time, as compared to cultivating engagement (as per the Burke et al., and Bell studies). As such, the data leads us to consider that, while care-centred staff interactions with students are a fundamental in engaging students and fostering belonging, it appears students are not always looking to staff to help them manage their own study journey. However, as highlighted

above, this study identifies the vital role staff play in designing and accessing the learning environment, and that their presence and support are still valued.

Importantly, while aspects contributing to successfully managing learning and time were coded dichotomously as being either internal or external LOC, the interdependence of the various factors must be taken into consideration. For example, students who indicated that planning and scheduling were key internal strategies to help them manage their study and time must rely upon the external availability of learning resources at times they are required. Similarly, access to staff is indicated as a valuable external resource but requires students to apply their own effort to access such support. Equally, some externally coded aspects, such as learning workspace could readily be within a student's control to create by making a decision to seek seclusion while studying, or outside their locus of control owing to the inability to find an interruption-free space.

Coming back to the original intent for this study: what do these findings help those of us in higher education to understand in supporting students to manage their learning and time, and how do these insights help to support retention and engagement? Student responses highlight that – for a majority (52.6%), an interplay of internal and external LOC factors is useful to managing their study. It thus seems a worthy goal for universities to support students both through attention to the factors within the university's purview, but further, through supporting students in cultivating and strengthening an internal LOC themselves. However, the variety of ways that students in this study sought support both externally and internally varied greatly. How is such diversity of needs to be supported? It is this finding that leads us to conclude that flexible, multi-pronged strategies, centred around the principles of Universal Design for Learning (UDL) will be more important than ever in supporting the diverse modern tertiary student population. The intent of UDL is to make learning accessible for all learners, regardless of their ability or disability. However, as an extension of this, the principles of UDL are fundamental in supporting diverse student preferences and factoring in a range of ways to access and express learning (Behling and Tobin, 2018). These recommendations regarding the need to offer tertiary students greater flexibility align with and support existing research in this domain (Moitus, Weimer, and Välimaa 2020; Stone, Freeman, and Dymont 2019) and have the capacity to address a diversity of support needs as expressed by students in this study.

One criticism of UDL, however, is that it can foster a tendency to privilege a 'one size fits all' (Fovet 2021, 32) approach to the development of learning materials and teaching. Similarly, cautions regarding increased flexibility is that this demands 'more self-regulation and engagement, a cause for student dropout' (Xavier and Menesis 2021, p. 72). As a means to mitigate against these concerns, we advocate that the principles of UDL are interwoven with the deliberate enactment of pedagogical care (Noddings 2010). A pedagogy of care foregrounds the recognition of students as individual learners, rather than en-masse cohorts, with whom educators work in 'a relational exchange, rather than adherence to a fixed set of procedures' (Burke, Fanshawe, and Tualalelei 2022, 295), whether this be through direct communication or through the development of learning resources and interactive opportunities that permit students to become emotionally engaged (Busteed 2015). According to Noddings (2010), pedagogical care has at its heart not only a holistic care for the student experience, but also provides intentional opportunities for students to develop care for their own learning (Noddings 2010), which should lead to the development of agentic, empowered and life-long learners who develop a stronger internal LOC. Further, pedagogical care has been demonstrated as a means to enhance student engagement (Burke and Larmar 2020; Burke, Fanshawe, and Tualalelei 2022), which has been demonstrated to have a direct impact upon student belonging and retention (Munoz, Baik, and Lodge 2020).

The findings further demonstrate the need at the institutional level to provide personal and learning support services which sit alongside flexible academic provisions and support for holistic care that students can access as required. Importantly, we do not propose external services absolve educators of all responsibility for student wellbeing, but rather, recognise the opportunity they have as 'front line workers' to partner with external supports – particularly with students who possess a stronger external LOC and may need the

assistance to recognise and access additional services. It is recommended therefore that university educators recognise and are supported by institutional policy and process regarding the significance of UDL and care-centred approaches in supporting the retention, engagement and wellbeing of the busy contemporary tertiary student. This understandably represents a significant time investment for institutions and educators. As such, institutional policy and workload models need to consider how to support staff in enacting this level of flexibility and support.

It is acknowledged that the findings from this project represent a specific context: 430 students within the School of Education at a single Australian regional university with a high proportion of online students. The study's findings have also not been differentiated according to mode of enrolment owing to this demographic data not being collected in connection with the open-ended research question. We therefore do not make claims that the findings can be generalised across differing institutions and student cohorts; however, we hope that the suggested key areas for consideration prove useful in related contexts in supporting student learning and recognising the interplay of internal and external LOC. Further, we anticipate that approaching student support through a lens of UDL may be beneficial across a range of institutions and can be tailored to individual learning and teaching contexts. Ongoing work in this space is now required to develop and implement initiatives, informed by the evidence in this study, which can be tested according to impact against LOC theory of support. We hope that such initiatives might be conducted across multiple institutions in broader contexts that represent a diversity of study fields and institutions of learning. Given the ever-changing dynamic of higher education, we further recommend that longitudinal data regarding preferences and expectations around learning support and time management be tracked over time, in conjunction with demographic data, to determine more specifically how diverse student populations can best manage their learning and time, and by extension, improve retention, engagement, and ultimately – learning outcomes.

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