

Moving Students to Read: Unpacking the Relationship with Reflective and Integrative  
Learning

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### Abstract

College students' reading motivation and reflective and integrative learning play a significant role in influencing students' academic performance and engagement.

Understanding students' reading motivation will help faculty members adjust their course design and provide sufficient support and resources in order to accommodate student learning.

Using data collected in 2013 from 47 four-year colleges and universities located in the U.S., this study explores individual characteristics of students who tend to be intrinsically motivated to read. This study also explores the relationship between intrinsic reading motivation and students' level of engagement in reflective and integrative learning.

Recommendations for enhancing students' reading motivation and reflective and integrative learning are provided.

*Key words:* reading motivation, reflective and integrative learning, college teaching

## Moving Students to Read: Unpacking the Relationship with Reflective and Integrative Learning

College students' reading motivation is closely related to academic engagement and achievement (Zeegers, 2004). It is important for faculty and advisors in learning centers to be aware of and promote students' reading motivation as well as understand ways in which it is related to other forms of desirable learning experiences such as reflective and integrative learning (Lei, Bartlett, Gorney, & Herschbach, 2010). However, to date, very little is known about how reading motivation may vary among diverse groups of students studying at four-year institutions. Focusing on senior students, this study intends to explore the differences in intrinsic reading motivation by students' demographic background and academic major. We also set out to examine the relationship between intrinsic reading motivation and an aspect of deep approaches to learning, reflective and integrative learning. Findings from the study will inform the work of faculty and advisors in engaging students from diverse backgrounds and academic majors in reading assignments that promote a deeper level of curiosity, personal reflection, and integration of knowledge.

This paper begins with presenting the scholarly literature regarding student reading motivation and how it varies by student characteristics. Literature about approaches to learning and reflective and integrative learning will also be reviewed. After presenting the research questions, this paper introduces the methods used in this study including a detailed description of the data source, sample, and measures. The data analyses and the limitations of the study will be presented. Next, we present the study's findings and discuss its significance in the context of four-year institutions in the U.S. Lastly, we offer recommendations for

practice.

### **Literature Review**

Froiland, Oros, Smith, and Hirschert (2012) argued intrinsic motivation in learning has a positive impact on academic outcomes. As a crucial component of learning activities, reading contributes to effective learning outcomes for college students (Lei et al., 2010). Unfortunately, many college students often resist required reading or fail to complete reading assignments (Burchfield & Sappington, 2000; Hoeft, 2012; Sappington, Kinsey, & Munsayac, 2002). Connor-Greene (2000) reported many college students rarely touch their reading assignments by the due date. If students fail to comply with reading assignments, their class participation is often negatively affected (Lei et al., 2010). Sappington et al. (2002) claimed students' failure to prepare for class undermines their comprehension of course materials and performance in exams.

### **Disciplinary Differences in Reading Motivation**

Students provide a number of reasons for reading apathy, such as lack of self-confidence, low interests in the subject matters, and large amount of readings with limited time (Hoeft, 2012; Lei et al., 2010). Disciplinary context may be an additional reason for students' variation in reading motivation. Howard (2004) looked into the completion of assigned reading of students in an introductory sociology course through surveys, and found only 40% of students reported that they "always or usually" read the textbooks. Additionally, according to Wamback (1999), the goal of reading in the social sciences (e.g., political science, anthropology) is to understand the lecture and become more familiar with the subject matter, whereas in the science disciplines (e.g., physical, biological sciences), students are

expected to obtain and recall specific information after reading. Instructors in humanities (e.g., literature, history), however, expect students to develop critical, analytical, and skeptical thinking skills while reading. Consequentially, the nature of reading in the context of various academic fields may lead to different levels of processing and comprehension.

In a related report from the 2013 National Survey of Student Engagement (NSSE), disciplinary differences with an indirect measure of reading motivation--the amount of time students spent on reading--was found. In a typical seven-day week, “first-year students averaged 14 hours and seniors averaged 15 hours preparing for class (studying, reading, writing, doing homework or lab work, etc.)” (NSSE, 2013, p. 9). Of the hours spent on class preparation, about six to seven hours were devoted to assigned reading. NSSE (2013) also found noticeable differences in the average time spent on assigned reading among different majors. In a typical seven-day week, senior students majoring in the arts and humanities or social sciences spent the most of time (about eight hours per week) on assigned reading, whereas engineering majors spent the least amount of time (an average of five hours per week) on assigned reading. It is worth noting that senior students in engineering reported spent the most time preparing for class which may include others forms of studying such as doing homework problems or lab work.

Among studies examining college students’ reading motivation, only few scholars (Howard, 2004; NSSE, 2013; Roberts & Roberts, 2008; Trice & Wilmes, 2011) have focused on the reading motivation of students at four-year institutions, like the NSSE Annual Report (2013). And while several have studied college students in the English as Second Language (ESL) programs, or who were English Language Learners (ELL) (Arguelles Alvarez, 2012;

Lei, Berger, Allen, Plummer, & Rosenberg, 2010; Haupt, 2015), very little focus has been paid to other student characteristics such as gender, race/ethnicity, age, parental education as well as its relationship with how students tend to approach learning.

### **Approaches to Learning**

Similar to reading motivation, Ramsden (1988) found students' approach to learning was partly dependent upon situational influence like the disciplinary context. That is, students tend to adapt their learning strategies based on the task at hand as well as the chosen method of teaching, assessment strategies, and the curriculum. However, Ramsden (1988) also pointed out that students' perception of the task is "partly a function of his or her previous experiences of learning" (p. 161) which may reflect the extent to which one can fully meet the demands of the task.

Biggs (1979) was the first to recognize students approached learning task, such as reading, with a combined attention to motive and strategy. For instance, students who are intrinsically interested in the subject matter and apply a reading strategy to maximize the meaning of the content area, tend to achieve a deep learning outcome (Biggs, 1987). Students who take on this deep-level processing approach, as opposed to a surface-level approach, engaged in the assigned material by reconstructing knowledge within their personal framework, which in turn, helps to code information to memory by making meaningful connections with previously known concepts (Svensson, 1997).

One study by Nelson Laird and colleagues (2008) categorized disciplinary areas using Biglan's scheme (1973a) to examine the extent to which deep approaches to learning varied by academic context. Biglan (1973a) proposed three dimensions to categorize subject matters:

hard-soft, pure-applied, and “concern with life systems” (p. 201). Biglan (1973a) claimed that those three dimensions have three common characteristics: “the degree to which paradigm exists” (p. 202), related to applications and life systems. From a random sample of over 80,000 seniors attending 517 different four-year colleges and universities, Nelson Laird and colleagues (2008) revealed disciplinary area had an effect on senior students’ uses of deep approaches to learning.

Deep approaches to learning in this study was defined by three subscales measuring students’ level of engagement in reflective learning, integrative learning, and high-order learning. Specifically, Nelson Laird et al. (2008) found seniors majoring in hard fields (e.g., biology, engineering) used deep approaches to learning less than those in the soft fields (e.g., sociology, education). Although not as strong of a predictor, the same was true for those majoring in applied (vs. pure) and non-life (vs. life) fields. More importantly, the effect of discipline was not consistent across disciplinary areas as categorized by Biglan’s schema (1973a, b). That is, the negative effect of being in a hard field tended to be stronger among seniors who majored in pure fields than their counterparts in the applied fields.

### **Purpose**

As current literature shown, expectations on student reading vary by teaching norms in various academic fields. However, few studies, if any, have specifically looked into how students reading motivation differs by individual background characteristics and their chosen field of study as classified by Biglan (1973a). This study aims to explore the extent to which college students’ intrinsic reading motivation varies by Biglan’s categories of academic fields.

In addition to strong reading motivation, reflective and integrative learning is also related to students' academic achievement. Reflective and integrative learning skills are an important component of deep approaches to learning. Students' abilities to reflect and integrate new information are important for their academic success and crucial for their development in societal skills. According to Boyd and Fales's (1983) definition of reflective learning, reflective learning is "the process of internally examining and exploring an issue of concern triggered by an experience, which creates and clarifies meaning in terms of self and which results in a changed conceptual perspective" (p. 100). Hay, Peltier, and Drago (2004) argued that reflective learning facilitates the process of self-exploration and internal examination during learning, which leads to an important learning outcome—changes in learners' perspectives when they encounter new information and experiences. Additionally, integrative learning emphasizes "the ability to make, recognize, and evaluate connections among disparate concepts, fields, or contexts" (Huber, Hutchings, Gale, Miller, & Breen, 2007, p. 46). The ability to integrate knowledge is a sophisticated skills that requires a fairly large amount of time, effort, and experiences to obtain (Huber et al., 2007). Huber et al. (2007) also argued that "[t]he most promising initiatives for integrative learning are about finding strategic points of connection, threading attention to integrative learning throughout (and between) an institution's various programs, and encouraging and scaffolding students' own efforts to connect the parts"(p. 46). However, our knowledge is limited about the relationship between students' intrinsic reading motivation and reflective and integrative learning.

This study aims to explore such relationship, along with better understanding student characteristics that are associated with intrinsic reading motivation. Specifically, this study is

guided by the following three research questions:

1. What student background characteristics and college academic experiences (disciplinary field of study) are associated with seniors' intrinsic reading motivation?
2. To what extent is intrinsic reading motivation of senior students related to their engagement in reflective and integrative learning?
3. Does disciplinary fields moderate the impact of intrinsic reading motivation on seniors' engagement in reflective and integrative learning?

## **Methods**

### **Data Source, Sample, and Measures**

Data for this study are from the 2013 administration of National Survey of Student Engagement (NSSE). NSSE is designed to collect information about the nature and quality of the undergraduate experience among first-year and senior students enrolled at four-year institutions. In addition to the core NSSE survey that asks students questions about their engagement experiences, such as higher-order learning, reflective and integrative learning, students are asked how they spend their time in academic activities, quality of interactions with others on campus, perceptions of the college environment, as well as their demographic and enrollment information.

A subset of students ( $N = 23,382$ ) attending 47 institutions responded to an additional set of question focusing on the nature of students motivation to read. Because many first-year students have not declared a major, this study focused on the experiences of senior students. Of the 23,382 respondents, 12,383 (52%) were senior students. As shown in Table 1, women represent 62.6% of the sample. White students were the majority group (67.0%) by

race-ethnicity, while multiracial students were the least representative group (1.5%). A majority of students (78.4%) were enrolled fulltime. Slightly over half (51.5%) of students spent one to five hours reading each week. First generation (48.6%) and non-first generation students (51.4%) were almost equally represented. Traditionally aged students (less than 24 years old) were slightly more represented in the sample than non-traditionally-aged students (58.6% vs. 41.4%). Only 6.0% students took all courses online. As for college grades, nearly half (50.4%) of students reported earning mostly As in college, 44.2% of students obtained mostly Bs, and the remaining 5.3% of students received mostly Cs or below.

Additionally, utilizing Biglan's (1973a) classification of subject matters, this study categorized 137 students' self-reported majors into four categories: hard-pure, soft-pure, hard-applied, soft-applied (see Table 2). Over half (50.4%) of students majored in soft-applied fields, followed by soft-pure (21.6%), hard-applied (15.3%), and hard-pure (12.7%).

A scale measuring students' intrinsic motivation to read serves as our variable of interest. The Intrinsic Reading Motivation scale (Cronbach's  $\alpha = .67$ ) is a component of four items that asked students the extent they agreed with the following statements: I am interested in the topic; I enjoy reading of any kind; I respect the instructor; and the reading material is easy to understand. Reflective and Integrative Learning (Cronbach's  $\alpha = .88$ ) scale serves as the dependent variable and is created by averaging seven items regarding students' experiences in connecting one's knowledge with other courses and problems, reflecting one's own thinking, and examining other's viewpoints. See Table 3 and 4 for details about items in scales.

Additionally, a variety of items were examined from the survey including student

characteristics and institutional characteristics.

### **Data Analyses**

To answer the first research question, descriptive analyses and an Ordinary Least Squares (OLS) regression were used to explore the relationship between Intrinsic Reading Motivation and demographic background (gender, race and ethnicity, first generation status, age) and academic characteristics (enrollment status, time spent on reading, online courses, grades, degree expectations, major ). We included Carnegie classification and Barron's selectivity as control for the institutional context.

To answer the second research question, an OLS regression was used to examine the relationship between Intrinsic Reading Motivation and Reflective and Integrative Learning, holding all other student and institutional characteristics constant. To answer the third research question, an interaction term between Intrinsic Reading Motivation and Biglan's academic fields was entered into the OLS regression based on the analysis of the second research question. Both Intrinsic Reading Motivation and Reflective and Integrative Learning variables were standardized prior to entry into the models.

### **Limitations**

This study has a couple of limitations that impact the generalization of the findings. First, the institutions included in the study were not randomly sample from all four-year U.S. colleges and universities nationwide. Rather, institutions self-selected to register and administer NSSE on their campuses. Although students were randomly sampled at these institutions, we recommend that readers should be cautious when generalizing the findings of this study.

Second, NSSE also asks students to self-report their behaviors and approaches toward student engagement activities. For example, in this study, students' intrinsic reading motivation, engagement in reflective and integrative learning, and their demographic information were all self-reported. There are concerns about the validity of NSSE data and the connections between students' self-reported data and their behaviors (Bowman & Hill, 2010; Poter, 2011; LaNasa, Cabrera, & Trangsrud, 2009). However, many scholars have argued that under certain circumstances, self-reported data are valid and reliable. For example, respondents know the requested information; the information requested is about respondents' recent behaviors and activities; or the wording of the questions are very clear (Kuh, 2001; Noble & Sawyer, 1988). We believe that college students are able to report their recent behaviors and activities adequately, nevertheless, we would suggest that readers should use and interpret the findings of this study with caution as well (Carrell & Willmington, 1996; Kuncel, Credé, & Thomas, 2005; Pike, 1996).

## **Findings**

### **What student background characteristics and college academic experiences**

#### **(disciplinary field of study) are associated with seniors' intrinsic reading motivation?**

Table 5 shows that a variety of student and institutional characteristics were significant predictors of Intrinsic Reading Motivation. Females had slightly higher Intrinsic Reading Motivation than males ( $B = .10, p < .001$ ). Students who are multiracial had the lowest level of Intrinsic Reading Motivation compared to their White peers ( $B = -.19, p < .01$ ), whereas Hispanic or Latino students had the highest level of Intrinsic Reading Motivation ( $B = .14, p < .001$ ). Traditionally-aged students had lower level Intrinsic Reading Motivation than

non-traditional age students ( $B = -.18, p < .001$ ). Intrinsic Reading Motivation was also significantly related to self-reported college grades. Students who earned mostly A's reported higher Intrinsic Reading Motivation than students who earned mostly B's ( $B = -.15, p < .001$ ) and C's or lower ( $B = -.33, p < .001$ ). When considering students with a degree expectation of earning a baccalaureate or less as the reference group, we found that the higher the degree level, the higher Intrinsic Reading Motivation they had (doctoral degree:  $B = .23, p < .001$ ; master's degree:  $B = .11, p < .001$ ). Considering students who majored in soft-applied field as the reference group, students who majored in soft-pure fields had the highest level of Intrinsic Reading Motivation ( $B = .15, p < .001$ ), whereas students who majored in hard-applied fields had the lowest level of Intrinsic Reading Motivation ( $B = -.15, p < .001$ ). Students attending non- or less competitive institutions ( $B = .07, p < .001$ ) or competitive institutions ( $B = .06, p < .001$ ) had higher level of Intrinsic Reading Motivation than students attending very or highly competitive institutions. Additionally, students who are attending baccalaureate institutions had the highest Intrinsic Reading Motivation, compared with students in doctoral-level and research-focused institutions ( $B = -.14, p < .001$ ) and master's institutions ( $B = -.09, p < .01$ ). The model is significant ( $F = 38.232, p < .001$ ) and the adjusted  $R^2$  suggests 6.5% of the variance in Intrinsic Reading Motivation is explained by student and institutional characteristics included in the model.

**To what extent is intrinsic reading motivation of senior students related to their engagement in reflective and integrative learning?**

After holding all else constant, Intrinsic Reading Motivation ( $B = .24, p < .001$ ) had a positive and significant relationship with Reflective and Integrative Learning. Again, the

model was significant ( $F = 98.354, p < .001$ ) and adjusted  $R^2$  suggests 16% of the variance in Reflective and Integrative Learning can be explained by predictors in this model.

**Does disciplinary fields moderate the impact of intrinsic reading motivation on seniors' engagement in reflective and integrative learning?**

In order to answer the third research question, an interaction term was added into the model to determine whether the effect of Intrinsic Reading Motivation on Reflective and Integrative Learning varied by disciplinary fields. Results from Table 6 reveal interaction terms were non-significant, meaning the disciplinary context did not moderate the effect. In other words, the positive relationship between Intrinsic Reading Motivation and Reflective and Integrative Learning did not significantly vary among the four disciplinary fields (using soft-applied as the reference group).

**Significance**

The findings of this study are important and helpful for faculty members, advisors, and college senior students themselves. First, this study is very important for faculty members to understand the different levels of intrinsic reading motivation reported by students with different backgrounds. Understanding students who had relatively low intrinsic reading motivation will help faculty members to reexamine their pedagogies in order to support those students in reading and then promote course retention. Additionally, becoming aware of students' intrinsic reading motivation will facilitate faculty members to use reading intervention in order to engage as many students as possible to participate in assigned readings (Trice & Wilmes, 2011). Furthermore, the findings may help faculty members explore the factors that influence students' reading motivation, such as reading strategies,

language skills, and attentions issues (Trice & Wilmes, 2011). If those are issues that undermined students' reading motivation, faculty members will be able to work with students together to enhance reading motivations. In addition, being aware of the positive relationship between intrinsic and reflective and integrative learning skills, faculty members will be able to work on promoting students' reading motivation purposefully in order to increase students' engagement in reflective and integrative learning.

Second, this study is also helpful for student affairs professionals in advising students in reading. Particularly, advisors at the learning center and student affairs professionals, who taught an undergraduate course, will be able to utilize the findings of this study to identify students, who had low level of intrinsic motivation to read and intervene promptly. Additionally, student affairs professionals will be able to reach out to faculty members and work with them in supporting student learning collaboratively.

Third, college student themselves can also see their intrinsic reading motivation and reflective and integrative learning skills mirrored in this study. By acknowledging the reasons for not completing reading assignments, perhaps they may better understand what personally motivates them to read. Students may reach out to faculty or support staff to seek assistance and collaborative find ways to enhance their intrinsic reading motivation, and thus, gain reflective and integrative learning skills. . Additionally, if faculty members and staff want to increase students' reflective and integrative learning, they could look into students' intrinsic reading motivation. Specifically, faculty and staff could adjust teaching practices or design interesting and creative assignments that enhance students' desire to read.

### **Discussions and Recommendations**

This study found male students, multiracial students, and traditional-aged students had lower intrinsic reading motivation than their peers. Further studies need to investigate the reasons that why those group of students had low intrinsic reading motivation. Accordingly, faculty and advisors will be able to provide specific support and resources to those groups of students based on their needs.

This study also found intrinsic reading motivation varies by academic fields. Students in soft-pure fields had the highest level of intrinsic reading motivation and students in hard-applied fields had the lowest. This finding echoes Wamback's (1999) argument that faculty members' expectations of reading are associated with the nature of the academic fields, such as humanities, which belongs to soft-pure category emphasizes critical and analytical thinking skills. It makes sense that students in soft-pure fields had higher level of intrinsic reading motivation. This finding also suggests that if faculty members want to promote the reading motivation of students, making students clearly understand the reading expectations may be very helpful.

This study also found that students, who have a higher degree of expectations, tend to have greater intrinsic motivation to read. This finding implies the significance of understanding the requirement and expectations of readings in enhancing students' reading motivation. Taking senior students who expect to achieve a doctoral degree as an example, they may have learned about or understood the importance of reading for graduate studies, such as the work load or the role of reading for one's research. With the goal of pursuing a doctoral degree in mind, those senior students may more likely to prepare themselves early for graduate school by developing good reading habits. Alternatively, it is possible students

who pursue graduate education are also more likely major in the soft fields that emphasize the importance of reading as part of the curriculum.

Additionally, this study found that the lower grades students obtained the lower intrinsic reading motivation that students had. This is very important for faculty members and advisors to identify students who are at-risk and provide them sufficient support and resources to promote their reading motivation in order to avoid a vicious circle in study. More research needs to be done to better understand why students from multiracial backgrounds have lower reading motivation. A follow-up study may examine to what extent faculty adapt reading materials based on the diverse interests and backgrounds of their students and if this approaches contributes to increased reading motivation.

Studies suggest that instructional practices, such as pop quizzes, emphasis on benefits of reading, small-group “book clubs”, and graded journals, are believed to be effective incentives for promoting reading motivation (Brost & Bradley, 2006; Connor-Greene, 2000; Hobson, 2004; Lei et al., 2010; Lewis, 2004; Roberts & Roberts, 2008). Through a quantitative study, Trice and Wilmes (2011) explored which types of reading intervention are most effective in engaging college students to read and engage. They found that *Jig Saw* method was very effective for college classroom, which engaged more than 90% of the participants in learning by getting involved in reading activates (Trice & Wilmes, 2011). *Jig Saw* method divides students into a base group and an expert group based on their knowledge of course content. Each base-group member goes to the expert group to gain information and come back to share with their base-group members (Pennsylvania Training and Technical Assistance Network, 2004). *Jig Saw* method is an effective strategies to use to promote peer

learning. Many strategies have been familiar among students since their K-12 education, such as prompt questions and pop quizzes. Although those reading intervention strategies can be accessed easily and freely, faculty members should reexamine them and consider how to adjust those strategies in order to fit college-level courses.

In addition to employing strategies to promote reading motivation, it is important for faculty to adjust course designs and pedagogies promptly based on students' preference and expectations on reading. In future studies, we would like to add an additional survey item that asks students to rate the reading topics, the types of reading materials, and the format of the reading given by their faculty members, and allows students to express their preferences. Meanwhile, schools should offer resources to faculty members in course development or pedagogies in order to enhance students' reading motivation and reflective and integrative learning.

Another important finding of this study is the positive relationship between students' intrinsic reading motivation and reflective and integrative learning. This finding is in accord with Biggs's (1987) assertion about the positive relationship between students' intrinsic interests, reading strategy, and deep learning outcomes. Students take on deep approaches to learning will help them achieve deep learning outcomes. In order to support student to develop deep approaches to learning, faculty members and advisors should think about ways to promote students' intrinsic reading motivation, which has a positive association with reflective and integrative learning—an important component of deep approaches to learning. That means, by enhancing students' intrinsic reading motivation, faculty and advisors will be able to help students develop deep approaches to learning to some extent.

Finally, it is important for students themselves to establish the ownership of their learning and intentionally enhance their motivation in reading. Regardless of the effective pedagogies and instructional techniques employed by faculty members, or the prompt assistance and rich resources students obtained from their colleges and universities, those are all external factors that influence students' learning. As Trice and Wilmes (2011) argued, "motivation impacts whether or not an individual, with or without skills, is willing to engage in goal setting, problem-solving, role-taking, communication, etc." (p. 127). Therefore, it is essential that students, faculty members, and academic affairs staff work together to help students establish confidence and interest in their reading.

### **Conclusion**

College senior students' intrinsic reading motivation varies among different student demographic backgrounds, such as gender, race and ethnicity, age, grades, and degree expectations. Intrinsic reading motivation also varies by academic context, and was related to reflective and integrative learning. Hence, faculty members and student affairs professionals play an essential role in identifying students who have comparatively lower reading motivation, and promoting their intrinsic reading motivation through challenging, guiding, and supporting them to do their best work. Additionally, becoming aware of the positive relationship between intrinsic reading motivation and reflective and integrative learning, faculty members and advisors better understand the mechanisms that may promote deep learning in their course and other their course and in other student learning activities.

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Table 1.  
*Descriptive Results of Sample (N=12,414)*

<b>Student Characteristics</b>		<b>Count</b>	<b>Percentage</b>
Gender			
	Female	7,769	62.6
	Male	4,645	37.4
Race and Ethnicity			
	Asian, Native Hawaiian, or Other Pacific Islander	210	1.7
	Black or African American	870	7.0
	Hispanic or Latino	1,769	14.3
	White	8,314	67.0
	Other	1,063	8.6
	Multiracial	188	1.5
Full-time			
	No	2,686	21.6
	Yes	9,728	78.4
Time spent on reading			
	0 hours	634	5.1
	1-5 hours	6,394	51.5
	6-10 hours	3,197	25.8
	11-15 hours	1,216	9.8
	16-20 hours	586	4.7
	21-25 hours	206	1.7
	26-30 hours	94	0.8
	More than 30 hours	87	0.7
First-generation			
	No	6,380	51.4
	Yes	6,034	48.6
Traditional age			
	Traditional students	7,277	58.6
	Non-traditional students	5,137	41.4
Take all courses online			
	No	11,669	94.0
	Yes	745	6.0
Grades			
	As	6,276	50.6
	Mostly Bs	5,484	44.2
	Cs or lower	654	5.3
Educational aspiration			
	Bachelor's degree or less	3,794	30.6
	Master's degree	5,522	44.5
	Doctoral degree	3,098	25.0
Biglan's academic fields			
	Hard-pure	1,579	12.7
	Soft-pure	2,677	21.6
	Hard-applied	1,896	15.3
	Soft-applied	6,262	50.4
Carnegie classification			
	Doctoral and Research	7,052	56.8
	Master's	4,043	32.6
	Baccalaureate	1,235	9.9
	Other Carnegie type	84	.7

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Barron's selectivity		
Non- or less competitive	3,273	26.4
Competitive	5,327	42.9
Very or highly competitive	3,814	30.7

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Table 2.  
Academic Fields by Biglan Categories

	Hard		Soft	
<b>Pure</b>	Astronomy Atmospheric science Biochemistry or Biology (general) Botany Cell and molecular Chemistry Earth science (including Environmental Kinesiology	Mathematics Microbiology or Neuroscience Other biological Other physical sciences Physical sciences Physics Physiology & Statistics Zoology	Anthropology Art history Arts, fine and applied English (language and literature) Ethnic studies French (language and literature) Gender studies Geography History Humanities (general) International relations Liberal arts and sciences	Music Other fine and performing arts Other humanities Other language and literature Other social sciences Philosophy Political science Psychology Social sciences (general) Sociology Spanish (language and literature) Theater or drama
<b>Applied</b>	Aero-, aeronautical Agriculture Bioengineering Biomedical engineering Biomedical science Chemical engineering Civil engineering Computer engineering Computer information Computer science Dentistry Electrical or electronic Engineering (general) Industrial engineering Information systems Information technology	Marine science Materials engineering Mechanical engineering Medicine Natural resources and Natural science Network security and Other agriculture & Other computer science Other engineering Petroleum engineering Pharmacy Software engineering Speech Veterinary science	Accounting Allied health Architecture Broadcast communications Business administration Business education Communications (general) Criminal justice Criminology Early childhood education Economics Education (general) Elementary, middle school Entrepreneurial studies Family and consumer studies Finance Forensics Health science Health technology (medical, Healthcare administration and Hospitality and tourism International business Journalism Justice administration Law Management Management information Marketing Mass communications and media	Mathematics education Military science Music or art education Nursing Nutrition and dietetics Occupational safety and health Occupational therapy Organizational leadership or Other business Other communications Other education Other health professions Parks, recreation, leisure studies, Physical education Physical therapy Public administration, policy Public relations and advertising Public safety and emergency Rehabilitation sciences Religion Secondary education Social studies education Social work Special education Speech therapy Supply chain and operations Technical, vocational studies Telecommunications Theological studies, ministry Urban planning

Table 3.

*Scales and Component Items of Intrinsic Reading Motivation*

Scale and Item	Mean	SD
How much do you agree or disagree with the following statements? I complete course readings because ... (Strongly disagree; Somewhat disagree; Somewhat agree; Strongly agree)		
<b>Intrinsic Reading Motivation (<math>\alpha = .67</math>)</b>	2.88	.57
I am interested in the topic	3.13	.74
I enjoy reading of any kind	2.53	.91
I respect the instructor	3.20	.78
The reading material is easy to understand	2.66	.80

Table 4.

*Scales and Component Items of Reflective and Integrative Learning*

Scale and Item	Mean	SD
During the current school year, about how often have you done the following? (Never; Sometimes; Often; Very often)		
<b>Reflective and Integrative Learning (<math>\alpha = .88</math>)</b>	38.56	12.93
Combined ideas from different courses when completing assignments	3.04	.84
Connected your learning to societal problems or issues	2.84	.90
Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	2.64	.97
Examined the strengths and weaknesses of your own views on a topic or issue	2.84	.85
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	2.93	.84
Learned something that changed the way you understand an issue or concept	2.94	.81
Connected ideas from your courses to your prior experiences and knowledge	3.26	.74

Table 5.

*Regression Results of Student Characteristics and Intrinsic Reading Motivation*

Student Characteristics	Intrinsic Reading Motivation <sup>a</sup>		
	B	SE of B	Sig.
(Constant)	-.01	.05	
Female	.10	.02	***
Race/Ethnicity (White (non-Hispanic)= reference group)			
Asian, Native Hawaiian, or Other Pacific Islander	.04	.07	
Black or African American	.07	.04	*
Hispanic or Latino	.14	.03	**
Multiracial	-.19	.07	**
Other	.03	.03	
First generation students	.00	.02	
Traditional age	-.18	.02	***
Full-time	-.04	.02	
Taking courses all online	.04	.04	
Grades (A = reference group)			
Mostly Bs	-.15	.02	***
Cs or lower	-.33	.04	***
Educational Aspirations (Baccalaureate or less = reference group)			
Master's degree	.11	.02	***
Doctoral degree	.23	.03	***
Time spend on reading every week	.02	.00	***
Biglan's academic fields ( Soft applied = reference group)			
Hard pure	-.09	.03	**
Soft pure	.15	.02	**
Hard applied	-.15	.03	***
Barron's selectivity (Very or highly competitive = reference group)			
Non- or less competitive	.07	.03	*
Competitive	.06	.02	**
Carnegie classification (Baccalaureate = reference group)			
Doctoral and Research	-.14	.03	***
Master's	-.09	.03	**
Other Carnegie type	.09	.11	
R	.066		
Adjusted R <sup>2</sup>	.065		
F	38.232***		

Note. \* p<.05, \*\* p<.01, \*\*\*p<.001, two-tailed.

<sup>a</sup>Dependent variable was standardized prior to entry into the model.

Table 6.

*Regression Results of Regression Results of Intrinsic Reading Motivation and Reflective and Integrative Learning*

Student Characteristics	Reflective and Integrative Learning <sup>a</sup>					
	B	SE of B	Sig	B	SE of B	Sig
(Constant)	-.63	.05	***	-.64	.05	***
Female	.01	.02		.01	.02	
Race/Ethnicity (White (non-Hispanic)= reference group)						
Asian, Native Hawaiian, or Other Pacific Islander	-.07	.06		-.07	.06	
Black or African American	.03	.03		.03	.03	
Hispanic or Latino	.03	.03		.03	.03	
Multiracial	.07	.07		.07	.07	
Other	-.06	.03	*	-.06	.03	*
First generation students	.02	.02		.01	.02	
Traditional age	.06	.02	**	.06	.02	**
Full-time	.13	.02	***	.13	.02	***
Taking courses all online	.04	.04		.04	.04	
Grades (A = reference group)						
Mostly Bs	-.10	.02	***	-.10	.02	***
Cs or lower	-.16	.04	***	-.16	.04	***
Educational Aspirations (Baccalaureate or less = reference group)						
Master's degree	.20	.02	***	.20	.02	***
Doctoral degree	.36	.02	***	.36	.02	***
Time spend on reading every week	.02	.00	***	.02	.00	***
Biglan's academic fields ( Hard applied = reference group)						
Hard pure	.02	.03		.03	.03	
Soft pure	.47	.03	***	.47	.03	***
Soft applied	.38	.03	***	.38	.03	***
Barron's selectivity (Very or highly competitive = reference group)						
Non- or less competitive	-.07	.03	**	-.07	.03	**
Competitive	-.05	.02	*	-.05	.02	*
Carnegie classification						
Doctoral and Research	-.02	.03		-.02	.03	
Master's	-.01	.03		-.02	.03	
Other Carnegie type	.25	.11	*	.25	.11	*
Intrinsic Reading Motivation	.25	.01	***	.25	.02	***
Interaction Term						
IRM×Hard Pure				.05	.03	
IRM×Soft Pure				.00	.03	
IRM×Soft Applied				.00	.02	
R	.16			.16		
Adjusted R <sup>2</sup>	.16			.16		
F	98.354***			87.558***		

*Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed.*

*IRM: Intrinsic Reading Motivation*

*a Dependent variable and Intrinsic Reading Motivation were standardized prior to entry into the model.*