Supporting first-year University student success via multi-disciplinary workshops: The College Connect way

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Abstract

Students face many challenges as they transition to university during their first year of study, including academic expectations. The transition process can be eased through supplementary support encouraging development and practice of academic skills through self-regulated learning strategies. These strategies can increase motivation, self-efficacy, and engagement, leading to greater academic success. Multi-disciplinary workshops embedded within a first-year unit for students in pathway programs at a regional university in Australia aim to encourage the development and practice of these academic skills within a supportive environment. Analyses of student attendance, unit score, and grade point average (GPA) were undertaken to determine if there was a relationship between workshop attendance and academic success (unit score) and academic performance. Results indicate that students attending workshops tend to achieve better unit and GPA results than those who do not. Significant positive relationships between attendance and these measures of performance suggest multi-disciplinary workshops may contribute towards greater academic success. The approach presented in this study could thus be beneficial for higher education institutions to support the transition of first-year students, and may be an alternative to support strategies that are focused on individual units of study.

Keywords: Academic Success, Student Engagement, Pathways, Transition, Self-Regulated Learning, University Students

Introduction

The purpose of this study is to investigate the role multi-disciplinary workshops may play in the academic performance of students enrolled in their first year of the Diploma and Associate Degree pathway programs in a regional university in Australia. Student engagement has received significant attention in the literature over the last decade. While researchers agree on the importance of student engagement in higher education, they do not agree on the definition of this term (Doyle & Nieuwoudt, 2021). Despite the lack of an agreed definition, student engagement has been linked to motivation, persistence, retention, and academic success. These factors contribute to student learning and foster a sense of belonging to a learning community (Kuh et al., 2008). University students who are motivated are more likely to learn if they feel a sense of belonging where they matter as valued members of the learning community (Tinto, 2019). In turn, students with a higher sense of belonging are more likely to stay and succeed in their studies (Gillen-O'Neel, 2019).

Developing this motivation to learn in first-year students transitioning into university life has been the subject of research in the university sector for some time (Perry & Allard, 2003; Tett et al., 2017). This process of transition overwhelms many first-year university students, especially if they struggle with the expectations of this new environment (van der Meer et al., 2010). This struggle can be greater for students who do not meet the admission requirements for their undergraduate degree of choice. University pathway programs (e.g. enabling/bridging programs, undergraduate certificates, diplomas, associate degrees) offer students who do not meet admission requirements for an undergraduate degree an alternative means to commence university studies and progress towards their undergraduate degree. The structure, content, and delivery of these programs support students to transition to - and ultimately succeed in - their university studies.

Transition pedagogy addresses diverse first year cohorts by emphasising engagement, support, and belonging (Kift, 2015; Kift et al., 2010; Nelson et al., 2012). Engagement is enhanced by a sense of belonging (Zepke, 2013) which, in turn, is associated with self-belief (Millman & McNamara, 2018), academic self-efficacy, and intrinsic motivation (Freeman et al., 2007; Tinto, 2019). A feeling of belonging can be enriched in a group setting, particularly if conditions are created to enable peer-to-peer connections driving academic and social integration (Tinto & Pusser, 2006). First year classrooms offering structured opportunities for students to interact with each other are a powerful strategy to enhance motivation and develop this feeling of belonging. A learning community, then, can be described as an inter-disciplinary academic and social environment which promotes collaborative learning in a space that has clear links between units students are enrolled in so that they are connected to each other (Tinto, 2019). This type of learning environment encourages engagement, and provides triggers and appropriate conditions for informal learning to occur (Baik et al., 2017). When these opportunities arise, students may then feel connected to their peers leading to a feeling of belonging to the university (Palmer et al., 2009). Structured learning communities, therefore, appear to support the development of self-regulated learning strategies in university students (Beishuizen, 2008).

‘College Connect’ is an example of a structured learning community for commencing students in university pathway programs. Multi-disciplinary workshops, which form the main part of the ‘College Connect’ strategy, were introduced in 2015 to encourage academic skills development across multiple units simultaneously in diploma and associate degree courses. Workshops are purposefully timetabled within a foundation core unit that all students must enrol in during their first session of study. The core unit itself introduces principles of academic integrity, time management, digital literacy, critical reading, and academic writing conventions within university discipline-focused study. However, the workshops do not focus upon the content within the core unit alone, but on key skills needed to succeed in all of their units of study.

By attending College Connect workshops, students engage in the self-regulated learning strategies of peer learning (Effeney et al., 2013) and help-seeking behaviours (Richardson et. al., 2012). Self-regulated learning is a process by which students actively engage in learning processes and exercise control over the management and planning of learning actions (Ally, 2004). Self-regulated learning involves an interaction between three key characteristics: (i) students’ self-observation, (ii) students’ self-judgement, and (iii) students’ self-reaction. These three characteristics enable students to monitor their actions, evaluate their performance, respond to performance

outcomes and, by doing so, actively participate in their own learning processes (Zimmerman, 1989). Strategies to develop self-regulation include time management (i.e. ability to plan study time and tasks) (Effeney et al., 2013), metacognition (i.e. awareness and control of thoughts) (Flavell, 1979), critical thinking (i.e. evaluating information) (Richardson et al., 2012), effort regulation (i.e. persistence when confronted with challenges) (Richardson et al., 2012), peer learning (i.e. collaboration with other students to assist individual learning) (Effeney et al., 2013), and help-seeking behaviours (i.e. obtaining assistance to overcome challenges) (Richardson et al., 2012). Several self-regulation strategies can be deployed concurrently and may also be mediated by other factors, such as motivation (Bean & Eaton, 2001) and self-efficacy (Bandura, 1977).

Self-efficacy can be described as an individual's belief in their ability to succeed in given situations and/or completion of given tasks. It serves as a foundation for students' persistence in the face of academic challenges (Tinto, 2017). Research has found that self-efficacy can mediate a positive relationship between class attendance and academic performance (Spedding et al., 2017). Therefore, it may be of considerable importance during a student's first year at university as they adjust and adapt to their new academic environment (Kitsantas et al., 2008). Academic Self-Efficacy (ASE) can be defined as a student's judgement of their ability to successfully achieve educational goals in an academic context. Examples of such goals include mastery of specific academic or discipline-specific skills (Komarraju & Nadler, 2013) and attaining strong examination results and/or final unit grades (Honicke & Broadbent, 2016). Positive correlations with moderate effect sizes have been reported via meta-analyses between ASE and academic performance (Richardson et al., 2012; Robbins et al., 2004). The meta-analysis performed by Richardson et al. (2012) suggests ASE beliefs accounted for up to 9% of variance in students' Grade Point Average (GPA) outcomes. Studies, such as those by Ferla et al. (2010), Diseth (2011) and Mega et al. (2013) suggest the link between ASE and academic performance is mediated by factors such as prior academic performance and self-regulated learning strategies.

Self-efficacy and the application of self-regulated learning strategies are important drivers of academic success during students' first year of university study. Students who are highly motivated, organised, and goal-oriented are likely to apply a range of strategies to maximise their success. One of these strategies is accessing support strategies offered by universities. An example of a support strategy is the provision of Peer Assisted Study Sessions (PASS). PASS is a form of supplementary instruction (Tinto, 2008) driven by peer-led study groups in which students present and collectively share knowledge and address content-driven problems within challenging units of study. PASS is offered within numerous universities (e.g. in Australia and the United Kingdom) to students enrolled in high-stakes units or units regarded as being particularly demanding which have relatively low(er) success rates compared to other units within students' programs of study. PASS also focuses upon general academic skills and challenging content within the unit (Van der Meer & Scott, 2009). Participation in supplementary instruction sessions such as PASS appears to be correlated with higher average unit grades, lower failure rates, and higher retention rates (Dawson et al, 2014). In terms of self-regulated learning, PASS is an example where peer-learning and help-seeking intersect. Spedding et al. (2017) found that self-efficacy mediated a positive relationship between attendance of PASS and academic

performance. A student's decision to attend PASS may be driven, in part, by a belief that they can achieve a desired outcome in the unit in question if they attend.

Why College Connect was introduced

PASS focuses upon one unit at a time, and is led by past students who have previously completed the unit on offer. At the authors' institution, an alternative supplementary instruction approach was implemented to foster a learning community among first-year university pathway students from various disciplines. College Connect workshops are based upon similar principles to PASS in that (a) they encourage first-year students to develop academic skills, which can then be applied throughout their studies; and (b) they are another example of supplementary instruction directly connected to the content of the units the students are enrolled in. While College Connect workshops are similar to PASS in that students have the opportunity to address content-driven problems in a group setting, they differ from PASS because: (a) they are led by a designated academic staff facilitator instead of a student; and (b) discussions and activities are not restricted to a single unit – they straddle multiple units and disciplines. College Connect was implemented instead of PASS to give students enrolled in pathway programs the opportunity to share knowledge, address concerns or questions, and learn about skills applicable across several units simultaneously in a collaborative setting.

Another reason for introducing the workshops is that they offer students the opportunity to enhance self-efficacy by participating in activities which promote demonstrative practice of academic skills. These skills, if mastered and applied effectively, should improve academic success within and across students' units of study. Improved academic success would be reflected by (i) higher unit scores in the foundation core unit within which workshops are timetabled; and (ii) higher grades across multiple units contributing towards higher grade point average (GPA) outcomes.

This research study aimed to (i) investigate if there is a relationship between academic performance (i.e. final grade in core unit) and College Connect workshop attendance; (ii) identify if there is a relationship between GPA and College Connect workshop attendance; (iii) determine if there is a difference in academic performance across different College Connect workshop attendance patterns; and (iv) determine if there is a difference in GPA across different College Connect workshop attendance patterns.

Method

Context

This quantitative study is situated within a regional, public Australian university. College Connect workshops are scheduled weekly, with a total of 10 workshops during a 12-week study session. Examples of College Connect workshop activities include (a) completion of progress checklists and planners for time management; (b) identifying, matching, and applying assessment task verb definitions to correctly address task descriptions and requirements; and (c) identification and application of stress management strategies.

Participants

Student success and attendance of College Connect workshops of 1773 students were examined from 2015 to 2019, consisting of 15 study sessions (Table 1). All students were enrolled in the foundation core unit of the university's pathway programs, within which the workshops were timetabled. Ethics approval was obtained from the University's Human Research Ethics Committee (approval number ECN-16-040).

Table 1.
Number of students attending workshops by study session (2015-2019)

	2015			**2016**			**2017**			**2018**			**2019**		
Session	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***
Attended ≥ 1	63	25	8	74	88	33	172	54	116	128	94	70	147	52	38
Did not attend any	8	10	2	8	56	1	83	92	33	27	39	31	121	52	48
TOTAL	71	35	10	82	144	34	255	146	149	155	133	101	268	104	86

Data analysis

Attendance records were collated across 15 sessions (Session 1, 2015 to Session 3, 2019 inclusive). Final grades (in percentage format) in the core unit were acquired from the Blackboard Learn™ learning management system as an indicator of academic success. GPA results, as an expression of student performance across all units within a session (i.e. the core unit + up to three other units), were acquired from the university's Office of Business Intelligence and Quality. Level of significance was set at $p \leq 0.05$ for all analyses.

Pearson correlations were undertaken to assess the statistical relationship between academic success and workshop attendance; and GPA and workshop attendance. Analyses were conducted based on the following groups: (1) All students across all study sessions regardless of attendance level; (2) all students with non-attendees removed; (3) students who attended < 50% of workshops overall; and (4) students who attended ≥ 50% of workshops. Analyses were not conducted in instances where $n \leq 10$. Given ten workshops are offered in a session, it was felt that those attending less than five workshops may be a useful indicator of threshold level to determine the number of workshops attended to improve academic performance.

Student attendance and academic performance were analysed using independent sample t-tests to determine if there was a statistical difference between (1) workshop attendance and academic success; and (2) workshop attendance and GPA. Effect size (eta-squared: η^2) was classified according to Cohen's conventions as small ($0.01 < \eta^2 < 0.06$), medium ($0.06 < \eta^2 < 0.14$), or large ($< \eta^2 > 0.14$). Levene's test was used to assess the homogeneity assumption required by independent sample t-tests.

Kruskal-Wallis H tests with Bonferroni corrections were undertaken to assess for differences in academic success, and differences in GPA between the following groups: (1) Students who did not attend any workshops; (2) students who attended < 50% of workshops; and (3) students who attended ≥ 50% of workshops. Post-hoc

pairwise comparisons between groups were only made when the Kruskal-Wallis test returned a significant result.

Results

Relationships between academic success and workshop attendance, and GPA and workshop attendance

Pearson correlation indicated, for pooled data across all sessions, there were statistically significant relationships between workshop attendance and (i) unit score; and (ii) GPA when all students (attending and non-attending) were included. Statistically significant relationships were also found when non-attending students were excluded, as seen in Table 2 and Table 3 below. For students attending < 50% of workshops, a statistically significant relationship was found for unit score, but not for GPA. Statistically significant relationships were evident for students who attended ≥ 50% of workshops for both score and GPA. Overall, statistically significant relationships were found between workshop attendance and unit score and GPA results

When study sessions were considered separately, statistically significant relationships were found between workshop attendance and unit score and GPA results for 13 sessions (see Tables 2 and 3). Statistically significant relationships remained for 12 sessions when students who did not attend any workshops were removed. Statistically significant relationships were also found for students attending ≥ 50% of workshops for nine sessions in terms of score and seven sessions in terms of GPA.

Table 2.

Pearson correlation between students' workshop attendance and unit score

Year	2015			2016			2017			2018			2019		
Session	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***
All students															
n	71	35	10	82	144	34	255	146	149	155	133	101	268	104	86
p	< 0.01	< 0.01	0.12	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.74	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.08
r	0.65	0.57	0.53	0.25	0.30	0.63	0.48	0.34	0.03	0.30	0.30	0.49	0.42	0.25	0.19
Students attending any workshops															
n	63	25	8	74	88	33	172	54	116	128	94	70	147	52	38
p	< 0.01	< 0.01	0.15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.52	< 0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01
r	0.59	0.64	0.56	0.31	0.29	0.75	0.40	0.49	0.06	0.28	0.41	0.47	0.36	0.26	0.44
Students attending > 50% of workshops															
n	28	11	3	44	50	19	87	33	69	72	61	40	60	30	29
p	0.04	0.71	-	<0.01	< 0.01	< 0.01	0.02	< 0.01	<0.87	0.14	<0.01	0.02	0.16	0.17	< 0.01
r	0.29	0.10	-	0.38	0.55	0.61	0.32	0.56	0.07	0.17	0.36	0.21	0.14	0.21	0.60

Note: *(n = number of students. p = significance. r = correlation coefficient).*

Table 3.

Pearson correlation between students' workshop attendance and GPA

Year	2015		2016		2017		2018		2019	

Session	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*
All students															
n	71	35	10	82	144	34	255	146	149	155	133	101	268	104	86
p	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.98	< 0.01	< 0.01	< 0.01	< 0.01	0.04	0.02
r	0.58	0.51	0.60	0.38	0.35	0.75	0.45	0.36	0.00	0.28	0.36	0.43	0.44	0.20	0.26
Students attending any workshops															
n	63	25	8	74	88	33	172	54	116	128	94	70	147	52	38
p	< 0.01	< 0.01	0.15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.85	< 0.01	< 0.01	< 0.01	< 0.01	0.28	< 0.01
r	0.47	0.70	0.56	0.39	0.29	0.80	0.37	0.42	0.02	0.28	0.48	0.45	0.36	0.15	0.49
Students attending > 50% of workshops															
n	28	11	3	44	50	19	87	33	69	72	61	40	60	30	29
p	0.14	0.77	-	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.58	0.15	< 0.01	0.19	0.30	0.26	< 0.01
r	0.29	0.10	-	0.38	0.55	0.61	0.32	0.56	0.07	0.17	0.36	0.21	0.14	0.21	0.60

Note: *n = number of students; p = significance; r = correlation coefficient*

Differences in academic success and GPA across different College Connect workshop attendance patterns

Independent-sample t-tests for pooled data across all sessions indicated a statistically significant difference in academic success (in terms of unit score and GPA) between students who attended workshops and those who did not. T-tests were then undertaken for 13 sessions (no tests for Session 3 2015 and Session 3 2016 due to (i) low sample size and (ii) all except one student attending workshops, respectively). Students attending workshops achieved statistically significantly higher unit scores during six sessions (Table 4) and statistically significantly higher GPAs during seven sessions (Table 5).

Table 4.
Independent-sample t-test results comparing unit scores for students attending workshops and students who did not attend workshops.

Year	**2015**		**2016**		**2017**			**2018**			**2019**		
Session	***1***	***2***	***1***	***2***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***
n_W	63	25	74	88	172	54	116	128	127	70	147	52	38
n_{NW}	8	10	8	56	83	92	33	27	39	31	121	52	48
M_{SW}	48.36	47.66	49.22	46.24	51.13	56.09	50.69	51.78	51.99	49.90	56.39	51.91	58.14
± SD	24.82	22.82	24.78	22.63	22.07	17.61	18.01	18.91	19.13	22.03	23.02	22.13	20.23
M_{SNW}	20.25	33.20	48.50	35.36	32.52	46.77	46.30	43.50	46.57	31.16	38.60	42.34	55.52
± SD	13.73	25.82	32.23	25.56	21.58	20.63	24.30	23.97	22.89	27.04	24.61	27.08	22.19
df	13.75 *	33	80	142	253	125.41 *	42.5	33.16	164	48.41 *	248.30 *	98.11 *	84
t	-4.87	-1.63	-0.08	-2.68	-6.35	-2.90	-0.97	-1.69	-1.48	-3.39	-6.06	-1.98	-0.566
p	< 0.01	0.11	0.94	< 0.01	< 0.01	< 0.01	0.34	0.10	0.14	< 0.01	< 0.01	0.05	0.57
η^2	0.63	0.07	< 0.01	0.05	0.14	0.06	0.02	0.08	0.01	0.19	0.13	0.04	< 0.01

Note: *W = students who attended workshops; NW = students who did not attend workshops; SW = unit score for those who attended workshop(s); SNW = unit score for those who did not attend workshop(s). M = Mean. * Denotes heterogeneous variances.*

Table 5.
Independent-sample t-test results comparing GPAs for students attending workshops and students who did not attend workshops.

Year	2015		2016		2017			2018			2019		
Session	*1*	*2*	*1*	*2*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*
n_W	63	25	74	88	172	54	116	128	127	70	147	52	38
n_{NW}	8	10	8	56	83	92	33	27	39	31	121	52	48
M_{GW}	3.23	2.60	3.33	3.22	3.55	3.94	3.16	3.05	3.46	2.79	3.62	3.11	4.02
± SD	2.15	1.94	2.07	1.84	1.76	1.59	1.74	1.88	1.83	2.05	2.00	2.17	1.95
M_{GNW}	0.38	2.30	2.63	2.08	2.06	2.93	3.08	2.42	2.67	1.65	2.04	2.32	3.59
± SD	0.74	1.79	2.15	2.01	1.82	1.77	2.09	1.97	2.03	2.25	1.93	2.26	1.93
df	26.40 *	33	80	142	253	144	45.49 *	153	164	99	266	102	84
t	-7.56	-0.42	-0.92	-3.49	-6.24	-3.43	-0.21	-1.56	-2.31	-2.49	-6.53	-1.81	-1.011
p	< 0.01	0.68	0.36	< 0.01	< 0.01	< 0.01	0.84	0.12	0.02	0.01	< 0.01	0.07	0.31
η^2	0.68	0.01	0.01	0.08	0.13	0.08	< 0.01	0.02	0.03	0.06	0.14	0.03	0.01

Note: *W = students who attended workshops; NW = students who did not attend workshops; GW = GPA for those who attended workshop(s); GNW = GPA for those who did not attend workshop(s). M = Mean. * Denotes heterogeneous variances.*

When data were pooled across all sessions, Kruskal-Wallis tests identified a statistically significant difference in unit score ($\chi^2_{(2)}$ = 164.033, p < 0.01) for the following student groups: (1) Those who did not attend any workshops (*n* = 611); (2) those who attended < 50% of workshops (*n* = 527); and (3) those who attended ≥ 50% of workshops (*n* = 635). A statistically significant difference was also evident for GPA ($\chi^2_{(2)}$ = 176.034, p < 0.01). Post-hoc pairwise comparisons between groups were statistically significant for (i) those who did not attend any workshops vs those who attended ≥ 50% and (ii) those who attended < 50% vs those who attended ≥ 50% of workshops.

Furthermore, Kruskal-Wallis tests conducted for 14 sessions found statistically significant differences in unit score (Table 6; see Appendix) and GPA (Table 7; see Appendix) for 10 study sessions for all three attendance groups (no test conducted for Session 3 2015 due to small sample size). Post-hoc pairwise comparisons between groups were statistically significant on 18 of 30 occasions for unit score (Table 6; see Appendix) and on 20 of 30 occasions for GPA (Table 7; see Appendix). Overall, students attending ≥ 50% of workshops tended to achieve higher scores and GPA results than those in the other two groups.

Discussion

College Connect workshops provide additional support to students enrolled in Diploma and Associate Degree pathway programs in a regional Australian university, particularly in developing time management skills, understanding assessment task requirements, and identifying strategies to cope with stress. Effective time management is an acknowledged concern among first-year students, particularly the need to keep up with study requirements and associated time demands (van der Meer et al., 2010). Checklists and weekly planners provided in the first College Connect workshop of a study session allow students to (i) check to see if they have completed key tasks during their first two weeks of study; and (ii) map their intended study activities and assessment due dates across several units, as well as factoring in outside commitments (e.g. paid work) for subsequent weeks of the study session. Students are encouraged to build flexibility (in the form of deliberate spaces of free time) into these planners to account for unexpected events.

Misunderstanding and/or misinterpretation of assessment task verbs (e.g. analyse, contrast, discuss, evaluate) can lead to students submitting responses that differ from lecturers' expectations and/or do not actually answer the question(s) posed. By identifying task verbs within task descriptions and matching them with definitions in workshop time, students improve their understanding of task requirements, thus bridging the gap between their understanding of what they are being asked to do and what lecturers are expecting (Williams, 2005). As a result, students complete the assigned task correctly, which may result in a higher grade.

The first year 'transition' to university study can be a stressful and anxious time for many students (Nieuwoudt, 2021). Many students have to cope with an array of shifting circumstances, such as increased academic demands and associated workload, changing living and working arrangements, and adjusting to new social settings (Ramler et al., 2016). Stress can have a profound impact upon students' well-being and academic performance. Therefore, it is important for students to take steps to manage stress as early as possible during the transition process. Within workshop time, students are given the opportunity to (i) express their stress levels on a scale of 1 to 10; (ii) discuss methods to minimise anxiety; (iii) self-diagnose signs and symptoms of study-related stress; and (iv) consider a graph of academic performance versus anxiety level and their likely position on that graph. Thereafter, students are introduced to recognised stress management strategies through online resources and given the opportunity to participate in a mindfulness breathing exercise. Awareness and application of stress management strategies may reduce the risk of students prematurely dropping out of units or failing units (Sharp & Theiler, 2018).

Results of this study indicate there is a difference in academic success between students who attended College Connect workshops and students who did not. Students attending workshops – particularly those attending more than 50% - were more likely to achieve higher unit scores and GPA results (see Tables 2 and 3). Specifically, a difference in unit score and GPA was noticed for (i) students who attended workshops vs those who did not (see Tables 4 and 5) and (ii) students who attended more than 50% of workshops, with higher scores and GPA's achieved than students who attended less than 50% of the workshops (see Tables 6 and 7). These results support the findings of Dancer et al.'s (2015) study that reported significant differences in unit scores between students attending PASS classes and those who did not, with those attending receiving higher scores.

The College Connect workshops are designed to promote and enhance students' self-regulated learning and increase academic self-efficacy. Self-regulation and self-efficacy are both strong predictors of academic success (Richardson et al., 2012), and may contribute to the increased academic success experienced by students who attended the College Connect workshops regularly. During the workshops, students apply self-regulated learning strategies (e.g. time management and reflecting upon progress in assessment tasks); there are opportunities for peer learning (from fellow attendees); help-seeking (from fellow attendees and/or the class facilitator); and the opportunity to apply critical thinking (consideration of materials presented).
Relationships between workshop attendance and academic success were not always significant for all attendance groups and/or study sessions examined in this study (see Tables 2 – 7 inclusive). Lack of a significant relationship between academic success and those attending workshops occasionally (< 50%) was not unexpected. The reasons for students choosing not to attend workshops are unknown. It is possible that

students were unable to spend additional time on campus due to other conflicting commitments (Tinto, 2008). University students have many conflicting demands on their time in addition to study such as family responsibilities and work commitments (Leahy et al., 2010). Paid work can have a negative impact on engagement and learning (Trotter & Roberts, 2006). Indeed, more than half of Australian university students believe paid work interferes with their academic performance (Baik et al., 2015). This finding may be due to the time trade-off between studying and working (Lahmers & Zulauf, 2000), as students who work more hours may have a reduced amount of time available to study and attend classes (Nieuwoudt & Stimpson, 2021). Similarly, family responsibilities may mean that some students are unable to attend the College Connect workshops as they need to make constrained choices between attending class and taking care of their family. A high proportion of students from this regional Australian university are considered to be 'non-traditional' students, as they are highly diverse and from multiple equity groups. In contrast to traditional university students with few responsibilities outside of their studies, non-traditional students have considerable demands on their time (Richardson et al., 2019) due to several conflicting responsibilities and commitments.

The reasons for not attending, or attending, the College Connect workshops are likely to be varied. The literature related to PASS models indicates that students who are academically stronger are more likely to participate in PASS compared to students who are academically weaker (Dancer et al., 2015). Similarly, it is possible that academically stronger students elected to attend these non-compulsory College Connect workshops. The decision to attend these workshops may be driven by students' self-efficacy and the application of self-regulated learning strategies. Students' self-efficacy could have subsequently enhanced development and practice of self-learning regulation strategies promoted in the workshops, which could have then contributed towards increased academic success and higher GPAs. Several other studies have found significant positive correlations and/or relationships between academic success and self-regulation strategies, and between academic success and self-efficacy. Carson (2011) and Puzziferro (2008) found significant positive correlations between academic success and time management, metacognition, and effort regulation. Puzziferro (2008) also found significant positive correlations between academic success and critical thinking, peer learning, and help-seeking behaviours. Researchers found a positive correlation between GPA and time management (Razali et al., 2017) and self-regulation measures (Zimmerman & Kitsantas, 2004). Komarraju and Nadler (2013) found a significant positive relationship between self-efficacy and GPA, partially mediated by self-regulation, with help-seeking contributing incremental variance in GPA. Indeed, a comprehensive meta-analysis of over 100 studies found academic self-efficacy to be the strongest predictor of GPA (Robbins et al., 2004).

Successful transition to university requires a positive first year experience. Transition pedagogy emphasises engagement, support, and belonging to ease the transition process (Kift et al., 2010). College Connect workshops provide support for students in the development and practice of self-regulated learning strategies, which – mediated by self-efficacy – could enhance academic success (Spedding et al., 2017). Results obtained in this study suggest that attendance of the College Connect workshops contribute towards enhanced academic success and higher GPAs.

Limitations and future research

It is acknowledged that this study has a number of limitations. This study found significant relationships between College Connect workshop attendance and students' academic success and GPA. However, these relationships may be influenced by other factors (e.g. individual levels of motivation; engagement and self-efficacy; and impact of other commitments such as paid work) that have not been controlled nor tested for in this study. Further research should incorporate questionnaires on self-efficacy, self-regulated learning, and variables that are known to have an impact on class attendance. Therefore, the direct role that College Connect workshops may play in enhancing first-year student success is not known. Future research would benefit from exploring multiple data sources, including student focus groups, to provide further insight into students' reasons for participating in these inter-disciplinary workshops during their first session of university study.

Conclusion

Despite these limitations, the findings of this study, based upon five years of collected data for 1773 students, suggest students' attendance of College Connect workshops (attendance itself being a manifestation of self-regulated learning) could contribute towards enhanced academic success. This study found a significant relationship between workshop attendance and academic success. Students who attended more College Connect workshops tended to achieve greater academic success and higher GPA results in their studies. Findings from this study thus indicate that a multi-disciplinary support program addressing academic skills development to drive academic success across multiple units can be an effective alternative to support strategies that focus only upon one unit at a time. The approach presented in this paper could be beneficial for higher education institutions supporting the transition process for first-year students through provision of combined multi-disciplinary workshops addressing multiple units at once, instead of multiple workshops each focusing upon separate units.

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Appendix

Table 6

Kruskal-Wallis H test results and post-hoc pairwise comparisons of differences in unit score between students who attended (n_1) no workshops; (n_2) < 50% of workshops; and (n_3) ≥ 50% of workshops (MR = mean rank)

Year		2015		2016			2017			2018			2019		
	Session	***1***	***2***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***
	n_1	8	10	8	56	1	83	92	33	27	39	31	121	52	48
	n_2	34	14	30	38	14	85	21	47	56	33	30	87	22	9
	n_3	29	11	44	50	19	87	33	69	72	61	40	60	30	29
	χ^2	17.93	11.47	1.69	8.25	11.33	56.95	15.85	0.75	9.93	12.39	20.66	60.61	4.86	1.12
	p	< 0.01	< 0.01	0.43	0.02	< 0.01	< 0.01	< 0.01	0.69	< 0.01	< 0.01	< 0.01	< 0.01	0.09	0.57
	MR_1	16.38	13	44.19	61.48	30.5	86.39	67.41	70.3	67.96	62.65	36.48	101.88	47.55	41.99
	MR_2	30.99	14.82	37	72.58	10.86	124.12	60.29	78.73	67.16	50.33	44.85	136.72	50.45	39.22
	MR_3	47.29	26.59	44.08	84.78	21.71	171.49	98.88	74.7	90.19	78.8	66.86	197.06	62.58	47.33
	1 vs 2	0.21	1	-	0.62	0.17	< 0.01	1	-	1	0.53	0.79	< 0.01	-	-
SCORE	***2 vs 3***	< 0.01	0.01	-	0.52	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	-	-
	1 vs 3	< 0.01	< 0.01	-	0.01	1	< 0.01	< 0.01	-	0.08	0.12	< 0.01	< 0.01	-	-

Table 7

Kruskal-Wallis H test results and post-hoc pairwise comparisons of differences in GPA between students who attended (n_1) no workshops; (n_2) < 50% of workshops; and (n_3) ≥ 50% of workshops (MR = mean rank)

Year		2015		2016			2017			2018			2019		
	Session	***1***	***2***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***	***1***	***2***	***3***
	n_1	8	10	8	56	1	83	92	33	27	39	31	121	52	48
	n_2	34	14	30	38	14	85	21	47	56	33	30	87	22	9
	n_3	29	11	44	50	19	87	33	69	72	61	40	60	30	29
	χ^2	16.13	11.54	5.21	13.4	14.43	48.89	17.2	0.13	10.81	19.62	20.61	61.45	4.22	5.19
	p	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	0.94	< 0.01	< 0.01	< 0.01	< 0.01	0.12	0.08
	MR_1	14.13	16.5	35.25	57.88	15.5	88.24	64.48	77.89	65.06	59.46	40.34	101.94	47.05	40.14
	MR_2	33.10	12.57	35.03	74.74	9.96	126.91	71.50	78.32	68.07	47.70	40.85	136.86	54.02	34.83
	MR_3	45.43	26.27	47.05	87.17	23.16	166.99	99.91	75.62	90.58	82.26	66.88	196.73	60.83	51.76
	1 vs 2	0.06	1	-	0.16	1	< 0.01	1	-	1	0.58	1	< 0.01	-	-
GPA	***2 vs 3***	0.05	< 0.01	-	0.49	< 0.01	< 0.01	0.05	-	0.01	< 0.01	< 0.01	< 0.01	-	-