

Burch, Tyler; Tocher, Neil; Murphy, Greg

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Academic embeddedness and college of business student outcomes

Tyler Burch, Neil Tocher and Greg Murphy

Department of Management, Idaho State University, Pocatello, Idaho, USA

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Abstract

Purpose – This study aims to examine the potentially important effects of academic embeddedness on college of business student retention and performance as well as the mediating effects of self-efficacy on the academic embeddedness student outcomes relationships. Improvements in student retention and performance reduce costs for students and universities and lead to higher incomes for graduates.

Design/methodology/approach – Data were gathered from students in an entry-level business course at a public university in a rural western state. Approximately 45% of the students were female, and the average age of participants was 20 years old. A survey was administered midsemester to gather data on academic embeddedness and self-efficacy. Retention was indicated by a student enrolling in a business course in a subsequent semester. Performance was measured using end-of-semester course grades. Logistic and linear regression as well as mediation analysis were used to test the hypotheses.

Findings – Academic embeddedness was found to positively predict both retention and performance, while self-efficacy was found to positively mediate the academic embeddedness retention relationship. The direct effect of embeddedness on performance was not found when controlling for self-efficacy.

Practical implications – Student retention and performance are important to both students and academic administrators. The findings of this study suggest that retention and performance can both be improved by focusing on factors that more strongly embed students to their colleges.

Originality/value – Embeddedness has been found to have high predictive validity in the employment context. This is one of the first studies to consider the effects of embeddedness in the academic context.

Keywords Performance, Retention, Embeddedness, Student, Self-efficacy

Paper type Research paper

Introduction

Research suggests freshman and sophomore level students make the decision to not continue attending a particular college/university due to such things as inaccurate advising, poor professors, limited course options and bureaucratic roadblocks (O’Keefe, 2013). Additional research has shown that retention is impacted by many additional factors such as student age, parents’ educational background and socioeconomic status (Kamer & Ishitani, 2021), making retention complex and difficult to understand and predict (Burke, 2019). However, while nearly all students deal with challenging hinderances and circumstances, many decide to stay anyway (Gomes da Costa, Pinto, Martins, & Vieira, 2021; Nieuwoudt & Pedler, 2023).



This begs the question of why many students stay and thrive while others leave. A review of the literature revealed that little research has focused on identifying factors that may cause students to stay and thrive in a particular college (Nabi, Liñán, Fayolle, Krueger, & Walmsley, 2017). As such, this study was undertaken to examine the influence of embeddedness on student outcomes. Embeddedness was chosen because it has been demonstrated to predict both retention and performance for organizational members in various organizational contexts (Jiang, Liu, McKay, Lee, & Mitchell, 2012) and has been shown to be a stronger predictor of such outcomes than affect variables such as satisfaction (Lee, Burch, & Mitchell, 2014).

Student performance and retention matter. Business students with higher GPAs earn significantly higher wages after graduation, and avoid costly remediation in the form of extra college coursework. Estimates are that each full point increase in GPA results in an additional 26% in wages (Zou, Zhang, & Zhou, 2022), while remediation costs students an average of \$3,000 (Washington Post, 2016). The effects of retention are likewise very impactful. In 2022, those with bachelor's degrees earned an average of \$1441 a week, while those with some college earned an average of \$961 a month (Education Pays, 2022). Annualized, this is the difference between earning \$74,932 and \$49,972. The benefits of retention to universities are also significant. Approximately 64% of students entering four-year institutions graduate within 6 years (National Center for Education Statistics, 2022). Estimates of the cost to recruit a college student are \$494 per student at four-year public institutions and \$2,795 at private institutions (Pieroni, 2022). For every 1,000 students admitted at a four-year school, on average, 360 are not retained, resulting in additional recruiting costs of \$177,840 for public institutions and \$1,006,200 for private schools. More broadly, retention challenges are a contributing factor to the decline of approximately 5% of undergraduate students attending US universities (Herjanto, Amin, Burke, & Burke, 2022).

The embeddedness concept theorizes that the stickiness of social networks is the key element that causes many individuals to remain in organizational settings (Granovetter, 1985). As such, embedding within an organization and the community in which that organization is located consistently predicts retention and performance in the workplace (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). The embeddedness concept is a highly accurate predictor of retention because it assesses factors that tether employees to an organization (Holtom, Burton, & Crossley, 2012). Importantly, embeddedness has also consistently predicted performance in multiple industries and settings (Halbesleben & Wheeler, 2008). In addition to jobs in a business setting, embeddedness has been applied to settings such as government organizations (Mehmood, Nadarajah, & Akhtar, 2022), labor unions (Cornwell & Harrison, 2004) and religious congregations (Krause & Hayward, 2015), thereby suggesting that embeddedness is relevant to diverse organizational settings. Because the process of becoming embedded within an organization includes building links with others and developing a fit with the organization, the embedding process tends to provide embedded individuals stronger access to critical resources such as mentorship, crucial knowledge and influence which facilitate future performance (Sekiguchi, Burton, & Sablynski, 2008).

Despite its predictive validity across various settings, scant research has examined the influence of embeddedness on student outcomes. Major et al. (2020) focused on the embeddedness of students in STEM fields in predicting their continuance in the field. Shirokova, Tsukanova, and Morris (2018) considered the effects of embeddedness on university students' business start-up behavior. While embeddedness in the college of business (COB) context involves different factors than those in the employment context (e.g. students develop links to faculty and classmates instead of coworkers, Mitchell et al., 2001),

we believe that the sense of fit with, links to and perceptions of sacrifice will influence students in similar ways when compared to employees. Given the nascent but growing evidence that embeddedness may be active in nonwork organizations, such as business schools, and how important business student performance and retention is, not only to the success of the student but also to the success of the business school, the present study examines the research question of how embeddedness affects student retention and performance. It contributes to the literature by applying embeddedness to an academic context, examining the construct's influence on student outcomes and identifying reasons why certain students stay and thrive within academic programs (see [Figure 1](#) for study overview).

Theory and hypotheses

Grounded in sociology, job embeddedness theory (JET) describes how social networks constrain individual actions and thus create a stickiness that binds one to their particular organization ([Uzzi, 1997](#)). Building on the sociological concept of embeddedness ([Granovetter, 1985](#)), JET posits that individuals consider the factors of fit, links and sacrifice with both the organization and the community in which the organization is located when deciding whether to stay with that specific organization ([Holtom et al., 2012](#)). In this sense, individuals often stay with an organization even when other potentially attractive opportunities exist because they feel they fit well in the organization/community, have many links that bind them to the organization/community and would have to make many sacrifices if they were to leave the organization/community ([Felps et al., 2009](#)). Prior to JET, seminal research examining individual retention and performance within organizations was conducted primarily from an emotional perspective, theorizing that dissatisfied individuals tend to leave while satisfied individuals likely motivated by money and recognition stay and perform at higher levels ([Hulin, Roznowski, & Hachiya, 1985](#); [Mobley, 1977](#); [Petty, McGee, & Cavender, 1984](#); [Spencer, 1986](#)). JET challenged that notion by asserting that individuals' retention decisions have a cognitive judgement component in addition to the emotional component ([Mitchell et al., 2001](#)).

Embeddedness provides individuals with valuable resources such as mentorship, access to critical information and credit within social ties ([Lee, Mitchell, Sablinski, Burton, & Holtom, 2004](#)). Such increased access to resources possessed by embedded individuals enhances their chances to gather job-related knowledge and thus achieve higher performance levels than less embedded individuals ([Allen, 2006](#)). Specifically, embedded

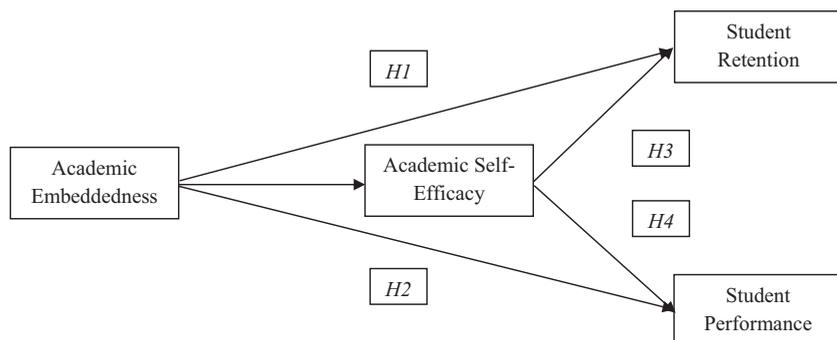


Figure 1. Model of the proposed relationships between embeddedness, retention, performance and self-efficacy

Source: Figure by authors

employees have been found to consistently outperform less embedded employees on job tasks (Sekiguchi et al., 2008), organizational citizenship behaviors (Burton, Holtom, Sablinski, et al., 2010) and innovativeness (Lev & Koslowsky, 2012).

While academic research has sought to identify factors that enhance student engagement and performance (Ahshan, 2021; Hwang, Kessler, & Francesco, 2004), such research has focused little attention on embeddedness (Wheeler, Harris, & Sablinski, 2012). As such, we adapt the original construct to create the academic embeddedness concept, leading to the following six key dimensions:

- (1) college links – the strength of a student’s ties to other individuals in the COB;
- (2) community links – strength of the student’s ties to individuals who reside in the community where the COB is located;
- (3) college fit – the strength of the match between the student’s personal goals/values and those of the COB;
- (4) community fit – the strength of the match between the student’s goals/values and those of the community in which the COB is located;
- (5) college sacrifice – the strength of the student’s perceived loss that would occur as a result of leaving the COB; and
- (6) community sacrifice –the strength of the student’s perceived loss that would result from leaving the community in which the COB is located.

Academic embeddedness and retention

Several lines of research suggest that embeddedness will positively influence student retention. For example, management research finds a consistent link between job embeddedness and employee retention in several different industries and settings (Lee et al., 2014). Such research also finds that embeddedness leads to various outcomes which increase retention (Jiang et al., 2012). Specifically, employees who are highly embedded in the organization in which they work are more innovative (e.g. Ng & Feldman, 2010) are more engaged in their work (e.g. Rahimnia, Eslami, & Nosrati, 2019), perform more organizational citizenship behaviors (Sekiguchi et al., 2008), have higher job satisfaction (e.g. Karatepe & Vatankhah, 2014), are less likely to leave the organization for other comparable opportunities than those who are less embedded in the firm (Allen, 2006; Peltokopri & Allen, 2023) and are less likely to be fired (Burrows, Porter, & Amber, 2022). Next, community embeddedness has also consistently been shown to reduce turnover intentions and job search behavior (Lee et al., 2014), while it has also been shown to enhance organizational engagement and employee tenure (Wheeler et al., 2012). By extension, it is reasonable to assert that being highly embedded in a college and the community in which the college is located would enhance a student’s likelihood to continue attending that college. Supporting the above statement, higher education research finds that students who have a strong connection to their college and overall university are more satisfied with their education, are more engaged in their program of study and are less likely to leave (Mainardes, Raposo, & Alves, 2014). Aljohani (2016) provided a review of major theories and studies of student retention and noted that some form of social and academic integration is present in many of the models. Tinto (1993), for example, considered both academic and social integration to have an impact on the dropout decision. Given the above, we posit that being embedded within a COB and its surrounding community will enhance student retention and advance the following:

H1. Academic embeddedness will positively influence student retention in the COB.

Academic embeddedness and student performance

Research suggests that being highly embedded within a COB will likely enhance student performance. For example, higher education research finds a positive link between actions which help students build links within a college and student academic performance (Hwang et al., 2004). Specifically, students involved in clubs, mentorship programs and academic centers linked to their majors have higher grades, are more committed and graduate faster (Nabi et al., 2017). Similarly, education approaches that facilitate students' fit to both the COB and the community surrounding the COB (e.g. student consulting projects with local businesses, internships and fellowships) have also been found to be positively associated with academic performance (Lyons & Zhang, 2018).

Importantly, management research also supports the COB embeddedness student performance link. For example, entrepreneurship research finds that business owners who are more embedded within networks of other business persons, chambers of commerce and stakeholder groups operate firms which experience higher performance levels than firms owned by less networked entrepreneurs (Krieser, Patel, & Fiet, 2013). Furthermore, retention research finds a consistent link between embeddedness and employee performance, as highly embedded individuals are promoted faster, receive higher evaluations from their supervisors, are perceived to be better leaders and are better sales persons than less embedded individuals (Felps et al., 2009). In the broader literature, research by Baker and Siryk (1999) using the Student Adaptation to College Questionnaire found connections between academic and social integration and academic performance. Finally, factors linked to embeddedness such as organizational engagement, firm advocacy and organizational citizenship behavior have also been found to be positively associated with employee performance (Holtom et al., 2012). As such, we expect that embeddedness within an academic context will enhance student performance and thus advance the following:

H2. Academic embeddedness will positively influence student performance in the COB.

Academic embeddedness and self-efficacy

Research suggests that self-efficacy may be an explanatory mechanism that translates embeddedness effects to student retention and performance. Self-efficacy (belief in one's ability to perform a task – Bandura & Wood, 1989) is grounded in social cognitive theory, which asserts that behaviors such as retention and performance are a function of an individual's skills/abilities and the individual's social environment (Bandura, 1997). Seminal research findings that self-efficacy is higher for individuals given consistently positive feedback suggests that social support is often the key factor that enhances self-efficacy (Bouffard-Bouchard, 1990). As such, the resources possessed by embedded students such as friendship, mentorship, critical knowledge and credit within social ties likely provide such students with the social support needed to boost their self-efficacy, enhancing their chances to succeed academically and remain in the college (Vardaman, Rogers, & Marler, 2020). These personal and situational resources will positively influence student self-efficacy by allowing them to gather advice, have network contacts to encourage them and reside in an environment where they feel more comfortable, while the absence or loss of such resources will reduce student self-efficacy by limiting opportunities to develop confidence in their abilities (Hobfoll, 2001). Because embeddedness provides individuals the supportive connections with others needed to deal with stressful situations and complex problems, we

posit that embedded students will possess higher academic self-efficacy than less embedded students (Parish, Cadwallader, & Busch, 2008).

The enhanced self-efficacy that embeddedness provides should in turn enhance student retention and performance (Vardaman et al., 2020). Supporting this notion, self-efficacy consistently predicts persistence, as studies have shown that when self-efficacy is high, individuals will persist against obstacles, and when self-efficacy is low, individuals will withdraw (Ellett, 2009). Furthermore, research finds that academic self-efficacy predicts both student intentions to remain at a university and academic performance (Chemers, Hu, & Garcia, 2001; Gomes da Costa et al., 2021). Given the above, it seems that academic self-efficacy will positively mediate the effect of embeddedness on student outcomes and thus the following are advanced:

- H3. Academic self-efficacy will positively mediate the academic embeddedness-student retention relationship.
- H4. Academic self-efficacy will positively mediate the academic embeddedness-student performance relationship.

Methods

Sample overview

We tested our hypotheses with survey data gathered in an entry-level COB course at a public university located in a rural western state. Of the 104 surveys received, 85 were viable for analysis. The survey was administered in the middle of the semester and was sent out as a link that students could take anytime during a two-week window. The entry level nature of the course was ideal because it was a core business course. As such, students taking the course had made an initial decision to pursue a business degree but were also at an early enough stage where students often change colleges or choose to forgo university studies altogether. The sample was approximately 45% female, and participants averaged 20 years old. We assessed performance via student grades and assessed retention by determining whether or not students remained COB students in future semesters.

Measures

Academic embeddedness. Academic embeddedness assesses the links or ties the individual student has to both the COB and the surrounding community, the level of fit the student feels within the COB and the surrounding community and the sense of sacrifice the student would feel if he/she left either the COB or the surrounding community. To develop the instrument, we carefully reviewed measures of job embeddedness and reviewed embeddedness instruments used in other contexts such as family embeddedness (see Lee et al., 2014, for a review of studies on embeddedness). We then created a set of items that we believed closely matched well-validated measures of job embeddedness but used the COB environment as the focal context. Next, we sought and received feedback on these items from professors who have published heavily in job embeddedness about the extent to which they believed the items were appropriate and consistent with theory for investigating embeddedness in an academic context. Based on this feedback, we finalized the 29-item measure to assess links, fit and sacrifice for both the COB and the community.

Academic self-efficacy. Consistent with Bandura's (1997) conceptualization of self-efficacy and Chemers and colleagues' (2001) measure of academic self-efficacy, our measure had respondents assess their efficacy with regards to general academic skill rather than specific academic subject matter. Participants responded indicating their level of agreement to an

eight-item measure with responses ranging from 1 strongly disagree to 7 strongly agree. Sample items include “I am confident I have the ability to do well in the COB” and “I believe I have the ability to pass my classes.” Cronbach’s alpha was 0.83.

Student retention. Student retention was measured by assessing whether or not students remained COB students in future semesters. As such, to be considered retained the student had to remain registered and taking classes as a COB student during the four-year window after the semester the student took the survey. Approximately 63% of our sample was retained by the COB.

Student performance. Student performance was measured by course grades retrieved from the student’s official transcript at the end of the semester. Grades were translated from letter format to numeric format prior to analysis (i.e. A became 4.0, A– became 3.7, B+ became 3.3 and so on). The average grade was a 3.04.

Controls. We controlled for the highest level of education obtained by parents (1 less than high school to 7 Doctorate or PhD), gender, age and ethnicity. No statistically significant relationship between ethnic categories and the focal variables in this study was found.

Results

Correlation coefficients and descriptive statistics can be found in Table 1. We ran logistic regression to examine the dichotomous variable of student retention and ran linear regression to examine student performance. These regression analyses can be found in Table 2. The overall effect of the model on student retention as measured by the *-2 Log Likelihood* statistic was significant ($p < 0.01$). The overall effect of the model on student performance as measured by the *F*-statistic was also significant ($p < 0.01$). To test for direct and indirect effects, the PROCESS macro in SPSS was used, as it allows for the estimation of these effects through bootstrapping procedures that are robust against any normality distribution violations (Hayes & Preacher, 2013). The estimates of these direct and indirect effects are found in Table 3.

H1, which predicted that academic embeddedness would have a positive influence on student retention, was supported (*direct effect* = 0.96, $p < 0.05$). *H2*, which predicted that academic embeddedness would positively influence student performance, was supported as academic embeddedness is positively correlated with student performance ($r = 0.23$; $p < 0.05$). However, there is not a statistically significant direct effect when controlling for academic self-efficacy, suggesting that the influence of embeddedness on performance

	Mean	SD	1	2	3	4	5	6	7
1. Student retention in the college	0.63	0.49							
2. Student performance	3.04	1.10	0.31						
3. Academic embeddedness	4.59	0.95	0.29	0.23					
4. Academic self-efficacy	5.86	0.74	0.08	0.20	0.41				
5. Mother’s highest level of education	3.45	1.59	-0.04	-0.07	-0.11	-0.05			
6. Father’s highest level of education	3.72	1.76	-0.03	0.08	-0.02	0.11	0.49		
7. Gender	1.44	0.50	-0.17	-0.01	0.21	0.16	-0.04	-0.03	
8. Age	20.76	6.29	0.06	-0.06	0.24	0.08	-0.12	-0.09	0.07

Table 1.
Descriptive statistics
and correlations
between variables

Notes: Correlations with absolute values equal to or exceeding 0.19 are significant at $p < 0.05$. Correlations with absolute values equal to or exceeding 0.30 are significant at $p < 0.01$; $N = 85$; Gender was measured 1 = Male, 2 = Female. Student retention was measured 1 = retained; 0 = not retained
Source: Table by authors

operates almost completely through self-efficacy. *H3*, which predicted that self-efficacy would positively mediate the academic embeddedness student retention relationship, was not supported (*indirect effect* = 0.05; $p > 0.10$). *H4*, which predicted that student self-efficacy would positively mediate the academic embeddedness student performance relationship, was supported (*indirect effect* = 0.12; $p < 0.05$).

Discussion

Previous research on retention and academic performance of business students has found positive effects for deep learning (DeLotell, Millam, & Reinhardt, 2010), the use of freshman experience courses (Black, Terry, & Buhler, 2016), applying concepts of relationship marketing and service quality (Ackerman & Schibrowsky, 2007; Swani, Wamwara, Godrich, Schiller, & Dinsmore, 2022), the use of early warning tools (Trussel & Burke-Smalley, 2018), as well as academic skill development, community building and realistic expectation setting (Cox, Schmitt, Bobrowski, & Graham, 2005). Notably, there have been increased calls for business schools to focus more on student engagement (Lunt, Chonko, & Burke-Smalley, 2018; Wang & Calvano, 2022). This study extends research on student

	Retention		Performance	
	<i>B</i>	SE	<i>B</i>	SE
Constant	-2.33	2.18	1.00	0.93
Academic embeddedness	0.96*	0.34	0.12	0.13
Academic self-efficacy	0.16	0.37	0.34*	0.16
Mother's highest level of education	-0.11	0.18	-0.12	0.08
Father's highest level of education	0.06	0.19	0.18*	0.07
Gender	-1.42 [†]	0.54	-0.17	0.22
Age	-0.01	0.04	-0.02	0.02
-2 Log Likelihood		96.75**	<i>F</i>	3.05**
Nagelkerke <i>R</i> ²		0.24	<i>R</i> ²	0.19

Table 2. Logistic regression predicting student retention and linear regression predicting performance in the college of business

Notes: [†]Significant at 0.10; *significant at 0.05; **Significant at 0.01. Gender was measured 1 = Male, 2 = Female. Student retention was measured 1 = retained; 0 = not retained

Source: Table by authors

Dependent variable	Direct effects				Indirect effects			
	Bootstrapped estimate	SE	95% CI (LL, UL)	90% CI (LL, UL)	Bootstrapped estimate	SE	95% CI (LL, UL)	90% CI (LL, UL)
Student retention	0.96	0.34	0.30, 1.63	0.41, 1.52	0.05	0.16	-0.25, 0.38	-0.20, 0.34
Student performance	0.12	0.13	-0.14, 0.38	-0.10, 0.34	0.12	0.06	0.01, 0.24	0.02, 0.21
Student retention	0.68	0.19	0.31, 1.05	0.37, 0.99	0.18	0.10	-0.01, 0.39	0.02, 0.35
Student performance	0.12	0.13	-0.14, 0.38	-0.10, 0.34	0.12	0.06	0.01, 0.24	0.02, 0.21

Table 3. Direct and indirect effects of academic embeddedness on student retention and performance via academic self-efficacy

Notes: *N* = 85; Bootstrap sample size = 10,000; Student retention was measured 1 = retained; 0 = not retained

Source: Table by authors

retention and academic performance in business schools by considering the effects of academic embeddedness.

Our study finds that embeddedness positively influences COB student retention and performance, indicating that embeddedness is a variable that may account for why certain students stay and thrive within academic programs. Such results suggest that COB administrators should tailor their recruiting efforts to focus more on prospective students who may be more likely to embed to that specific COB and should also work to actively facilitate the embedding process once the students are enrolled. Factors that bind students to their colleges likely vary as campus life and athletic teams may bind certain students while faculty relationships, experiential learning opportunities and daycare availability may embed other student subpopulations. Therefore, colleges/universities may be far better off by figuring out what binds their student base to the college/university and emphasizing those factors.

Our results also imply that faculty are a critical link that will embed students. Because the primary activity in any college is taking courses and faculty are generally critically important to successful courses, faculty should work to embed students by being approachable, developing relationships with students, interacting with students outside of class and taking an interest in students' lives. Similarly, faculty must work to ensure that online courses, be they synchronous or asynchronous, engage students, promote student interaction and spur additional interaction with the college.

Finally, study findings that self-efficacy likely explains most of the embeddedness student performance relationship suggest that any efforts to embed students within a college may have little effect if such efforts do not help the students believe they can succeed within the college. As such, COBs need to build academic self-efficacy by investing in transition programs, interactive orientation efforts, tutoring services, mentorship experiences, etc. Similarly, faculty should consider scaffolded in-class activities which help to boost student efficacy.

Limitations and future research

A key limitation of our study is that it was conducted with primarily lower division students, hindering the ability to generalize its findings to upper division or graduate students. As such, confirmatory studies should be undertaken to validate our findings. Similarly, future studies should examine which embedding factors are more important to certain categories of students, as links to fellow students, professors and support staff may be more of a binding factor to new college students, whereas community fit may be more important to nontraditional students. Our study was also limited because it did not examine if administrative actions to effectively sell academic programs to targeted students effected the influence of embeddedness on student retention/performance. Future research should thus be conducted to examine if the modification of college programs to emphasize binding factors unique to their students enhances the embeddedness student outcome relationship. Finally, our study was limited by the fact that it was conducted before the COVID-19 pandemic. Thus, postpandemic replication studies are needed. Despite these limitations, we feel that the study's novelty, its use of objective metrics of retention/performance and the alignment of its findings with related research findings suggest that it is an important study which should inspire future research.

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Corresponding author

Greg Murphy can be contacted at: murpgreg@isu.edu

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