

An assessment of reading compliance decisions among undergraduate students

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Abstract: Research suggests that reading compliance among undergraduate students is low. This study assesses the factors that influence students' decisions to comply with their assigned course readings using two theoretical underpinnings: students' self-rationing ability of time and construal effects on their decision process. Data collected through focus group discussions with undergraduate students and analyzed using qualitative methods suggest that both these behavioral economics theories may provide valuable insight into students' decision-making behavior related to reading compliance. The study found that students' decisions to read are influenced by both personal and external factors, several of which pertain to their instructors. Students also admit that lack of time and inability to self-ration time towards reading tasks are factors that negatively impact their reading compliance behavior. The study also found evidence of construal effects in the students' understanding of the potential benefits of reading compliance, given that several of these benefits would occur beyond their immediate future. The conceptual mapping of the results leads to several propositions for future research.

Keywords: reading compliance, construal level theory, behavioral economics, self rationing inefficiency, time management

I. Introduction.

Research suggests that reading compliance amongst undergraduate students is low and that it negatively impacts scholarly performance (Hobson, 2004; National Survey of Student Engagement, 2001) and previously held beliefs that undergraduate students possess appropriate reading abilities are being challenged (Bean, 1996). While precise data on reading compliance is scarce, it is likely that the lack of reading compliance is of significant concern to college and university instructors (Baier, Hendricks, Gorden, Hendricks, & Cochran. 2011).

Reading course assigned readings is one of the tasks that students are asked to perform in preparation of their classes. It is a task that, in essence, requires the student to make a conscious decision about reading his/her assigned course materials. At face value, this may appear to be a simple decision: students most likely understand the value of getting a course qualification and therefore reading their course materials helps them accomplish this objective. However, the reality is that students are faced with several options to spend their limited time (an economic resource). They can spend time on other academic activities, non-academic activities and on working to pay for their educational expenses to name a few. Students must decide to allocate time among these competing activities of varying importance and urgency and reading their course assignments is one of them. This makes reading compliance a more complex decision

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than it appears to be at the surface. Interdisciplinary research also suggests that individuals' ability to make complex decisions of resource allocation (such as time) to activities that do not necessarily result in immediate benefits is limited (Fujita, Trope, Liberman, & Levin-Sagi, 2006). In fact, individuals have been shown to be inefficient in rationing of resources such as time (Wertenbroch, 2002).

The purpose of this study was to assess the factors that influence the undergraduate students' decision process to comply with their course assigned readings. We pursue this purpose through the lenses of two behavioral economic theories: self-rationing theory and construal level theory. Based on prior studies on reading compliance and on behavioral economic perspectives of individual decision-making, this study focused on the following research questions:

1. What factors influence undergraduate students' reading compliance decisions?
2. How does time available impact students' reading compliance decisions?
3. What are the benefits that students associate with reading assignments?
4. How can reading compliance decisions of undergraduate students be improved?

A better understanding of the factors that influence students' reading compliance behavior could allow instructors to intervene effectively so that reading compliance increases. Overall, the study contributes to the topic literature by investigating whether self-rationing of time and construal effects might impact students' reading behaviors.

II. Literature Review.

A. Reading Compliance in Higher Education.

Reading compliance in higher education has received considerable attention in the literature and scholars from several disciplines, predominantly from psychology, have investigated the effectiveness of various methods, both positive and negative, on stimulating reading compliance among college students. In a summary study, Burchfield and Sappington (2000) looked at compliance with required reading assignments in introductory to graduate-level psychology courses between 1981 and 1997. Using a sample of over 900 students, they found that reading compliance had declined over the period under study. However, they also found that compliance improved as a function of increasing class level, with seniors complying better than freshmen. They advocated a renewed emphasis on reading compliance and recommended regular sampling of reading compliance among students by means of surprise quizzes. A study by Connor-Greene (2000) reinforced the strategy of using quizzes to increase reading compliance. In this study, the instructor replaced regularly scheduled exams with short, daily essay quizzes. When students had regularly scheduled exams, only 16% of students read before each class. After the change to daily essays, 92% of students reported reading before class.

Sappington, Kinsey, and Munasac (2002) reported on two studies on reading compliance. They found that college students tended to resist required reading assignments. The article suggested that instructors might consider using surprise quizzes, despite their hesitancy to use them, to illustrate the benefits of reading preparation to students and to emphasize the students' responsibility in the learning enterprise.

Kouyoumdjian (2004) also focused on surprise quizzes and compared the influence of infrequent and minimal-weight unannounced quizzes to a cumulative exam on students' self-reported motivation to attend class and to keep up with class reading assignments. Students rated

the use of these quizzes favorably and indicated that they were helpful as motivational tools to attend and prepare for class.

Several studies suggest that most students opt to read assignments before exams rather than keep up with the regularly scheduled reading assignments (Clump & Doll, 2007). In one study, 27% of students reported completing the assigned reading before each class, while 70% of students postponed the reading assignments until an exam (Clump, Bauer, & Bradley, 2004).

Using an alternative technique, Uskul and Eaton (2005) assigned students in a personality psychology class long-answer questions that were graded, in an attempt to increase the likelihood of students reading assigned class material in a timely manner. They evaluated the effectiveness of this technique by analyzing exam scores and student evaluations. Students performed significantly better on the exam questions that were related to the topics covered by the long-answer questions than they did on exam questions related to other topics. Students also reported having read significantly more of the assigned material when there was a long-answer question assigned and they evaluated the method positively and recommended its use in future classes.

Johnson and Kiviniemi (2009) investigated the detrimental effect of students not completing reading assignments or only doing so immediately before an exam on learning and course performance. Their study examined the effectiveness of compulsory, mastery-based, weekly reading quizzes as a means of improving exam and course performance and found that completion of reading quizzes was related to both better exam scores and overall course performance.

In their study on reading behaviors in graduate school McMinn, Tabor, Trihub, Taylor, and Dominquez (2009) surveyed a total of 744 graduate students enrolled in American Psychological Association-accredited doctoral programs. Their study found that the reported amount of assigned reading varied widely, with an average of 330 pages per week. Compliance ratings suggested that, even in graduate school, only about half the assigned reading was completed thoroughly. Yet, among graduate students thorough reading was more common than skimming or not reading assigned material at all.

Lineweaver (2010) developed an online discussion assignment as a required component of a cognitive psychology course in order to increase the number of students who read the text before class and to promote student interaction about text material. The author found that this assignment had a limited effect on examination performance, but also determined that students completing online discussions were more likely to read the textbook in advance of class, reported reading it more carefully and reported understanding lectures better and feeling more prepared for exams. These results supported previous studies that suggested that online discussions could be an effective tool in undergraduate psychology courses.

Another tool developed was the Textbook Assessment and Usage Scale (TAUS) by Gurung and Martin (2010) who used it to measure students' textbook evaluations and reading behavior. They found that student gender, student perceptions of the quality of visuals, pedagogical aids, photographs, writing, and course design all predicted student text reading behaviors and exam scores.

Lei, Bartlett, Gorney, and Herschbach (2010) found that college students were not inclined to read because of low self-confidence, a disinterest in the research topic and subject matter and because they underestimated the significance of completing the required reading. College instructors were found unmotivated to reinforce student reading for fear of poor student evaluations, the low developmental level of students, the low motivational levels of both students and instructors, as well as the instructors' expectations and beliefs.

Marek and Christopher (2011) took another approach. In order to investigate undergraduate students' perceptions of the role of the textbook in psychology courses, they surveyed 311 psychology students using an online survey. In the survey, the students answered questions about textbook importance, usage, and preferences and about scenarios that described a textbook as a resource or central course element. They found that, if an instructor expected students to read and understand textbook material before class, the students perceived that they would learn less, enjoy the course less, and find the course more difficult than if an instructor described the textbook as a resource to which students might refer for clarification.

Finally, Coulter and Smith (2012) assessed the value of mandatory pre-class readings (PCRs) and pre-class quizzes (PCQs) in a therapeutics course by correlating performance on PCQs to examination performance, and evaluated student satisfaction of these assessments via a class survey. They found a positive correlation between student PCQs and examination grades. The results of the student survey showed student satisfaction with these techniques to enhance reading compliance: students considered both PCRs and PCQs to be beneficial.

Although most studies found reading compliance increased with short quizzes and other assessments, a minority of studies discovered no relationship. For instance, Culver (2008) reported on a study designed to investigate practical and effective methods of increasing reading compliance, reading comprehension and meta-cognitive reading strategies primarily among freshman and sophomore undergraduate psychology students. Results suggested that a majority of college undergraduates read their course textbook two hours or less per week. Whereas undergraduates scored relatively high on comprehension, their performance on the teacher-made comprehension tests based on textbook material was very low. The threat of a random quiz had no statistically significant effect on reading compliance, comprehension, or meta-cognitive reading strategies.

B. Behavioral Economics - Applications to Reading Compliance.

Theories that integrate concepts from economics and psychology are loosely defined as Behavioral Economics. This is a growing field of study that increasingly gathers evidence to demonstrate how individual decisions may be biased due to emotions and social influences, or are based on heuristics (Camerer & Loewenstein, 2003). Students are no different in their behaviors and therefore also prone to such cognitive biases. This section of the literature review provides background literature on two theoretical perspectives from behavioral economics in particular: self-rationing inefficiency of resources and construal level theory.

C. Self-Rationing Inefficiency.

People constantly make consumption choices about resources at their disposal such as money, food and time in the context of certain global constraints. For instance, our food consumption choices are constrained by annual income, calorie requirements and life expectancy. Economists have long believed that such choices of resource consumption are based on our utility maximizing behavior, subject to current and discounted value of future resources available (Ando & Modigliani, 1963). In other words, choices are made based on the value that is placed on things both now and in the future (Frederick, Loewenstein, & O'donoghue, 2002). However, anecdotal evidence and growing research in behavioral economics suggests that most consumers may not be using such sophisticated decision-making processes to make their choices (Ariely &

Wertenbroch, 2002; Frederick, Loewenstein, & O'donoghue, 2002). This is largely because they tend to discount the future and therefore place higher value on current consumption, especially if future benefits of forgoing current consumption are hard to evaluate, as is the case with saving for retirement, for instance. In order to avoid over-consumption as consumers we tend to use more local constraints to curb current consumption (Ariely & Wertenbroch, 2001). One such local constraint is mental budgeting, or allocating consumption to categories with certain limits (Thaler, 1980). Still, anecdotal evidence suggests that even these mental budgeting techniques may be inefficient to help consumers self-ration their resource consumption. It is possible that behavioral traits such as impulsive, compulsive, or restrained consumption may decrease or increase self-rationing efficiency, with or without mental budgeting.

Self-rationing is defined as the ability of individuals to make optimal consumption choices of resources (such as time, money) based on budget constraints (Wertenbroch (1998). For instance, students are constrained by time available for academic and non-academic activities. Traditional, normative economic theory predicts that students will make choices of time consumption from several competing alternatives based on the ones that maximize their utility. However, recent studies have found that individuals may be self-rationing 'inefficiently' causing it to be only partially successful (Heath & Soll, 1996; Leclerc, Schmitt, & Dubé, 1995; Thaler, 1999; Carrillo & Mariotti, 2000). Wertenbroch (2001) suggests that consumers are ill-equipped to make distributed, moment-to-moment choices subject to the global constraints that normative theory predicts.

Self-regulation is a concept closely related to self-rationing. Self-regulation has been studied in context of *Executive Functioning*, cognitive systems that control and manage other cognitive processes (Baumeister et al., 2008). Extensive research has been conducted to study the relationship between Attention-Deficit/Hyperactivity Disorder (ADHD) and self-regulation of cognitive in Executive Functions (Barkley, 2010). Recently McClelland and Cameron (2011) found a relationship between academic achievement in elementary schools and self-regulation ability of students.

D. Construal Level Theory.

Construal level theory (CLT) is a theory in social psychology that describes the relation between psychological distance and the extent to which people's thoughts are abstract or concrete. CLT has been presented as one explanation of individuals improving or deteriorating self-control (Schmeichel et al., 2010). Psychologically distant things are those that are not present in the direct experience of reality (Loewenstein, Read, & Baumeister, 2003). The general idea is that the more distant an object is from the individual, the more abstract it will be thought of. The opposite relation between closeness and concreteness is true as well (Trope & Liberman, 2010). According to construal-level theory, events that are distant in time tend to be represented more abstractly than events that are close in time (McCrea, Liberman, Trope, & Sherman, 2008).

Construal level theory (CLT) posits that temporal distance influences the evaluation and choice of future events by systematically changing the way they are construed (Liberman, Trope, & Stephan, 2007). Individuals form higher-level construals of distant--future events than near-future events. High-level construals are schematic, abstract and include central features of events, whereas low-level construals are less schematic, more concrete and may also include incidental, peripheral features of events. Judgment and choice regarding the more temporally

distant events are based on higher-level construals of events (Liberman, Trope, & Stephan, 2007).

While no direct investigation has linked CLT to academic achievement, Schmeichel et al. (2010) demonstrated the impact of high and low level construal on tasks associated with executive functioning. Consistent with earlier findings, their study found that higher-level construal improved performance on tasks that required inhibition (self control) and goal maintenance. Lower level construal improved tasks for activities that required immediate responsiveness.

Both self-rationing and construal level theories can provide valuable perspectives on students' decisions to complete reading assignments, particularly because these decisions involve time: the use of time for reading and the effect of time before benefits of these readings are realized. There is scarcity of literature in assessing factors that might impact student decisions of reading compliance in these contexts. For instance, the results of reading compliance may not always be close unless directly related to student grades. If the perceived results of reading compliance are distant, this construal effect may influence student decisions to comply with reading assignments.

III. Subjects and Methodology.

A qualitative methods approach, using focus group discussions, was used to assess factors that influence the undergraduate students' decision process in complying with their assigned course readings (Stewart & Shamdasani, 1990; Krueger & Casey, 2009). Qualitative methods, such as focus groups, can provide a rich description of complex phenomena and can explore these complexities to generate hypotheses (Sofaer, 1999; Creswell, 2009). Focus groups have been used extensively in exploring such phenomena and in generating hypotheses from participant opinions, attitudes and stated attributes of discussion issues (Fern, 1982; Krueger and Casey, 2009).

However, several concerns have been raised with regard to the focus group process as well (Flores & Alonzo, 1995; Kitzinger, 1995): whereas a focus group discussion is a convenient way to collect data from several participants simultaneously and it enables the interviewer to solicit and encourage participation from those who might otherwise be reluctant to respond, an obvious negative is the risk of "group-think" in which the respondents are biased in their answers by the responses of their peers and dominant group opinions may silence dissenting opinions. Moreover, participants may be reluctant to share their opinions and true feelings with others in an open discussion.

Study subjects were recruited from the undergraduate student body of the lead author's department at a large Northeastern university in the United States. The university's Institutional Review Board approved the study protocol. Students were invited to participate in a focus group discussion via email. Those who responded were later sent the day, time and place for the focus group meeting. Initially the researchers had planned to conduct three focus group discussions, yet ultimately, two focus group meetings were conducted with a total of 18 students. The students were offered pizza and non-alcoholic beverages, along with a \$20 cash incentive, for their participation. The response rate among the students initially contacted was lower than those in recent qualitative studies of student perceptions (Rich, 2005; Wilson et al., 2005). Several students indicated that they had been unable to fit the scheduled focus group discussions into their calendars.

Data collection tools were developed by the research team to investigate the factors influencing students' reading compliance decisions, and the research team for the student focus groups developed semi-structured discussion guides. A panel of experts reviewed the interview guide from the perspectives of psychosocial behavior, behavioral economics, reading compliance determinants and education. The guided approach to focus group discussions allowed for the *a priori* development of a general list of topics and questions to be covered in a pre-determined sequence (Patton, 2002; Wolff, 2002). Major constructs of interest served as topics that included reading compliance, procrastination, incentives and disincentives to read and reading support.

Students were asked to comment on their perceptions of benefits from reading their assignments and to identify the opportunity costs related to time spent on reading. Time questions explored perceptions about the length of time spent on reading and how time available influenced reading choices.

Reading choice questions explored preferences for reading certain types of assignments versus others, the methods or processes used to make the reading choices, attitudes towards complying with reading assignments and the potential challenges of reading compliance. The questions were integrated with the focus group moderator guide. The advantage of this guided, or semi-structured, discussion approach was the somewhat systematic data collection during the focus group discussion. Additionally, this approach provided focus to the discussion while still allowing for conversation to flow for flexibility, situational sensitivity, and open-ended responses (Patton, 2002; Wolff, 2002).

Two student focus groups were conducted on the university premises during a weekday at the convenience of the students. One member of the research team conducted the focus group discussion and the graduate student in the room documented participant observations. Each interview and focus group discussion was digitally audio-recorded as well. The audio files were transcribed by an experienced transcriptionist and reviewed in their entirety by the data collectors.

Saturation was employed to improve the credibility of the qualitative research. Qualitative data collection was concluded when no new themes were emerging from the data (Merriam, 2002; Newman, Newman, & Newman, 2011). This was assessed through an ongoing process of data analysis and discussions between the two researchers. The process helped identify when this point was reached to conclude the qualitative data collection phase. The researchers used several qualitative methods to reach methodological triangulation to answer the research questions (Morse, 2010; Teddlie & Tashakkori, 2009). For instance, findings from the content analysis (Hsieh & Shannon, 2005) were used in conjunction with participant observation and the researchers' interpretation of participant responses. In addition, this study employed investigator triangulation: three investigators independently analyzed the student focus group data using a common set of codes, identified emerging themes and then categorized those themes to represent emerging concepts. The researchers met and discussed their notes and interpretations. This led to a combined transcript of themes and related concepts that emerged from these discussions and researcher interpretations. Such an approach ensured that the findings were reliable and comprehensive (Teddlie & Tashakkori, 2009). The resulting concepts and their interactions were then mapped using third-party software (CmapTools[®]) (Novak, 2010; Zeilik, 2012). The mapping software also enabled the researchers to generate ensuing propositions for future research.

IV. Results.

The following section reports on the results of the qualitative data analysis of the student focus group discussions. Results are categorized into the four major constructs that guided the discussions: reading compliance, incentives/disincentives, procrastination and support/time management. An integrated map of all constructs with their resulting relationships is presented in Concept Map 1, which presents an overview of all the relevant issues (See Figure 1).

Concepts and relationships that emerged under each of these four individual constructs are presented separately in Concept Maps 2-5. Concepts highlighted in yellow represent those that were commonly agreed in both the focus groups. The construct text font in red are the ones where there was a disagreement between the two focus group discussants – that is, one group agreed with that construct statement while the other group did not agree with it. The concept maps were used to describe the resulting relationships between the concepts. In addition, the result descriptions also include direct student quotations from focus group discussions. The description of the concept maps, together with the supporting quotations from student focus group discussions were then used to derive propositions for future research. These propositions are included in the results section and 1 at the end of this section presents a selection of relevant student quotes (See Table 1).

Construct 1: Reading compliance. Students were asked to comment on the challenges related to reading compliance and if they could be encouraged to improve compliance (See Figure 2). Participants stated that they felt that reading assignments were time consuming (both focus groups, here on 2FG). Furthermore, they commented that the availability of a book to read the assignments from (when they were associated with a text book) also influenced the degree of their reading compliance (2FG). In a related comment, students felt that textbooks were expensive and that purchasing them caused financial hardship.

When questioned on how they could be encouraged to complete reading assignments, the participants felt that short quizzes (2FG) and in-class discussions (2FG) associated with the assigned readings could encourage them to increase their reading compliance. It was also felt that ensuring that readings were recent (2FG) and interesting (2FG) to a student audience would encourage students to read in preparation for class. Students specifically identified case studies, magazine and news articles as relevant and recent sources and as the types of reading assignments they preferred.

A few students commented, and several others agreed, that being called upon in class (2FG) to answer questions related to the reading assignments would also encourage them to complete their readings. Moreover, it was felt that adding a participation grade (2FG) to the discussions that were associated with reading assignments would be helpful as well. Some students indicated that the use of student response systems, such as clickers, had a positive impact on the completion of assigned readings before each class period. This comment was interesting, because some students indicated that even when answering anonymously, they felt a need to have an informed response to the question posed by the instructor.

Students also indicated their preference to being prompted by access to and availability of the reading materials in the library reserve. As the price of some textbooks is very high, and the applicability of the text for the student beyond the course is unknown, a text in the library reserve provides a cost-free alternative to purchasing the text. Even with a text on reserve, students pointed out that the library often times only had one copy available so access could still be an issue.

Table 1. Selected Quotes from Student Focus Groups.

Reading Compliance	Incentives-disincentives	Procrastination	Support and time management
“Often-times the professor takes his lecture straight out of the book, so there’s no reason to even read the book, when he lectures that way.”	“... being called on you want to know your material so that’s one of the classes I actually do readings for.”	“... if you have enough time you’re going to (read the assignments), if you don’t it’s kind of like you’re just going to wing it.”	“Sometimes you just don’t have enough time, like have the intention to read it but as far as assignments go, that’s an easy one to skip.”
“The chapter could be really long, meanwhile the professor goes over it in 5 minutes and you just spent 2 hours reading that chapter.”	“... short quiz on (the reading assignment) and usually it’s worth it to read just to like have that boost in your grade to do well on that quiz.”	“Reading is the first thing to get cut from the list if you don’t have time.”	“I know teachers that they think to some of my roommates don’t read for all their classes but they read for the ones they like professor.”
“... don’t really sort of get in to reading until you get into junior or senior year and then it’s kind of a big shift from what you are used to so they don’t do it it’s not in their schedule, they don’t make time for it, but if it’s like you start out in the lower level classes you have to read you have to do all the assignments... you’d be more used to the time management.”	“I think the teacher needs to stress the importance (of reading assignments).”	Personally, I put (reading assignments) off as long as I can, because between other class homework and clubs and other activities I’m involved in, if I didn’t put off the reading until like the night before it’s due for a specific class, like I’ll do that.”	“... if a big (event) is coming up I want everything done I don’t want to have to worry about... my homework that’s due on Monday
“... if a professor is going to repeat his lecture, basically from the book, I’m not going to read the assignment...”	“I used to have a professor that when we talked about a reading if it was obvious that somebody didn’t read she would ask them to leave, I mean that’s a pretty strong penalty.”	“I go to the library and a lot of (books) are on reserve so you just do 2 hour check-out and I find that if I’m at the library you know I’m going to read it because I have nothing else to do and the book is there so I figure I’d do it then.”	“... even if they had the time to read or but at the same time they have to be interested and get engaged in all these other things you have to want to do it that just can’t be accomplished by solely time management.”



Finally, the students felt that reading compliance was also related to students' interest in the subject (2FG). If they were interested in the subject they would complete their reading assignments. In summary, students felt that reading compliance was impacted by several factors, both those related to the instructor and the environment (follow through with assignments and quizzes) and others that were more specific to the students (interest in subject, perceived usefulness of information).

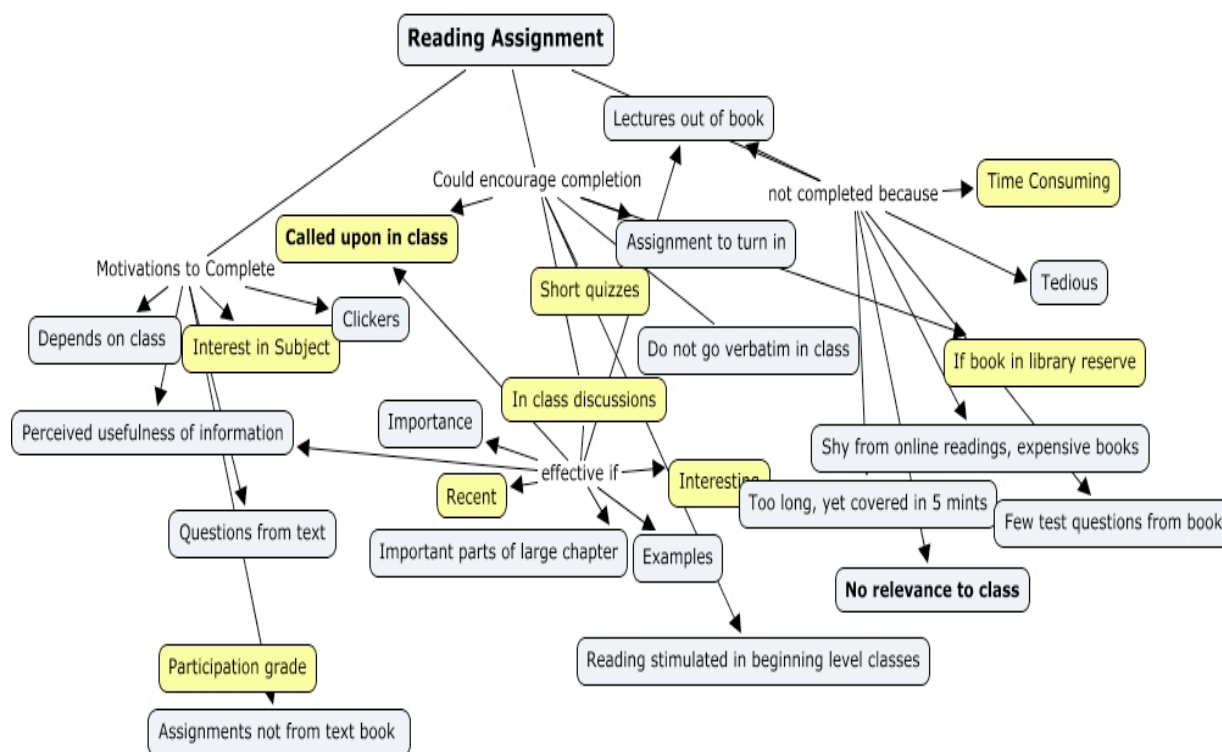


Figure 2. Reading Compliance Concept Map.

Propositions for reading compliance. Based on the interpretation of responses associated with reading compliance, the following propositions could guide future research:

1. Reading compliance will increase when students' perception of information usefulness and relevance increases;
2. Availability of library reserve books will impact reading compliance rates.

In view of the inconclusive evidence related to the effect of quizzes, we also propose the following:

3. Reading compliance will increase for 'higher relevance' reading assignments that are followed up with short quizzes than those readings considered 'lower relevance' by students.

Psychological distance dimensions of construal level theory provide support for these three propositions (Trope & Liberman, 2010). For instance information usefulness and relevance are close indicators of the benefits of reading compliance. On the other hand, book availability in the library could represent a spatial closeness of the reading material and an environment conducive towards complying with the assigned readings.

Construct 2: Incentives, disincentives and negative incentives. Students were asked to provide their opinions on what they thought were the benefits of reading assigned materials and how incentives and disincentives could improve their reading compliance (See Figure 3). The participants appeared to be aware of the short-term benefits of reading, such as the material helping them understand the concepts (2FG), an improved course grade (2FG), and the potentially useful information that readings could provide in upcoming job interviews. However,

when they were asked to comment on the long-term benefits of reading, most were unsure about what those benefits might be.

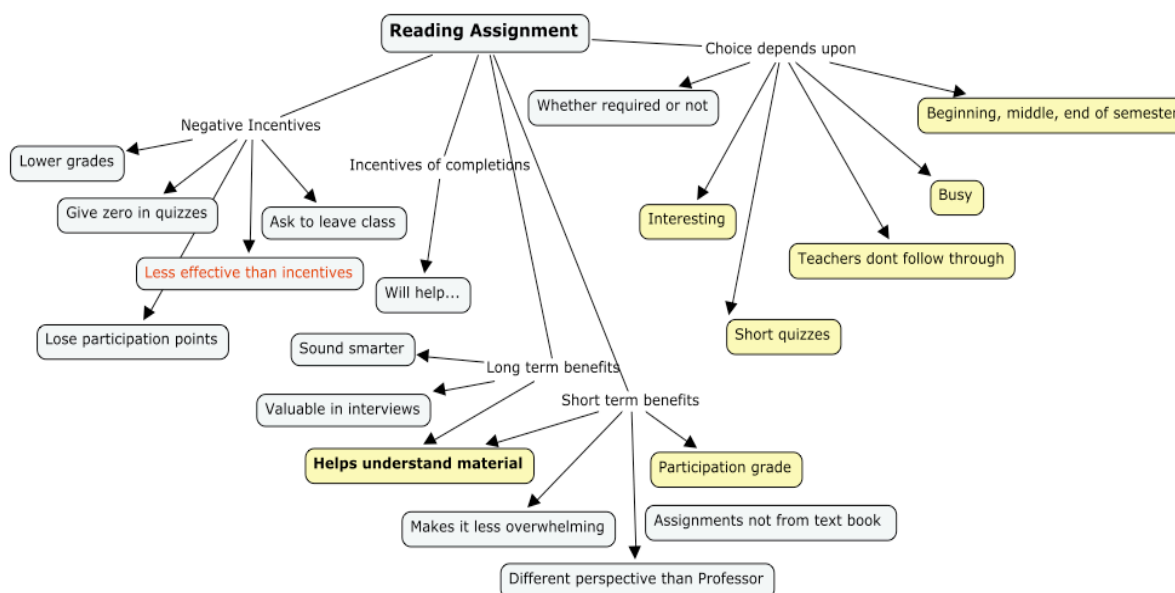


Figure 3. Incentives, Disincentives, Negative Incentives Concept Map.

The discussions on the issue of incentives and disincentives identified several strategies that might be used to enhance reading compliance. Some students felt that incentives would be more helpful in enhancing reading compliance, while others felt that disincentives would be more effective in stimulating them to read. Incentives brought up in the discussion included instructors giving a participation grade for discussions associated with reading assignments. Interesting reading materials (2FG) and instructors building on reading assignments in class discussions and lectures (2FG) were also viewed as incentives.

Some students cited random, surprise quizzes as disincentives. Specifically, if the instructor threatened a quiz, but then proceeded to not administer it some students chose not to read at future occasions. Students also identified a lack of enthusiasm on the part of the instructor as a reason not to read. Finally, if instructors spent the majority of a class session reviewing the readings, the students felt that completing the readings before class was unnecessary.

Other disincentives included being called upon in class and the potentially resulting embarrassment of not having read the assignments. Students also cited a possibly lower grade on short quizzes as a disincentive for not completing their reading assignments. These might better be classified as negative incentives; these strategies motivated students to complete reading assignments but also presented a potential negative penalty to the student for disregarding the readings. Overall, students were in agreement that certain incentives or negative incentives could provide encouragement or motivation to complete reading assignments given their busy schedules (2FG), especially during certain times of the semester (2FG). Students cited very specific disincentives, often directly related to instructor behaviors and teaching strategies, which influenced their decisions to not complete assigned readings.

In these self-reporting situations, several problems might occur, as identified by Bong (1996). Students might be tempted to justify their behavior in the eyes of the interviewer, rather

than volunteer their true thoughts and opinions. This could be a possible reason why several different reasons were brought up as to why they preferred not to read: some stated they did not read if the material was not relevant in their eyes, whereas at other times the fact that their instructor reviewed the materials in great detail in class was a deterrent.

However, the discussions were not conclusive on whether the beginning or the end of the semester were more hectic and therefore ideal for emphasizing incentives versus disincentives in stimulating reading compliance. Students indicated a wide variety of times throughout the semester that were very busy yet in many cases these times differed not on their academic calendars but on the types of student social activities they engaged in.

Propositions for incentive-disincentive. The following propositions were developed based on the discussion associated with incentives and disincentives of reading compliance:

1. The impact of incentives and negative incentives will be higher than the impact of disincentives to increase reading compliance.

In self-rationing literature, incentives can help alter behavior, particularly with the use of certain strategies such as pre-commitment (Hoch & Loewenstein, 1991). Therefore, an additional proposition for future research would also be supported with the self-rationing literature:

2. Pre-commitment will incentivize and lead to increase in reading compliance.

Construct 3: Procrastination. Focus group discussions also included questions that inquired whether students procrastinated in completing reading assignments (See Figure 4). There appeared to be wide variation in the level of procrastination. For instance, some students commented that completing reading assignments 15 minutes (2FG) before class was not unusual while others indicated that they usually completed their reading assignments the night before class (2FG). The participants felt that the level or amount of procrastination was dependent upon several factors. For instance, instructors not building on assigned readings in class encouraged students to procrastinate or not comply.

The timing of the semester also contributed as a factor (2FG). However, opinions varied on whether earlier or later in the semester meant more or less procrastination. The students are enrolled at a university with a plethora of student organizations, each holding events throughout the semester. Depending on which organization a student is involved did seem to impact reading compliance decisions, but no common time period in the semester emerged that negatively impacted reading compliance for the majority of students. The respondents also felt that the instructor's personality (2FG); shorter reading assignments and easy access to the book in library reserve (2FG) reduced procrastination and enhanced compliance. Interestingly, students felt that if they had a busy schedule (2FG) it seemed to reduce their tendency to procrastinate on completing their reading assignments.

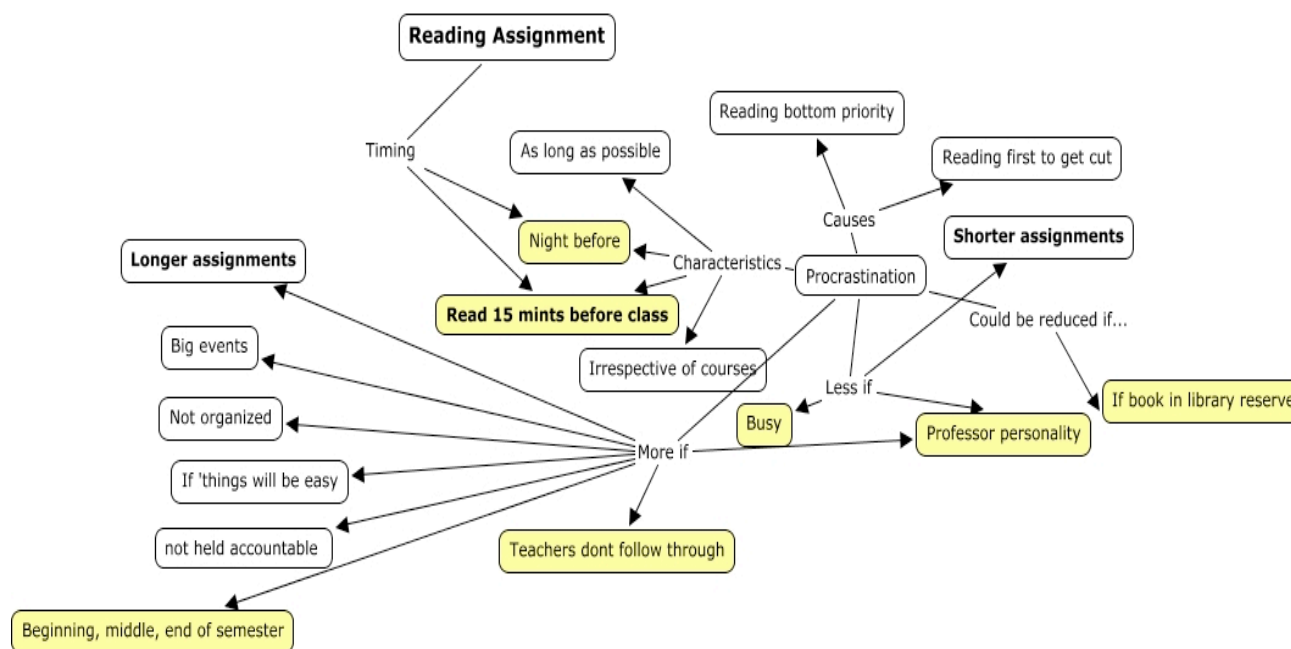


Figure 4. Procrastination Concept Map.

Propositions for procrastination. The discussion results and interpretations led us to the following propositions:

1. Procrastination will increase around major non-academic events on campus.
2. High academic and non-academic load will reduce procrastination.
3. Conveniently accessible reading materials will reduce procrastination.

Ariely & Wertenbroch (2002) argue that self imposed deadlines, especially those that are costly, will likely not be most effective. Imposing reading compliance deadlines around major non-academic events can be perceived as costly. Therefore, we expect higher procrastination around those events. Similarly, Ariely & Wertenbroch (2002) argue that externally imposed deadlines are far more effective in maximizing self-control. We therefore expect that higher loads in both academic and non-academic activities will reduce procrastination, as these pre-commitments will be largely externally imposed deadlines. The third proposition is consistent with earlier discussion on perceived reduction in spatial dimension through the arguments of the construal level theory (Trope & Liberman, 2010). We expect lower procrastination in lower perceived spatial distance, that is, of the reading material availability.

Construct 4: Support and time management. Finally, participants were questioned on whether they would like support to help them complete their reading assignments and to help them learn how to manage time effectively for this purpose (See Figure 5). While some students felt that support might not make a difference, others felt that reminders from the instructor or teaching assistant could help them improve their reading compliance. Most agreed that the time required to read their assignments was usually not too long, normally in the range of an hour or so. However, this would probably be different depending upon the student's major. Several students also felt that time management was a "self learned" process. That said, they indicated they would be receptive to reminders, though only via email, and not through social networks (such as Facebook) or via text messages. Printed materials that provided support to improve reading compliance were also identified as possibly being helpful to the students, such as how to

effectively skim long passages. Furthermore, the students felt that they found the library to be good place to read. Overall, while some students indicated that support to improve reading abilities would impact compliance, others indicated that such support might not be helpful.

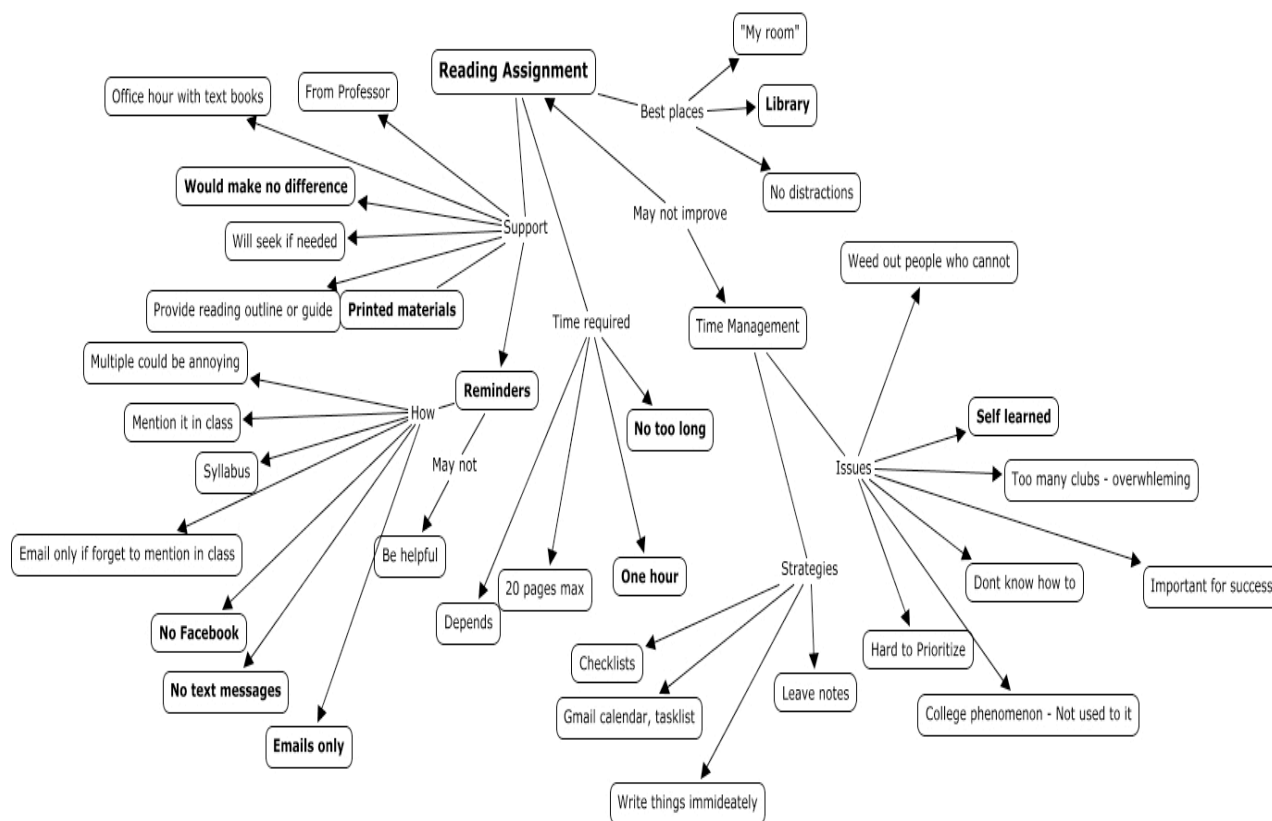


Figure 5. Reading Support Concept Map.

Propositions for Support and Time Management. The following two propositions were developed from the resulting data and information.

1. Increased support to improve reading abilities will have a positive impact on reading compliance;
2. Just-in-time reading reminders provided by the professor will have a positive impact on reading compliance.

As discussed earlier, construal level theory argues that perceived closeness of tasks to be completed will increase the perception of concreteness (Trope & Liberman, 2010). We propose that improved abilities will increase concreteness of reading compliance, that is, bring a closer understanding of the process of completing the task (reading compliance). The second hypothesis for this construct is supported by both construal level theory and self rationing as it not only relates to spatial closeness (Trope & Liberman, 2010) but also to either self-imposed or externally imposed deadlines (Ariely & Wertenbroch (2002).

V. Discussion.

The purpose of this study was to investigate factors that impact students' decisions towards reading compliance. In particular, we were interested in the effects of self-rationing effects of time and the construal effects related to the perceived benefits of reading compliance. We looked at the effect of available time in the students' decision-making process and the role of incentives and disincentives in getting students to comply with their reading assignments.

Qualitative results of this study suggest that several varied factors impact students' decision to complete reading assignments. While several of these factors were related to the course and the instructors, others were dependent upon the students themselves. For instance, students were of the view that if instructors did not follow through on reading assignments there was less motivation for them to complete their assignments. Prior research also emphasized the role of graded reading assignments, class discussions, and participation grades in reading compliance (Janick-Buckner, 1997; Gross Davis, 1999; Monaco & Martin, 2007). On the other hand, students stated that if the readings were not engaging they were less likely to complete them. There were indications that students preferred certain types of readings to others; there was a slightly higher preference for 'non-text book' readings such as case studies and articles as compared to textbook readings.

Students in the focus group discussions felt that both incentives and negative incentives could motivate them to complete reading assignments, while disincentives led to students not completing the readings. Several suggestions came up, such as participation points as examples of incentives, and quizzes and being called upon in class as examples of negative incentives. Earlier research found that surprise quizzes could be effective in emphasizing students' responsibility and thereby be effective in ensuring that assignments are completed (Sappington, Kinsey, & Munsayac, 2002). Other incentives that could be incorporated relate to the students' understanding of the benefits of reading assignments.

Our analysis of the qualitative data suggests that students appreciate short-term benefits more so than longer-term benefits, which are less clear to them. Our findings are supported by earlier research that shows the importance of illustrating the practical benefits of reading preparation (Sappington, Kinsey, & Munsayac, 2002). These findings are also consistent with the construal effects that may be acting upon students. If students perceive that benefits of reading assignments are too far in the distant future they may not find it justifiable to place a priority on those reading assignments and therefore may decide to allocate time towards other competing demands on their time (Trope & Liberman, 2010).

The purpose of our study was also to investigate whether the availability of time and the subjects' ability to self-ration their time had an impact on their reading compliance behavior. Our analysis suggests that students feel the pressure of time, particularly when deciding to complete reading assignments. Several factors were cited by the students: the multitude of academic and non-academic activities and the relatively low priority placed on reading assignments both contribute to less time being allocated towards completing reading assignments. Students also noted that they were prone to procrastination, particularly in view of the fact that reading assignments was relatively low on their priority list. While some students suggested that time management was a self-learned skill, others agreed that students could seek assistance to learn how to enhance their reading compliance.

Several other factors were identified in our data analysis of student discussions that impact reading compliance. Students mentioned that certain types of readings, such as case

studies and articles, were preferred over textbooks. And some of them felt that the instructor's actions impacted students' reading compliance, such as the instructor's policy of sharing slides, following through on reading assignments and generating interest about the reading assignments among the students.

V. Limitations and Future Research.

The purpose of this research was to assess factors that influence reading compliance among undergraduate students. This study chose a constructivist view and therefore adopted a qualitative approach to assess these factors influencing reading compliance. While such an approach allowed us to connect seemingly disparate constructs to reading compliance, we also note certain limitations of this study. The number of focus groups was small and the number of student responses was small as well. Furthermore, students self-reported their reasoning for reading compliance. Even though the purpose of this research was not to generalize, we note that these results cannot be generalized beyond the scope of the study. In fact, research propositions should be leveraged to either enhance them and/or investigate and verify them.

Based on the focus groups, as well as prior research, certain strategies can be further investigated to assess whether they would improve reading compliance. The strategy mentioned most by students in this research was the use of small, low-stakes quizzes. Although quizzing appeared to be a motivating factor, the use of surprise quizzes was viewed negatively by some students and cited as a disincentive to complete class readings. Also, prior research presented earlier hinted at a relationship between surprise quizzes and lower instructor ratings by students (Sappington et. al., 2002). Future research could investigate the effectiveness of leveraging weekly reading quizzes, or other low-stakes assignments such as a discussion question that is worth a very small number of points if answered correctly. While connecting a small number of points to assignments related to reading led to positive reading behavior, students also cited non-graded activities, such as in-class discussion and answering questions via clicker response systems as motivating factors to read. These, and additional forms of active learning that build upon or gauge understanding of reading assignments, are worth investigating as strategies to improve reading compliance.

Students also identified specific experiences that acted as disincentives to read course materials. Several of these focused on instructor behaviors, such as reviewing the readings in detail in the classroom, often in the form of a lecture. Some students also neglected to read assignments if the instructor appeared not interested in the course material in their eyes. Another common theme revolved around the specific assigned reading assignments. Students specifically identified relative, applicable readings as motivating factors to complete reading assignments. Examples included news articles and websites, journal articles and case studies. Students still understood and valued a course textbook, so long as it was relatively up-to-date and included practical applications of the content presented.

This study used the lenses of self-rational theory (Wertenbroch, 2001; McClelland & Cameron (2011) and construal level theory (Loewenstein et al., 2003; Liberman et al., 2007) to examine reading compliance. Future research could investigate these theories as a way to understand and then enhance reading compliance among students, specifically by illustrating the long-term benefits of completing course readings. Aside from immediate benefits of reading, such as doing well on a quiz, preparing for an interview was the only somewhat long-term benefit identified by students. Future research could also investigate the long-term importance of

course readings, such as being more knowledgeable, having a deeper understanding of a topic, the ability to draw connections between seemingly disparate topics and the ability to apply a wide range of knowledge to existing challenges. Our discussions indicated that even though students felt that reading of assigned materials did not usually take too long to complete (at least for this study sample) the students left the readings sometimes until right before the class. Providing a perspective of time rationing, and the awareness of actual time needed to complete assigned readings may encourage students to complete reading assignments sooner than later. Furthermore, linking long-term benefits of reading, such as vocabulary development and analytical thinking (Cunningham & Stanovich, 2001) could also be argued to be a benefit. Given the relevance and significance of the impact of this line of research, we believe future studies can make meaningful contributions in improving students' reading compliance and overall academic accomplishments.

VI. Conclusion.

In summary, the results of the analysis of the focus group discussions of undergraduate students suggest that several factors impact students' reading compliance decisions. There seems to be some evidence that students may not be self-rationing their time effectively. Moreover, the emphasis placed on short-term benefits of reading compliance and their limited understanding of the long term benefits suggest that students may be experiencing a construal effect in completing their readings. We believe that it may be worthwhile for future investigations to continue exploring these theoretical explanations of student's reading compliance decisions. A simplified view would be to categorize these factors into those pertaining to students versus those related to their environments and to their instructors. However, there were also indications of some complex interactions among these categories that warrant further investigation. Based on our analyses we presented several propositions for future research.

This study was qualitative in nature and its purpose was to gain an improved understanding of the factors influencing reading compliance decisions among undergraduate students. We recommend that future research investigate more conclusive verification of such factors. We also believe that the findings of this research may guide faculty development efforts around reading compliance. Over the last five years, the teaching center at the researchers' university is seeing an increased interest in reading compliance, with faculty often commenting that a majority of students come to class unprepared for activities based on course readings. Other universities likely would be facing similar issues related to students' reading compliance. By leveraging some of the strategies discovered through the focus groups discussions and discussed in the literature on the topic, such as using quizzes identifying relevant and recent readings and working to incorporate (but not repeat) the reading material in lectures (Connor-Greene, 2000; Sappington et al., 2002; Kouyoumdjian, 2004; Johnson & Kiviniemi, 2009), teaching centers can better guide faculty in developing strategies to enhance student reading compliance. We believe efforts can be adopted to develop strategies that will improve reading compliance among undergraduate students using novel concepts presented here that focus on available time and an appreciation of long-term benefits.

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