

# A 'just in time intervention' to support the academic efficacy of at-risk first-year students

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## *Abstract*

*This paper describes an intervention (First-Assessment First-Feedback) targeting at-risk first year students who failed or marginally passed their first piece of university assessment. The FAFF process is designed as an academic recovery, just-in-time intervention to develop self-management and problem-solving capabilities in first year students. The intervention involves completion of a reflective workbook to help students understand the reasons for their performance and to identify improvement goals and strategies. This is followed by an intensive guided discussion between the student and their tutor which concludes with action planning and follow-up to maintain momentum. The success of the intervention is indicated by higher rates of submission and pass rates for the second assessment item, as well as for the course overall for those students undertaking the intervention.*

## *Introduction*

### The Context

It is well recognised that commencing students' early experiences of university directly influence both their ongoing learning outcomes and persistence. Students' *performance on assessment* is perhaps most influential in this regard. How well students perform on their early assessment tasks can initiate either a virtuous (building confidence) or vicious (decreasing confidence) academic cycle. Students who fail, 'just pass' or who 'do worse than expected' on early assessment are likely to suffer a loss of confidence, both personal and academic (Zajacova & Espenshade, 2005). However, this performance feedback may also signal a gap in study skills and practices, self-management capability or academic efficacy that may be amenable to early intervention and improvement.

More importantly, first year students often do not possess *sufficient self-regulation* and problem-solving capacities to adequately prepare for, or process these potentially challenging experiences, with implications for their subsequent academic engagement, learning outcomes and persistence. For example, recent research points to a lack of fit or *incongruence between staff and commencing students'* (mis)-conceptions (e.g., What's involved? How best to prepare?) and expectations (e.g., What investment is required? What help is available?) of assessment tasks (Collier & Morgan, 2008). This is even more likely to be the case

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with first-generation university students who, by virtue of their circumstances, may possess significantly less cultural capital and academic resourcefulness (Hattie & Timperley, 2007).

Current approaches to *preparing students for academic success* at university (e.g., first-year seminars, study skills courses) while delivering benefits in terms of academic and social integration (Williford, Chapman & Kahrig, 2000-2001), are often relatively generic or broad-brush in nature, and evidence little impact on retention (Ryan & Glenn, 2002-3). Given that whole-cohort preparatory programs may not be feasible in many degree contexts, and the pervasive paradox that students often most in need of assistance do not seek it, there is a pressing need to consider alternative strategically focused, time effective and context relevant interventions. Recent cross-institutional multi-level analysis on the efficacy of transitional or preparatory programs for first-year students (Porter & Swing (2006) indicates that *a more focused approach* linked to specific academic tasks in a particular disciplinary context may be the most effective way to impact on academic capability and persistence. Thus, we argue that facilitating commencing students' engagement with, performance on, and response to feedback from their early assessment, is a justified priority on both theoretical and practical grounds.

The construct of self-regulation is well-established in academic, workplace and social contexts (Bandura, 2001). Self-regulation can be understood as a set of metacognitive, behavioural and motivational strategies that learners can use to control their learning processes (Zimmerman, 1990) and actively manage their own learning outcomes (Pintrich (1999). Self-regulation is particularly required at times of change, stress or transition where a person is required to respond to new demands and where automatic or routine responses are not sufficient. Thus self-regulation is particularly salient in higher education contexts because of the (often implicit) expectation of independence placed upon commencing students. Not surprisingly, there is significant variability in peoples' capacity to effectively self-manage (bring to bear their limited cognitive and motivational resources) in the face of environmental challenges.

Students' capacity to self-manage or self-regulate their academic performance can be understood a function of a complex array of interdependent personal and environmental variables (Bandura, 2005). The particular variables that are relevant to a commencing student in higher education are identifiable from the research to date (See Figure 1). At the most general level, a student's environment can be usefully conceptualised in temporal terms as the interaction of past, present and anticipated future factors. A student's *sense of their past* or previous learning experiences, either directly (e.g., their experience as learners in school or the workplace) or vicariously experienced (e.g., the educational experiences and expectations of family members) contributes to the types and level of cultural and social capital they are able to bring to bear to the task of commencing higher education (Hattie. & Timperley, 2007). These may be thought of as potential 'push' or 'restraining' influences on academic motivation and performance. Relatedly, students' *sense of their future* (viz., personal and career), and in particular the potential contribution they envisage that 'attending university' may make, can be thought as a motivational 'pull' factor (Markus & Nurius, 1986; Miller, Debacker & Greene, 1999). Students' *sense of their present* environment A 'just in time intervention' to support the academic efficacy of at-risk first-year 2 students, Keithia Wilson and Alf Lizzio, (2008) FYE Pacific Rim Conference, Refereed Paper

is perhaps most directly influential on their academic performance and provides the most salient challenges for effective self-regulation. Commencing students are required to simultaneously make sense of and negotiate both a university and work-life environment. The former requires them to deconstruct often implicit clues as to the 'rules of a new game', and the latter requires them to balance a complex suite of competing concerns and demands (e.g., employment, carer responsibilities, social preferences) on their time and energy. Clearly, all these environmental factors interact to produce a dynamic and unique 'demand context' for each student.

Students' personal processes also impact on their functioning. While a wide range of factors may potentially influence academic performance (e.g., level of disciplinary-relevant knowledge), three factors in particular are proposed as particularly influential on students' capacity for self-regulation. Most centrally, students' metacognitive conceptions or *beliefs about learning* and knowledge (e.g., whether abilities are fixed or malleable or whether knowledge must be certain or can be contested) will influence the depth and focus of their learning strategies (Schommer, 1994). Students' *academic efficacy* (viz., their expectations of successfully accomplishing a task) either general or situation-specific, (Grant & Franklin, 2007; Stajkovic & Luthans, 1998; Garcia and Pintrich, 1994) and their level of achievement *motivation* (or negatively expressed, students academic apathy or lack of intrinsic interest) will influence their level of task engagement and persistence (Charlton & Birkett, 1999; Langley, Wambach, Brothen & Madyun, 2004).

Thus successful academic engagement requires each student to manage themselves in the context of their own particular mix of environmental and personal factors. This *process of self-regulation* requires students firstly to make an accurate and realistic appraisal of their circumstances, and from this to set appropriate goals. Success then depends on students utilizing the strategies that are most likely to achieve their goals and finally to actually put these into action. For example, self-regulation in the context of successfully 'undertaking assessment' would require a student firstly to understand the demands and constraints of the assessment task (*contextual awareness*), then focus on prioritizing 'what has to be done at what personal standard' (*goal setting*), then organise their time and choose study strategies best suited to a particular form of assessment (*strategy selection*) and to manage distractions, constraints avoidances in order to deliver a quality product (e.g., essay, exam, etc) in a timely way (*action*). Clearly the process of self-regulation is iterative and thus cycles back from action to contextual awareness. To the extent to which commencing students are able to achieve some level of mastery of this process with early assessment tasks they are likely to develop increased confidence and competence as university learners (a virtuous cycle). However to the extent that they experience early 'failure' (be that in absolute terms (viz., a fail grade), or in symbolic terms (viz., not doing as well as expected), or in systemic terms (viz., feeling let down by unfair or indifferent institutional processes)) they may not persist or lessen their engagement with university study or do so with a diminished sense of academic efficacy. In this sense failure on assessment can be understood as a failure of academic self-regulation (viz., a breakdown at one or more stages of the above action cycle).

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From this perspective ‘academic recovery’ requires the student to become somewhat metacognitive about ‘what happened’ and ‘what should be done differently’ to ensure better future outcomes. While many student are able to evidence this process of reflection on and learning from experience (viz., thinking about their thinking), however paradoxically, those most at-risk may be least able to do this. The emotional consequences of failure and the competing and complex demands of a new environment may combine to inhibit problem solving and help-seeking behaviour. The process of encountered difficulties (e.g., failure) triggering negative affect, or alternatively competing priorities (e.g., social entertainment) triggering positive affect (both of which can serve to distract from academic goals) is well documented in the coping literature. However, ironically, such points of maximal stress may also provide the optimal leverage to involve students in focused and motivated conversations about ‘how they are going’. Such conversations would be seeking to facilitate what Boekaerts and Corno (2005) describe as bottom-up self-regulation (where students respond to cues or feedback from the learning environment), as distinct from top-down self-regulation (where goals are stimulated by motivations such as personal interest and values).

### The Intervention

There is a substantial empirical and theoretical literature seeking the holy grail of definitive predictors of success and retention (e.g., prior academic achievement, personality factors, demographic characteristics) (Berger & Milem, 2000; Komarraju & Karau, 2005; Shouping & Kuh, 2002). From this has emerged a pragmatic literature around the task of developing early-warning systems that are able to detect students who are ‘at-risk’ or are experiencing adjustment difficulties (Beck & Davidson, 2001). While there is some variability in the types and timing of ‘threshold data’ that is used to signify at-risk status (e.g., demographic factors, student engagement surveys and the monitoring of student dis-engagement behaviours (e.g., not using library or email, non-attendance at class)) all reflect a concern with early intervention.

The traditional (first generation) approach to helping at-risk students has been direct instruction in learning skills or study strategies for student groups regarded as needing remediation or support, but these can produce suboptimal results or be somewhat generic and de-contextualised in focus. There is some evidence to suggest however that when students are equipped with a vocabulary and language of self-regulation (viz., they have a working understanding of the issues and tactics) they are better able to persist when faced with challenges or obstacles (Kuhl & Kraska, 1989). The effectiveness of such interventions may be further enhanced if self-regulation is approached in a ‘real-time real-demand’ context such as performance in a specific course.

We propose that a just-in-time scaffolding intervention has significant potential to enhance first year students’ academic success following the ‘critical incident’ of receiving feedback on their performance on the first piece of assessment. The design of this First Assessment First Feedback process is informed by efficacy building, performance feedback and self-regulation theory and is designed to help commencing students:

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- Better understand their approaches and attitudes to university assessment;
- Identify any competency/skill gaps and develop appropriate plans to assist their performance;
- Strengthen their sense of efficacy or optimism, and;
- Strengthen their capacity to self-manage their learning.

The intervention can be thought of as a form of intrusive advising (Earl, 2006) in that help is initially offered in response to an identified ‘academic crisis’ or at a period where students are more likely to be responsive because they are engaged with a real problem or a decision with real consequences.

The basic steps of the First Assessment First Feedback process are:

1. Students who fail or ‘just pass’ their first piece of assessment are contacted by their tutor and invited to participate in an academic planning process.
2. Students complete a reflective workbook structured around a self-regulation problem-solving cycle (viz., facilitating readiness, self-assessment of performance gaps, clarification of efficacy expectations, goal setting and action planning) designed to help them understand the reasons for their performance on early assessment and identify improvement goals and strategies.
3. Students then meet with a tutor and participate in a structured academic advising discussion based on the workbook. This process concludes with action planning and where appropriate, linkage/referral to university resources.
4. Tutor and student ‘stay in contact’ (e.g., pre-arranged phone or email contact) to maintain positive momentum.

The research questions of interest were:

- Does the First Assessment First Feedback intervention contribute to the academic persistence and success of at-risk students?
- How do at-risk students make sense of, or understand their underperformance on early university assessment?

### *Method*

#### Participants

Students enrolled in first year psychology courses participated in this study.

#### Procedure

Students who failed or just passed their first piece of assessment (a Week 7 multiple choice exam) were contacted by their tutor via email (in Week 8) and invited to discuss their results. This was followed up by a phone call and then a face to face interview of approximately 45 minutes duration.

Three sources of quantitative and qualitative data were collected:

- Students completed an evaluation survey containing both rating scales (1-7) and open-ended questions that focused on both their experiences of the process and outcomes of the intervention.

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- The subsequent academic performance of students who undertook the intervention (n = 30) was compared to students of similar achievement in the same courses who did not participate in the intervention (n = 45).
- Students' responses to the workbook were analysed for key themes related to their understanding of their underperformance.

### *Results and Discussion*

At-risk students who undertook the intervention (viz., workbook plus structured consultation with tutor) following their first piece of assessment were more likely to have enhanced academic performance than comparable at-risk students who did not. The intervention improved both student persistence (90% of students who participated in the intervention submitted their next piece of assessment compared to a base submission rate of 78% of comparable students who did not) and academic success (100% of students who participated passed their next piece of assessment compared to a base pass rate of 77% of students of comparable academic standard). Overall academic success also appears to be positively influenced by the intervention, with 60% of students who participated in the intervention passing the course compared to only 24% in the non-intervention comparison group.

At-risk students' self-reported evaluations of the process and outcomes of the intervention were uniformly positive. Students rated the intervention as producing high levels of academic related learning (mean = 5.7, sd = .68) and personal development (mean = 5.02, sd = .62). Specific improvements were reported in terms of greater insight into the reasons for under-performance on assessment (mean = 5.56, sd. = .59), and increased efficacy and optimism for future performance (mean = 5.57, sd.= .68). Given their superior comparative performance reported above, it would seem that students' enhanced sense of efficacy was well-founded. Importantly, given their at-risk status, students also reported the process itself as non-aversive (mean =5.31, sd = .74).

Analysis of students' written feedback provided clear indications as to the specific mechanisms that contributed to their enhanced performance and efficacy. The First Assessment First Feedback intervention clearly functions at socio-emotional, task specific and general self-regulatory levels. Thus, students described the positive value of feeling normalised (*I thought it was only me*), experiencing positive regard and support (*The experience of somebody caring helped me to feel better about myself*), cueing help-seeking (*I wouldn't have done anything if you hadn't reached out*) and the value of problem solving and goal setting (*I needed this structure*). The high ratings for fixed-ability related concerns (*I'm not smart enough*) in students' explanations of their under-performance (fail or near fail) on the first piece of assessment (see Table 1) compared to effort and organisation related concerns (*I didn't work hard enough*) also indicate the fundamental challenge in facilitating movement from an ego to a learning orientation (Kluger & DeNisi, 1996). Consistent with this, two meta-themes are apparent from student feedback that suggest that the intervention may also have contributed to students' capacity to self-regulate in an academic context: firstly an improved capacity to

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clearly appraise their academic performance; and secondly, a shift from an anxiety-based orientation to a problem-solving task orientation.

Importantly, tutors reported that the structured process strengthened their relationship with students and established more effective help-seeking and self-regulation norms within the cohort. In a real sense structured interventions such as this can also contribute to developing a positive culture (Kuh, 2001) in a course, and this may have real benefits given that perceived social support has been associated with academic achievement in first year (De Berard et al., 2004).

This pilot study has demonstrated the efficacy of this type of intervention with first year students in a particular setting. Work is currently being undertaken to investigate its applicability to other disciplinary and course contexts.

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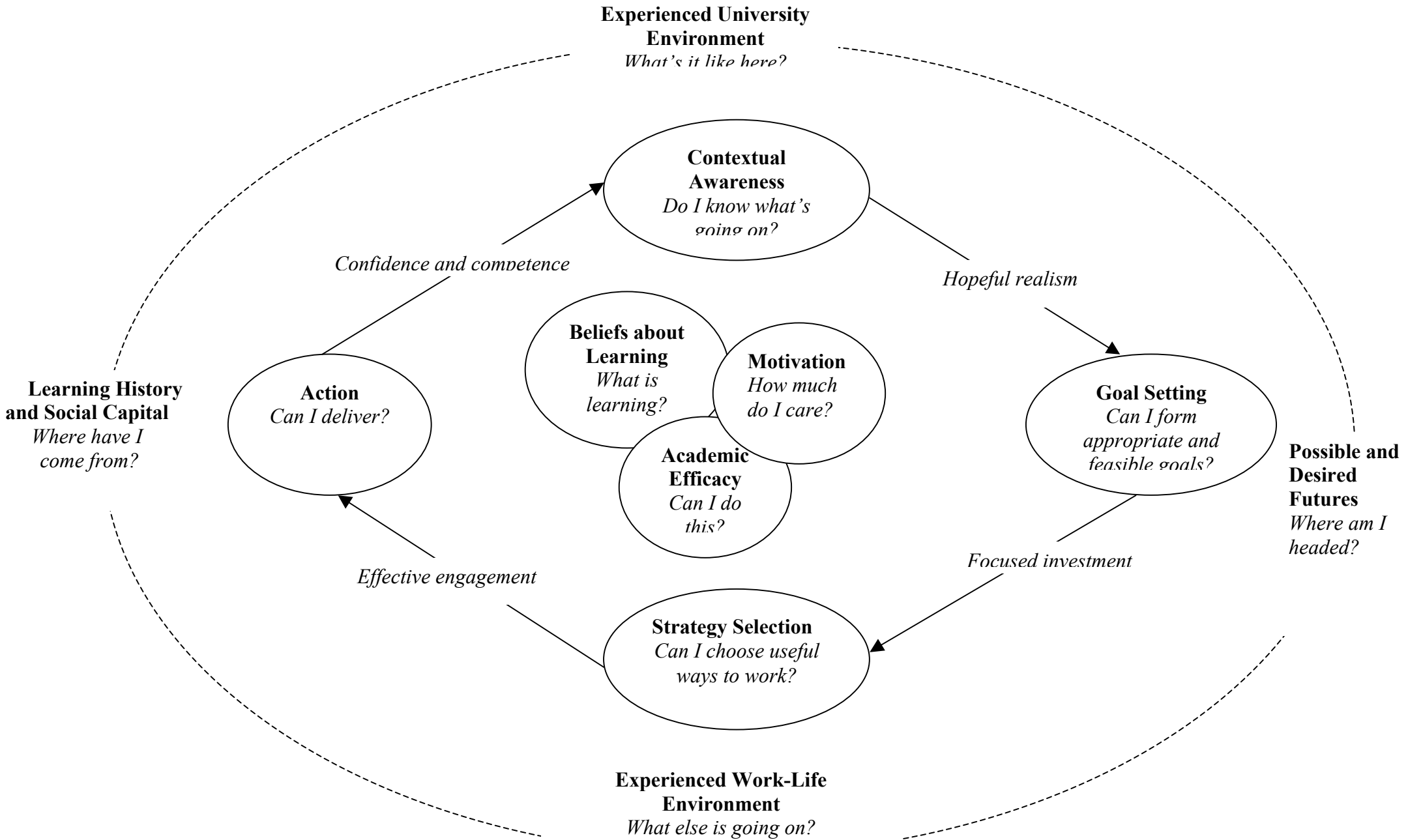
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**Table 1: First year students' endorsements of explanations (1 strongly disagree – 5 strongly agree) for failing or near failing their first piece of assessment.**

<b>Type of explanation for performance</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>My ability:</b> I worry that I'm not smart enough or don't have the ability for uni	4.56	.65
<b>My effort:</b> I didn't do enough work/study or left it to the last minute	3.75	.57
<b>My motivation:</b> I couldn't get interested in the material	3.06	.87
<b>My organisation:</b> I wasn't organised or systematic in my approach to study/preparation	3.44	.55
<b>My reading:</b> The material doesn't seem to sink in or I have trouble with the technical jargon	3.69	.58
<b>My life-work-study balance:</b> I have been too busy with other commitments	3.25	.68
<b>My attendance:</b> I missed some key tutorials or lectures	2.31	.85
<b>My anxiety:</b> I was anxious about it and that got in the way	2.88	.59
<b>My task strategy:</b> I missed the point of the exercise (e.g., studied the wrong material/I didn't answer the question, etc)	2.94	.71
<b>My help-seeking:</b> I knew I was struggling/didn't understand the work but I didn't want to ask for help or assistance	2.19	.55
<b>Fairness:</b> I think the assessment task or marking was unfair or inappropriate	1.94	.46
<b>My inclusion:</b> I don't feel comfortable at uni/ I feel like I don't really fit in or belong	1.75	.63
<b>Support provided:</b> I think the expectations for the task were unclear	2.31	.58
<b>Teaching:</b> I had difficulty with the approach to teaching in this course	2.25	.74
<b>A life crisis :</b> Something unexpected happened in my life that impacted on this piece of assessment	2.56	.66

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**Figure 1: The environmental and personal processes influencing the academic self-regulation of commencing students.**





