Improving the "Other Side" to Faculty Presence in Online Education

Richard J. Fendler
Georgia State University
rfendler@gsu.edu

Abstract

Much of the online education literature stresses the importance of teacher presence. The most common techniques used by online teachers to achieve presence are frequently posting written announcements, providing clear written instructions on assignments, offering students meaningful written feedback, and timely responding to emails. However, if students fail to carefully read, they gloss over or they completely ignore these instructor efforts, a teacher's influence is muted, and student learning outcomes may suffer. Indeed, in an empirical test of over 500 students this hypothesis is validated. Specifically, accounting for GPA, major, age, prerequisite knowledge, student satisfaction, effort, gender, and outside distractions, students who did not follow instructions on the initial course assignment, indicating a propensity to ignore instructor guidance, earned a significantly lower grade on the comprehensive final exam than students who followed instructions. In subsequent iterations of the same course, when the instructor frequently stressed to students the importance of reading announcements and instructions and when those items were provided to students in audio as well as in written format, this negative consequence on learning outcomes was mitigated. Our study and findings suggest that teachers can improve the learning outcomes of a significant number of students in an online class by using these same simple techniques.

Introduction

The proliferation of e-education courses offered by colleges and universities over the past decade has stimulated considerable academic research concerning how to best conduct a class in a virtual setting (Garrison and Cleveland-Innes, 2005; Frass and Washington, 2017; Martin, Ritzhaupt, Kumar and Budhrani, 2019). Much of this research stresses the importance of the instructor being present (Rodgers and Raider-Roth, 2006). Teachers achieve presence in an online environment by frequently posting announcements about class procedures and assignments, responding promptly to emails, providing timely feedback on assignments, submitting personalized replies to student bulletin board posts, creating videos so students can see/hear their professor, conducting virtual class sessions, and holding e-office hours. These instructor activities, however, depend on student participation. If students do not carefully read announcements and feedback, if they disregard videos, and/or if they do not attend virtual office hours or class sessions, a teacher's impact on the learning experience will be limited.

There is much anecdotal evidence, and some scholarly research (Haider and Frensch, 1996; Juban and Lopez, 2013; Senak, 2014; Kerr and Frese, 2017), suggesting that students do not read or follow instructions. Nearly every teacher has experienced students completely ignoring directions such as 'clearly print your name on the line above.' Whereas ignoring or not reading instructions in a face-to-face (F2F) class may result in some frustration for students, disregarding posted instructions in an online class can be detrimental to a student's success. In F2F classes, printed instructions are often reinforced with verbal directions and students can ask real time questions. In online classes,

however, written instructions are usually the only guidance students are provided. Overlooking printed information can result in a student missing assignment due dates, submitting incorrect work, or incorrectly answering exam questions despite having proper understanding of the material.

The purpose of this study is to investigate the hypothesis that students who do not read and carefully follow instructions on the first assignment in an online class, thus indicating a general tendency to ignore instructor guidance, will experience less learning than students who do adhere to the provided directions for properly completing the first assignment. We also investigate whether a simple change to how instructions are emphasized and delivered alters this relationship. Our study and results have important implications for both instructors and students. If our hypotheses hold true, then instructors teaching online courses need to explore the possibility of using a variety of channels, in addition to written, to provide students with instruction and feedback. In addition, students need to be made aware of the importance of expending the effort to follow instructor guidance to be as successful in their online course as possible.

Literature Review

In F2F classes, students actively engage with their professor whenever the class meets. This physical interaction helps reaffirm to students that their professor is committed to their learning experience (Jaggars, 2014). More specifically, every time the professor shows up to teach a class, the professor demonstrates presence.

Presence is much more difficult to achieve in an online class, especially if the course is asynchronous (Baldwin, 1998; Okojie, Olinzock and Okojie-Boulder, 2006). In such courses, students may not physically see or speak with their professor for the entire course. This disconnect, especially to students who have experienced F2F teaching for most of their lives, can be very disconcerting. Regardless of how much time and effort the professor may devote to the class, students often feel disconnected. They feel like their teacher is absent.

Models for Achieving Presence in Online Teaching

To address the unique nature of online education, several models suggesting a general process to achieve teaching presence have been proposed in the literature. Three such models are: COI, PSMT, and VOCAL. These general models have, in turn, produced specific suggestions for best practices in teaching online courses.

The Community of Inquiry (COI) framework, outlined by Garrison, Anderson and Archer (2000) and Garrison and Cleveland, suggests that effective online instruction requires three types of presence: cognitive presence, social presence, and teaching presence. Cognitive presence is reflected in activities and processes that stimulate high level critical thought, collaboration, and meaningful interaction between students and between professor and student. Social presence motivates students to take responsibility for their own learning. And teaching presence concerns the actual learning experience which involves instructional design, course management, and direct instruction.

Berge (1995) was the first to propose the PSMT model which asserts that instructors are moderators who provide pedagogical, social, managerial, and technical presence to facilitate the online learning process. Pedagogical presence involves teacher-student interactions that focus on key concepts, principles, and skills; social presence creates an inviting environment to promote learning and discourse; managerial presence provides students with specific guidance including timelines, rules, and class procedural policies; and technical presence promotes student confidence in using the learning management system and other software tools employed in the class. A successful online instructor will combine all four roles to assist students to master the subject matter while building an online learning community to support meaningful and active learning.

Savery (2005) argues that online instructors need to achieve VOCAL (visible, organized, compassionate, analytical, and a leader-by-example) presence. Visible presence means that students recognize that their professor actively cares about their progress in the class. Organized presence involves communicating often and clearly through the learning management system about course materials and assignment due dates. Compassionate presence occurs when students experience opportunities for interaction with the instructor and with other students in the class. Analytical presence involves providing clear expectations and guidelines for planned assessments and offering timely feedback on submitted work. And leader-by-example presence requires instructors to model the type of behavior and active participation that they expect from their students.

The common theme in each of these models is that teaching an online course requires a significant amount of work and expertise. An effective online teacher needs to be a 'jack of all trades.' Achieving presence in an online course requires the teacher to create an active online learning community where students remain interested and engaged throughout the entire course. Realizing this lofty goal involves learning how to effectively employ (and in some cases teach students how to use) the online delivery platform, planning every aspect of the course before it begins, preparing for glitches that will happen during the term, being on call essentially 24-7, communicating frequently with students (but not face to face), expressing empathy (remotely), identifying and helping students who begin to fade or lag, and being a near perfect role model in all of these areas. In addition, an online instructor needs to teach the course material in a virtual setting where questions are seldom asked and facial cues (e.g., "I am interested," I am confused," "I am falling asleep") cannot be observed.

Practical Ways to Achieve Teaching Presence

The COI, PSMT, and VOCAL models provide a framework for much of the online teaching and learning research. These models encourage faculty to rethink the different roles and responsibilities they must play in the online teaching and learning paradigm (Thormann, Gable, Fidalgo and Blakeslee, 2013). However, they do not provide teachers with specific practical ways to achieve presence in an online course. Nonetheless, there are many suggestions that can be gleaned from the online education literature, education webpages, teacher blogsites, and personal experience. The following sections highlight some practical advice for achieving and/or improving student perceptions of faculty presence in an online class.

Concerning Technology

Perhaps the single most important fact for all faculty teaching online classes to remember is that technology is secondary to pedagogy (Fahey, 2019; Pune, 2020). A good teacher will be successful even with the most mundane technology or even with no technology at all. At one time, teachers who used nothing more than pencil and paper, were highly effective in promoting student learning. Technology, when properly employed, can make the teaching process more efficient and it may improve student engagement, but it can never be a substitute for quality teaching (Okojie, Olinzock, & Okojie-Boulder, 2006). Therefore, it is important that online teachers spend more time creating sound and effective pedagogy, including both teaching materials and assessment instruments, than they do trying to learn and apply the most recent technology craze.

A related fact to remember is that technology impacting teaching is not new (Baldwin, 1998). Technology has been affecting teaching for decades. Recall, for example, when whiteboard markers replaced chalk, when digital projectors replaced analog projectors, and when spreadsheets replaced paper gradebooks. Regardless of how fast technology is evolving, teachers eventually catch up and adapt to the new standard. Faculty, who may have initially complained when whiteboards started replacing chalkboards, cannot imaging going back to the days when they left the classroom with chalk dust on their clothes (and probably also in their lungs). With time, dedicated teachers will learn how to effectively teach in an online environment.

Seeking Help

It is interesting to note that only one of the three teaching frameworks described in the previous section list technology as a standalone item (the PSMT model includes technical presence). This lack of specific attention does not mean that teaching/learning platforms and associated software used in online teaching are not important. Instead, it is because teachers are not, nor should they be expected to be, technology experts (Rodgers and Raider-Roth, 2006).

Nearly all colleges and universities have centers for teaching excellence that offer instructor training programs. These centers usually employ technology experts who have received specific training on how to use the school's learning management system most effectively. Teachers wishing to get started or those wanting to improve their online technology presence, should seek help from these centers (Frass and Washington, 2017).

In addition to own institution help, there are numerous websites and blogs that discuss using technology to teach. More professionally, there are many teacher conferences. Finally, the best way to learn how to effectively teach online is to take an online course. For many teachers, doing so will most likely be the first time they have ever actually taken a class in an online format (compared to probably over 200 classes taken in their academic lives in a F2F setting). One of the most effective ways to learn how to do something is to observe others doing it (in this case, teaching an online course).

Focusing on the Low Hanging Fruit

The adage it is 'better to be excellent in a few areas than to be mediocre in many' absolutely applies to online teaching. Instead of attempting to do everything at once, there is clear evidence in the literature that a few activities done well provide excellent returns. The ultimate goal of teacher presence is to keep students engaged and active. When students are not required to physically attend class on a regular basis, their interest often wanes (Martin, Ritzhaupt, Kumar and Budhrani, 2019). Three activities that are relatively easy to master yet tend to keep students interested and participating in an online environment are: frequently posting interesting announcements, quickly answering emails, and providing timely and substantial grading feedback.

Announcements are the main way that teachers communicate with students in an online learning environment. Posting regular, interesting, organized announcements is an extremely important and effective engagement strategy (Martin and Bolliger, 2018). However, in addition to merely providing information (i.e., listing activities and assignments for the week), teachers can use announcements to express empathy (e.g., convey awareness of challenges students may be experiencing), demonstrate expertise in the field (e.g., summarize a recent news story related to class material), and provide motivational encouragement (e.g., insert inspirational quotes at the beginning of all announcements). Sitzman and Leners (2006) find that online students who view their teacher as being empathetic, knowledgeable, and encouraging are more likely to be satisfied with their learning experience.

Whereas announcements are the most efficient way for instructors to communicate with students, email is the most important method of communication from student to faculty. Because students rely on email to ask questions and clarify assignments, they expect quick replies. Chang, Hurst and McLean (2016) reported that of the 227 students they surveyed, 91% expected a 24-hour hour turnaround time for e-mail correspondence with faculty. Of this group, nearly half (46%) indicated that they expected a reply from their instructors within hours. Heiman (2008) reported that students who receive rapid email responses from their online instructors perceived greater social support and experienced a higher rate of academic success. McDonald (2020), citing a Learning House, Inc. analysis of student learning management system (LMS) activity, notes that students are most active in online coursework on Sunday evenings between 4 p.m. and 11 p.m., and Thursday evenings between 6 p.m. and 11 p.m. These results suggest that faculty should watch for, and quickly respond to, emails received during these periods. When faculty quickly respond to emails, especially when the email is sent during non-normal business hours, students feel important. Such an emotional

reaction can encourage them to engage more fully in the course.

Assignment feedback is particularly important in an online class. It is incredibly frustrating for students to receive a less than perfect grade without a clear and specific explanation for the mark. Students also expect a rapid turnaround on grading in an online course. In F2F classes, students usually expect to receive their graded work the next class period. That is, the fixed class period defines the expectation. Because online classes usually do not have specific day/time periods, with each passing day, students wonder why they have not yet received a grade and feedback. Dahalan, Hasan, Hassan, Zakaria, and Wan Mohd Noor (2013) note that prompt instructor feedback promotes student motivation and overall satisfaction with the course and with the learning experience. Leibold and Schwarz (2015) argue that it is essential for instructors to provide timely, frequent, individualized, detailed, specific, and balanced feedback. In a comprehensive study examining 12 different facilitation strategies commonly used by online instructors, Martin, Wang and Sadaf (2018) find that rapidly answering questions and providing timely feedback on assignments were rated by students as the two most important ways for teachers to establish presence in an online class.

A few additional, though slightly more challenging, ways to improve teacher presence in an online course include using online bulletin boards, creating videos, conducting occasional synchronous Q&A sessions, and scheduling regular virtual office hours. Bulletin boards, when properly conducted, can promote collaboration, reduce isolation, and help students connect with one another (Mohamad and Shaharuddin, 2014). A "get to know your professor" video where an instructor shares their teaching philosophy can create an initial favorable impression. First impressions are very powerful to keep students engaged over the long semester (Knight, 2016). Offering to hold a few synchronous Q&A sessions on a day/time that is convenient to the majority in the class (e.g., Saturday morning or Sunday evening) will generate a significant amount of goodwill in student minds. Similarly, holding regular e-office hours where a professor guarantees a near immediate email response, will meet one on one via WebEx, Zoom, etc., or is available on the phone can promote a sense that the professor really "cares about us" among students (Li and Pitts, 2009). And the more that students perceive that their instructor cares about their learning and about their success, the more they will engage in the class and the more they will learn (Kemp and Grieve, 2014).

The Other Side of the Equation

The practical ways to achieve teaching presence discussed above represent one side of a two-sided contract. When faculty agree to teach a class, they enter into an agreement to do their best to help students learn the course subject matter. The other side of that contract involves students who sign up for the class. Granted, the school pays the faculty member's salary and collects tuition from students, but the school is merely an intermediary. The two parties who participate in the contract are the teacher and the students.

Similar to how online teaching differs significantly from F2F teaching, taking an online class is considerably different from taking a F2F class. To fulfill their side of the contract, students are also required to use different skills. Online education is essentially guided self-learning (Song and Hill, 2007). In this setting, the learner must assume greater responsibility. More specifically, instead of being told what they must understand in F2F class lectures or by what is emphasized in class discussions, students must actively participate in all virtual activities (e.g., carefully view videos, thoughtfully contribute to discussion boards, ask questions) and read all course material (e.g., all assigned text or other readings, announcements, feedback, emails).

Unfortunately, many students lack practice in using these skills. In terms of reading course materials, Kerr and Frese (2017) note that only 20 to 30 percent of the undergraduate students they surveyed completed all required reading assignments in their class. Juban and Lopez (2013) found that over 53 percent of the students in their survey claimed to have read the course textbook only twice per month, with over 40 percent saying that they only read before exams. In a survey of 2,039

student from over 150 different universities, Senack (2014) reports that 65% of students said that they had decided against buying a textbook because it was too expensive. It appears that instead of reading to learn on their own, F2F students often rely on their professor to tell them in class lectures what they need to know to pass the exam. Such a process will not work in an online, guided self-learning environment.

There is also much evidence that students do not read or learn from faculty supplied feedback. Crisp (2007) conducted a study of the impact of feedback on students who wrote two essays six weeks apart. Feedback on the first essay provided specific suggestions for making improvements. Yet, for over 66 percent of students, the grade on the second essay was essentially the same as the score they received on the first essay. Even worse, for more than 17 percent of the class, the score on the second essay was significantly worse than the score earned on the first essay. Only 16 percent of the class showed substantial improvement. Sinclair and Cleland (2007) find that high-achievers and highly motivated students are more active in seeking and receiving feedback, but low-achievers rarely look for, and often completely ignore, feedback. Thus, those who need feedback the most are the least likely to read and learn from feedback provided by their instructor.

With regards to reading instructions, most faculty have experienced students completely ignoring written directions. As an experiment, the author of this paper gave a 10-question multiple choice quiz to 136 students. The third sentence in the 5 sentence directions for the quiz read: "If you circle multiple choice answer "a" for every question on this quiz, regardless of the correct answer, you will receive a score of 100." Only 58 students (less than 43 percent) circled "a" for every question. When the instruction was pointed out to students, most said "I did not see that sentence when I took the quiz."

Although it is tempting to frown upon such behavior, for decades psychologists have recognized such conduct as being completely normal. Haider and Frensch (1996) propose that learning to ignore elements of a task that appear to be unrelated to accomplishing the task is a skill. That is, in the process of repeating a similar task multiple times, people learn to separate task-relevant from task-redundant information. They then tune out what is irrelevant to complete the task more efficiently.

Applied to education, by the time a student is mid-way through college, that student has most likely seen over 170 syllabuses and has viewed instructions on over 3,000 exams/quizzes/assignments. At some point, ignoring what is most likely a repeat of what the student has seen perhaps hundreds of times before is efficient. Besides, in a F2F class, if the instructions are important enough the instructor will most likely verbally repeat the instructions in class or student murmurs (absolute silence was required in the author experiment noted above) might indicate that something is amiss and perhaps more attention should be paid to the written instructions.

Because no such indicators happen in an online class, ignoring announcements, glossing over assignment instructions, and not reading emails could have a detrimental impact on student learning outcomes. This possibility is reinforced by Oppenheimer, Meyvis and Davidenko (2009) who conducted an experiment similar to the author quiz experiment mentioned above but instead they compared how well instructions were followed for a pen and paper assignment versus a computer version of the same assignment. Their results indicate that individuals are almost twice as likely to miss key instructions on a computer screen versus a paper test. Applying this result to online education, students are more likely to ignore written announcements and instructions posted on the class LMS than they are to ignore the same information provided on an assignment physically handed out in a F2F class.

Purpose of this Study

In this study, we empirically investigate whether ignoring very detailed, precise instructions on a first assignment in an online class might predict, all else constant, lower student learning outcomes. Then, we examine whether two simple changes made to how announcements and instructions are

made in the class might alter this relationship. Specifically, the research questions examined in this study are:

1. Is there a significant number of students who do not follow instructions in an online class?
2. Does not following instructions on the first assignment in an online class suggest that a student will experience, all else constant, lower learning outcomes.
3. If an instructor in an online class specifically focuses on making students aware of the importance of reading announcements and following instructions and if the instructor provides these items in both audio as well as in written format, can the results observed for question 2 be mitigated?

Methodology and Data

The data summarized in Table 1 was collected for students who took an online, undergraduate course in corporate finance in the spring and fall semesters of 2018 and for the same semesters in 2019. The data is compiled into two groups. GROUP ONE is comprised off all students who took the course in 2018 and GROUP TWO represents all students who took the class in 2019. For example, the average GPA of all 258 students who took the course in the spring and fall of 2018 is 3.11 and the average GPA of all 263 students who took the course in the spring and fall of 2019 is 3.13.

For the first week, all aspects of the course were conducted exactly the same in all four semesters. During this first week, students completed an online exercise for which they were provided very detailed written instructions. The exercise required students to follow several important steps and then to report a final result via an online quiz. The only way to achieve a correct final result was to properly follow all instructions. Thus, an incorrect answer on the quiz indicated that the student did not carefully read and follow the assignment instructions (indicated by the variable: “Did Not Follow Instructions”).

For all subsequent weeks, the courses were conducted in exactly the same manner except that for GROUP TWO (following the first assignment):

1. The instructor stressed to students, multiple times throughout the semester, the importance of carefully reading and paying attention to course announcements and assignment instructions,
2. The instructor delivered all future course announcements and instructions in audio (simply a recording of the written material), as well as in printed, format.

The same instructor taught all four classes. That instructor has been teaching online courses for over 15 years and this specific class employs all the best practices in online education that are outlined in this paper. Every part of the course was conducted online except for the final exam, which all students took each semester on the same day at the same time in a F2F setting (i.e., in a classroom on campus). This comprehensive, timed final exam was very carefully proctored. Score on the final exam is used to indicate student learning outcomes. Specifically, the higher the grade on the final exam, the more a student learned in the class, and vice versa.

Table 1: Descriptive Statistics of All Collected Data

	GROUP ONE N = 258			GROUP TWO N = 263	
Variable	**Mean**	**St. Dev.**		**Mean**	**St. Dev.**
Did Not Follow Instructions (= 0)	20.1%	n.a.[1]		19.9%	n.a.[1]
Final Exam Grade	68.8%*	10.3		70.7%*	9.7
GPA (maximum = 4.5)	3.11	0.42		3.13	0.42
Accounting Pretest	76.4%	14.9		76.6%	15
Math Pretest	65.4%	19.9		65.2%	19.3
# Previous Online Courses	3.9	3.0		4.1	3.2
Effort (scale of 1 to 10)	7.5	2.3		7.7	1.8
Hours Worked (per week)	22.9	13.5		22.0	13.4
Age	27.5	6.6		27.7	7.0
Semester Course Load	12.4	3.7		12.5	3.7
Satisfaction (scale of 1 to 10)	7.4	2.4		7.6	2.5
Perceived Success (scale of 1 to 10)	8.8	1.9		8.7	1.8
Fin/Acct Major (Yes = 1)	30.2%	n.a.[1]		31.6%	n.a.[1]
Gender (Female = 1)	60.9%	n.a.[1]		59.3%	n.a.[1]

* Difference in means is statistically different than 0 at the 1% level.

[1] Standard deviation is not applicable (n.a.) for 0,1 variables.

The variables listed in Table 1 (other than Did Not Follow Instructions) correspond with Bredthauer and Fendler (2016). GPA, gender, age, semester course load, and declared major were provided to the author by the school Registrar. Accounting pretest and math pretest are the scores that students earned on an online multiple choice accounting review quiz and an online basic math quiz taken during the first week of the online class (the same week that students completed the "follow instructions" quiz). The number of previous online courses taken, hours worked per week in a job, and data used to construct a variable representing the overall amount of work students put into the online course (Effort), a measure of student overall contentment with the course and the instructor (Satisfaction), and a measure of how well students believed that the course and the instructor contributed to their learning (Perceived Success) was collected from an end of course survey.
The three most important observations of the data in Table 1 are that:

1. In response to research question 1, approximately one out of every five students in each group (20.1% and 19.9%) did not follow the instructions on the first assignment in the class.
2. The average grade on the final exam for GROUP TWO was significantly higher than the average grade on the final exam for GROUP ONE. That is, the overall learning outcomes were significantly better for the group that were repeatedly told to pay attention to announcements and instructions and provided these in both audio and printed format.
3. The average number of online courses previously taken by this group is relatively small (approximately 4). In fact, for nearly 25 percent of the students in this study, this course was the first 100 percent online course they had ever taken; the largest number of online courses any student had previously taken in this sample was 15. Thus, online learning is a completely new or relatively new concept to many of the students in this study.

To determine whether a student not following instructions on the first course assignment did in fact indicate a tendency to ignore or overlook instructor provided announcements and instruction throughout the entire course which in turn impacted overall learning outcomes, an OLS regression was performed using the GROUP ONE data. These regression results are presented in Table 2.

Table 2: GROUP ONE OLS Regression

$$Final\ Exam\ Grade_i = \beta_0 + \beta_1 GPA_i + \beta_2 DNFI_i + \beta_3 GEN_i + \beta_4 APT_i + \beta_4 MPT_i + \beta_5 POLC_i + \beta_6 EFF_i + \beta_7 HW_i + \beta_8 AGE_i + \beta_9 SCL_i + \beta_{10} FIAC_i + \beta_1 SAT_i + \beta_1 PS_i + \varepsilon_i$$

Variable	Coefficient	t-Stat
Constant	45.044	7.915
GPA	8.199[a]	5.598
Did Not Follow Instructions (DNFI)	-4.227[a]	-3.100
Gender (GEN)	-2.373[b]	-2.098
Accounting Pretest (APT)	0.084[b]	1.994
Math Pretest (MPT)	0.091[a]	3.241
# Previous Online Courses (POLC)	-0.009	-0.500
Effort (EFF)	-0.320	-1.359
Hours Worked (HW)	-0.081[b]	-1.982
Age (AGE)	0.220	0.236
Semester Course Load (SCL)	-0.240	-1.508
Fin/Acct Major (FIAC)	3.999[a]	3.363
Satisfaction (SAT)	0.019	1.466
Perceived Success (PS)	0.034[a]	2.994
[a] Significant at .01 level; [b]Significant at .05 level; [c]Significant at .10 level		
Regression Statistics		
R Square	0.3606	
Adjusted R Square	0.3265	
Standard Error	8.4584	
Number of Observations	258	

Similar to many other studies, GPA is highly significant in a positive direction. Likewise, the better a student did on the accounting pretest and on the math pretest, the more successful they were in the class. These relationships are to be expected since finance and accounting are closely related, and finance is a math heavy subject. Females and those students who worked many hours performed worse in the class. Those who had declared finance or accounting as their major did better on the final exam and those who perceived they would be successful in the class were correct.

The most interesting finding in the regression, however, concerns the "Did Not Follow Instructions" variable. The highly significant, negative coefficient for this variable suggests that students who did not follow instructions on the first assignment in the class experienced, all else constant, lower learning outcomes.

To further test the importance of students following instructions in an online class, the same regression was run for GROUP TWO. These regression results are presented in Table 3. For this regression, all of the same variables are significant in the same direction. However, the "Did Not Follow Instructions" variable is no longer significant.

Table 3: GROUP TWO OLS Regression

$$Final\ Exam\ Grade_i = \beta_0 + \beta_1 GPA_i + \beta_2 DNFI_i + \beta_3 GEN_i + \beta_4 APT_i + \beta_4 MPT_i + \beta_5 POLC_i + \beta_6 EFF_i + \beta_7 HW_i + \beta_8 AGE_i + \beta_9 SCL_i + \beta_{10} FIAC_i + \beta_1 SAT_i + \beta_1 PS_i + \varepsilon_i$$

Variable	Coefficient	t-Stat
Constant	48.147	8.843
GPA	9.511[a]	6.881
Did Not Follow Instructions (DNFI)	-1.094	-0.881
Gender (GEN)	-1.716[c]	-1.673
Accounting Pretest (APT)	0.086[b]	2.197
Math Pretest (MPT)	0.077[a]	2.858
# Previous Online Courses (POLC)	-0.087	-0.521
Effort (EFF)	-0.273	-1.254
Hours Worked (HW)	-0.059	-1.525
Age (AGE)	-0.066	-0.851
Semester Course Load (SCL)	-0.153	-1.061
Fin/Acct Major (FIAC)	3.297[a]	3.059
Satisfaction (SAT)	0.024[b]	1.999
Perceived Success (PS)	0.020[c]	1.859
[a] Significant at .01 level; [b]Significant at .05 level; [c]Significant at .10 level		
Regression Statistics		
R Square	0.3651	
Adjusted R Square	0.3319	
Standard Error	7.8932	
Number of Observations	263	

The implication of "Did Not Follow Instructions" no longer being significant is that the repeated stressing of the importance that students need to read announcements and instructions and/or providing these communications in audio as well as printed format had a profound impact on these student's participation in the class, and thus improved their learning outcomes.

Discussion

The purpose of this study was to investigate the following three research questions:

1. Is there a significant number of students who do not follow instructions in an online class?
2. Does not following instructions on the first assignment in an online class suggest that a student will experience, all else constant, lower learning outcomes.
3. If an instructor in an online class specifically focuses on making students aware of the importance of reading announcements and following instructions and if the instructor provides these items in both audio as well as written format, can the results observed for question 2 be mitigated?

As shown in Table 1, approximately 20 percent of the students in this study did not follow the detailed, carefully crafted instructions provided to them in written form to correctly complete the first assignment in the class. The fact that one out of every five students failed to read the instructions on a first week assignment when they are expected to be more excited, less stressed out, and trying to leave a good impression on their instructor, is indeed significant. The answer to question 1 is yes.

The regression presented in Table 2 shows that "Did Not Follow Instructions" significantly, negatively influences performance on the comprehensive final exam, which is used as a proxy for overall learning outcomes. On average, this one item alone, all else constant, reduced a student's score on the final exam by 4.3 points. Thus, the answer to question 2 is yes.

And, as shown in Table 3, the fact that "Did Not Follow Instructions" is no longer significant after students are told of the importance of following instructions and all future course communication is provided in audio as well as printed form, suggests that the answer to question 3 is also yes. Therefore, online teachers are strongly encouraged to use these techniques in their classes.

It would be interesting to more carefully investigate the characteristics of the "Did Not Follow Instructions" group. Are they more likely to be male or female, new or veterans to online education, younger or older, etc.? That will be the subject of future research.

Conclusions

The education literature encourages teachers in online classes to be present. The most basic way to achieve presence in an online class is to frequently post announcements and to provide clear assignment instructions to students. In most online courses, these communications are provided in written form and faculty often take for granted that students are carefully reading them. However, as suggested by the results presented in this study, a fairly large number of students (one out of every five) may be ignoring or glossing over this important information. As a result, these students may not be learning as much as possible in the course. Two low-cost solutions to this problem may be for the instructor to (1) stress to students that not reading instructor provided information may negatively impact their performance in the class and (2) provide all such materials in audio as well as in printed format.

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