Building Rapport to Improve Retention and Success in Online Classes

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ABSTRACT

As the prevalence of online education continues to grow, so do concerns about student success. Online students tend to withdraw more often and earn lower grades, compared to students in traditional classrooms. Explanations for this disparity range from student characteristics to institutional shortcomings to course design. Attempts to counter this trend are often resource intensive and yield mixed results. I hypothesize that the difficulty of establishing student–instructor rapport in online classes contributes to lower student success. Without rapport, students are less likely to remember and prioritize online classes. Thus, improving rapport with online students may lead to improvements in student success. To test this hypothesis, I implemented rapport-building teaching strategies—including video updates, personal e-mails, and personalized electronic comments on assignments—in some online classes (student $n = 143$) and compared student outcomes in those classes to online classes taught without rapport-building strategies (student $n = 322$). Difference of means tests, logit models, and OLS regression models all show significantly lower attrition and significantly higher grades in the rapport-building courses. Qualitative student comments identify the high-rapport relationship with the instructor as a key factor in student success. Thus, rapport building represents a simple, instructor-driven intervention that can significantly improve online retention and grades.

Online education is increasingly part of the higher education picture in the United States. A recent study found that one third of all higher education students take at least one online class and nearly 70% of institutions of higher education report that online education is critical to their long-term strategy (Allen and Seaman 2014, 3–4). Even with 7.1 million online higher education students enrolled nationwide (Allen and Seaman 2014), online education still faces challenges. One of the most serious is retention.

Significantly fewer students persist in online courses, a problem common across disciplines and universities (Carr-Chellman and Duchastel 2000; Levy 2007; McLaren 2004; Tello 2007). Although there is no systematic, national study of online attrition rates (Angelino, Williams, and Natvig 2007), single-campus studies usually place the online retention rate between 10% and 35% lower than the in-person retention rate (e.g., Dutton, Dutton, and Perry 2001; Patterson and McFadden 2009; Stover 2005; Terry 2001). I teach at the University of Arkansas at Little Rock, a metropolitan school in the American South with a Doctoral/Research Intensive Carnegie classification. The University of Arkansas

at Little Rock (UALR) has a diverse student population with about 50% nontraditional students, along with many first-generation college students and Pell grant recipients. My own online classes have a significantly ($p < .1$) lower retention rate than my in-person classes. For my online classes, the rate of students earning Ds, Fs, or withdrawing from the course completely is 42.9% ($n = 322$), compared to 30.4% for my in-person classes ($n = 125$).[1] As is the case for many universities, this problem is common in my department and college.[2] On my own campus and across institutions of higher education, these high attrition rates are concerning not only because they represent students who are not being educated but also because states are increasingly allocating higher education funding based on performance indicators such as course completion and time to degree (National Conference of State Legislatures [NCSL] 2015).

There are many explanations for lower retention rates in online classes. While a number of these factors are almost certainly at work in any given case, I hypothesize that the online format makes building instructor–student rapport difficult and leads to students disconnecting, doing poorly, and even dropping the class entirely. Thus, it may be possible to improve online retention simply by improving rapport. I test this idea through a rapport-building teaching experiment involving 465 online students over 6 years. I evaluate the macroeffect of the rapport strategy by comparing outcomes from the rapport and nonrapport sections. I also add in student-level data from 6 years of teaching Introduction to Political Science in person to model student success and retention. The data reveal that rapport has a strong, significant, and consistently positive effect.

Success and the online student

Why are students who take online classes not as successful as students who take in-person classes? There are three general explanations in the literature (Lee and Choi 2011): student characteristics, environmental factors, and course and instructor features.

The first category of explanations focuses on student characteristics. Some studies indicate that demographic characteristics, like age (Cochran et al. 2014; Horn 1998; Murtaugh, Burns, and Schuster 1999; Patterson and McFadden 2009), gender (Willging and Johnson 2009), or ethnicity (Ke and Kwak 2013; Stratton, O'Toole, and Wetzel 2007; Willging and Johnson 2009), can influence online course success. There are reasons to believe that demographics might matter for online student success; for instance, older students may be intimidated by technology and less able to navigate an online class (Xenos, Pierrakeas, and Pintelas 2002). But the data on demographics are mixed. In some cases, older students do worse (Park and Choi 2009), but in others they do better (Neuhauser 2002; Wojciechowski and Palmer 2005). Sometimes men are more successful online (Kramarae 2001) and sometimes women are (Willging and Johnson 2009). In some studies, nonwhite students are less likely to complete online courses (Porta-Merida 2009), but, in others, ethnicity has no effect on attrition (Patterson and McFadden 2009). But while demographics present a mixed picture, one consistently important student characteristic is academic preparedness.

Online classes can be challenging and students who are looking for an "easy class" may find online classes more difficult than they expected (Clark-Ibáñez and Scott 2008), particularly if they do not have much experience with online education (Arbaugh 2008; Terry 2001). Studies also indicate that self-motivated, self-regulated, and independent learners

tend to do better in online classes (Bell and Akroyd 2006; Blocher et al. 2002; Diaz 2002; Diaz and Cartnal 1999). In addition to motivation (Waschull 2005), study skills, time commitment, and goal setting also matter for online student success (Schrum and Hong 2002).

One of the most predictive measures of online course performance is student GPA. Unsurprisingly, students who have higher GPAs are more likely to succeed in online classes (Dupin-Bryant 2004; Morris, Finnegan, and Wu 2005; Osborn 2001). Students also tend to develop better study skills and time management skills as they progress through college (Nash 2005). Thus, students who have more online course experience, and students who have more college experience in general (Cochran et al. 2014; Diaz 2002; Dupin-Bryant 2004; Gibson and Graff 1992; Moskal and Dziuban 2001; Thompson 1998), are more likely to be successful in an online class.

With mixed results in terms of demographics, the student characteristic perspective has generally attributed low retention and success rates in online classes to students lacking the skills needed to succeed in an online environment (Boston et al. 2014; Lee and Choi 2013). This has led some scholars to suggest that one approach to reducing attrition would be to restrict enrollment to exclude risky students—perhaps students with low GPAs or little college experience—from online courses (Cochran et al. 2014). This could significantly hurt online enrollment for some universities and make higher education more difficult for some students, as risky students may be the ones most in need of online classes in order to complete their degrees.

The second explanation for online course attrition focuses on the environment within which students function, most importantly, their personal situations (Perry et al. 2008). We know that the student population in online classes is significantly different from in-person classes (Diaz 2002; Frydenberg 2007),[3] including in terms of life circumstances and concerns about family, childcare, and finances—often cited as reasons for online attrition (Martinez 2003). Online students are older than traditional students (Xenos, Pierrakeas, and Pintelas 2002) and are more likely to have work and family obligations and to experience life events that can disrupt coursework (Frydenberg 2007; Tello 2007), like the birth of a child or the death of a parent. Research shows that many students take online classes for the flexibility (Moskal and Dziuban 2001), often because they are juggling classes, work, and family (Kramarae 2001; McEwen 2001); perhaps not coincidentally, online students are also more likely to be women (Kearsley 2002). Online students likely deal with significant time pressures and potentially complicating personal situations (Park and Choi 2009). Thus, the environmental explanation places the blame for higher online attrition not so much with students' abilities but with students' life circumstances.

The third explanation for low retention and success rates focuses on course design and instructor–student interaction. Scholars of online education emphasize the importance of good course design to engage students in learning, to create learning communities, and to provide learner support (Angelino, Williams, and Natvig 2007). Research indicates that the more students participate in an online course—for instance, through posting on discussion boards—the more likely they are to be successful (Morris, Finnegan, and Wu 2005; Tello 2007). This link is especially strong for students with low GPAs (B. M. Wilson, Pollock, and Hamann 2007). The way instructors design their courses can impact these behaviors. Additionally, structural, institutional support—like advising, orientation, and redundant communication—can also impact online student success (Ali and Leeds 2009; Clay, Rowland, and Packard 2008).

Both student–student interaction and student–faculty interaction are critical for engaging students (Dixson 2012; Swan 2002). Of Chickering and Gamson's (1987) classic seven principles for good practice in undergraduate education, five relate directly to interaction among faculty and students (contact between students and faculty, reciprocity and cooperation among students, prompt feedback, emphasis on time on task, communication of high expectations). However, student–faculty interaction has the greater influence on perceived learning (Marks, Sibley, and Arbaugh 2005) and engagement (Grandzol and Grandzol 2006). Thus, some scholars have suggested that the difference in retention rates between online and in-person classes is due to the lack of contact between faculty and students (Betts 2009; Boling et al. 2012). Scholars have even found a significant difference in students' sense of community in blended verses entirely face-to-face courses (Roscoe 2012).

Online classes are—by definition—physically isolating, so fostering interaction and engagement can be a challenge. Students tend to drop courses when they feel isolated (Angelino, Williams, and Natvig 2007; Dyrud 2000), but one way to offset that isolation is through positive course interactions with the instructor, which can be a major influence on student success in online courses (Arbaugh 2008; Eom, Wen, and Ashill 2006; Marks, Sibley, and Arbaugh 2005), predicting both satisfaction and persistence (Croxton 2014).

Despite some promising findings, the research on how instructor–student interaction might improve online student success is far from conclusive. Some studies find no significant relationship between faculty participation and course completion rates (Cochran et al. 2014; Grandzol and Grandzol 2010; Leeds et al. 2013). In fact, some even conclude that "efforts to include extensive faculty feedback and interaction in online courses (Bocchi, Eastman, and Swift 2004) may actually be counterproductive" (Grandzol and Grandzol 2010, 10). In 2007, Angelino, Williams, and Natvig conducted an extensive review of the online retention literature and made four best practice recommendations: encouraging student integration and engagement (Tinto 1975), for instance, through faculty phone calls and precourse orientations; developing a learner-centered approach (Anderson 2008); building learning communities where students support each other; and providing online student services. In a 2013 study, Leeds et al. implemented all the best practices outlined by Angelino, Williams, and Natvig (2007). Although the study included a number of resource-intensive interventions, Leeds et al. (2013) found no significant improvement in retention. Similarly, Tirrell (2009) examined online community college instructors and found that those who used Chickering and Gamson's (1987) seven principles for good practice in undergraduate education, including instructor–student contact, did not have lower attrition rates.

What can individual faculty members do about lower levels of student success in online classes? Students' life circumstances sometimes make course completion difficult. We cannot find our students reliable child care, help them tend to a sick parent or negotiate a living wage. Institutional barriers to success are also often out of our purview. We do not make decisions about financial aid, rarely arrange course schedules and do not work in student services. Of the three explanations for student attrition discussed above, only course design and interaction is within the scope of an instructor's influence.

Although the research on instructor interaction with online students seems promising, there are no clear directives for how instructors can improve interaction with students— even widely accepted best practices do not have consistent success. What can individual faculty members can do to improve student success in online classes? I hypothesize that

building rapport with online students can significantly improve student success. If our students feel like they know us and we know them as individual human beings—not just words on a computer screen—they are more likely to succeed in online classes. The full picture of online student retention certainly includes factors from all three of the categories described above, but building rapport is something faculty members have control over and can implement right away to improve their online retention rates and to assist their most vulnerable students.

Improving faculty–student rapport

Classroom rapport is defined as harmonious interactions between faculty and students (Bernieri 1988): Problems are resolved amicably, ideas are exchanged respectfully, and discussions are carried out professionally. A high-rapport relationship is one of mutual understanding and satisfactory communication (Carey, Hamilton, and Shanklin 1986). Still, a fairly new concept in education (Frisby and Martin 2010)—and especially in online education—rapport has a strong association with positive student outcomes (Benson et al. 2005; Grantiz, Koernig, and Harich 2009). Additionally, J. H. Wilson, Ryan, and Pugh (2010) find that student–instructor rapport for in-person classes has added explanatory power above measures of immediacy, like professor friendliness, and nonverbal behaviors, like eye contact. Thus, rapport's contribution to student success does not come through just being a "nice" professor.

How can instructors build rapport with their online students? Although rapport is almost by definition dyadic and mutual (Altman 1990; Tickle-Degnen and Rosenthal 1990), when it comes to the online classroom, a lot of the responsibility for creating a high-rapport environment rests on the instructor (Murphy and Rodríguez-Manzanares 2012). Instructors build rapport in the classroom by being "present" and participating in the class (Arbaugh and Hwang 2006; Nippard and Murphy 2007; Shea, Sau Li, and Pickett 2006). Instructor presence has a positive impact on student learning and motivation in online classes (Baker 2010; Liu, Gomez, and Yen 2009; Russo and Benson 2005; Tu 2002); some even describe it as humanizing the sometimes sterile electronic environment (Gustafson and Gibbs 2000).

The rapport literature has a number of suggestions for improving classroom rapport (e.g., Baker and Taylor 2012). Some of these overlap with the best practices described in the retention literature, like Angelino, Williams, and Natvig's (2007) recommendation for faculty phone calls to students. One reason why I think these strategies have not been consistently successful is because they are sometimes treated as one-shot interventions; after the initial phone call, the instructor never again reaches out to the student. Thus, a critically important element of my approach is that rapport building is ongoing. Whereas other treatments focus on faculty–student contact at the beginning of the course (e.g., Leeds et al. 2013), rapport-building efforts in my online classes are continuous from the first week of class to just before grades are turned in. Building rapport is really about building relationships—and that is not done in a single shot.

Similarly, rapport building should not be a superficial effort. Grandzol and Grandzol (2010) measure faculty–student interaction in online courses through the amount of time faculty spend on different areas of the online teaching platform. They find no significant relationship between faculty interaction and course completion rates, likely because faculty

interaction measured as time could be superficial and not a rapport-building interaction. Grandzol and Grandzol (2010) argue that extensive faculty feedback and interaction can be counterproductive. I would agree that extensive feedback from a distant instructor that a student does not have a relationship with may actually push that student away. But building rapport with students, on the other hand, can be a very productive endeavor.

In my teaching experiment, I sought to consistently build rapport in three main ways: humanizing the instructor, providing detailed and student-specific feedback on assignments, and making personal contact with the students. First, I try to build rapport by presenting myself as a friendly and accessible professor. I regularly use video (Brinthaupt et al. 2011), including a welcome video on the first day of class and video updates at the beginning of each week. These videos contain content about what to expect that week and what assignments are due and also provide commentary on current events. I post links to YouTube videos with political music to match each week's topic and I also use humor and satire (something I do in all of my classes, not just the rapport-building sections) to make course content more interesting and engaging (Glazier 2014) and to make me more approachable (LoSchiavo and Shatz 2005).

Second, I attempt to build rapport with students by providing extensive, personalized feedback on assignments (Eom, Wen, and Ashill 2006). This feedback is an opportunity to let students know that they are capable of doing the work and that I am willing to help them if they need it (Brinthaupt et al. 2011). I use Adobe Acrobat Pro to write in red pen on electronic student assignments and to leave personalized comments throughout. Gallien and Oomen-Early (2008) found that personalized assignment feedback increases student achievement in a course, but collective feedback does not, so these personalized comments are an important rapport-building element. I also provided feedback through a regular presence on the discussion boards (Brinthaupt et al. 2011), posting at least three times a week and calling students by name in my responses to their posts.

Finally, I try to build rapport with students through personal e-mail contact. I send a personal e-mail to each student at the beginning of the week that he or she has a major assignment due. I also send a personal e-mail to each student in Week 4 and Week 13 (in a 15-week semester), addressing their progress, providing praise for success, and offering help. In the final week of the class, I send e-mails to all students who have assignments still outstanding, providing them with one more opportunity to turn in their coursework.[4]

Methods

I test the effect of rapport building in Introduction to Political Science, an introductory course that fulfills a core requirement at my university. Less than 10% of the students enrolled in the course are political science majors and the average student is an early junior[5] with a GPA of 2.5 (about 80% or a B-). This course thus represents a hard test of rapport's impact because, given the University of Arkansas at Little Rock's student population and the introductory nature of the class, the enrolled students are likely to have academic preparedness and personal situations that exert downward pressure on their success. Although I always use a number of best practices in teaching this class—including extensive discussions (Morris, Finnegan, and Wu 2005; Tello 2007), student discussion leadership, and community building through ice breakers and collaborative assignments (Anderson 2008; Richardson and Swan 2003)—I have historically had much lower retention in my online courses.

I implemented the rapport-building measures in six Introduction to Political Science online classes taught during a 3-year period from fall 2013 to summer 2015 (student $n = 143$). Students in these classes were taught using the rapport-building techniques discussed above and also completed a survey (respondent $n = 93$). During this same time, I also taught three Introduction to Political Science classes without the rapport-building measures (student $n = 88$) and the students in these classes also completed the same survey (respondent $n = 38$). The analysis that follows includes data from these surveys and students, as well as data from other, nonrapport online classes taught before fall 2013 (total nonrapport student $n = 322$). Additionally, I use individual-level data from students in traditional, in-person Introduction to Political Science classes from 2009–2015 (student $n = 125$). Thus, out of a total of 590 students in the analyses that follow, 465 took the class online and 143 received the rapport treatment.

The students in the rapport and the nonrapport sections were assigned the same textbooks, completed the same assignments and read the same lectures. Students in both conditions completed a policy-relevant research paper, led a class discussion and completed a midterm and final exam. The only differences were in the extent of my interactions with the students in the rapport condition. Students in the nonrapport condition did not receive e-mail reminders about assignments, video messages, personalized assignment feedback through Adobe, or any of the other rapport-building strategies described above. Table 1 presents descriptive statistics comparing the rapport and nonrapport groups. The only significant difference is that the students who received the rapport treatment are a few years younger, on average, than those who did not.

The two most important dependent variables for evaluating the success of online students are the attrition rate and the overall course grade. I operationalize attrition using a measure called the DFW rate—that is, the proportion of a given class that earns a D, an F, or withdraws (Moskal and Dziuban 2001). Completing the course with a grade of C or better may seem a fairly low bar, but it provides a standard that can be easily evaluated across courses, instructors, and universities.[6] In the analysis that follows, the binary dependent variable DFW is coded 1 if the student earned a D, an F, or withdrew and 0 otherwise. Logit models are used for this analysis. Another way to look at student success is through final course grades. Thus, in another model, I use the final course grade (out of 100) as the dependent variable (Baugher Varanelli Weisbord and Andrew 2003; Syler et al. 2006). Because of the near-continuous nature of this dependent variable, ordinary least squares (OLS) regression models are used.

Open-ended, qualitative comments from student surveys are coded with a binary variable to indicate whether or not they contained each of the following: a positive comment about

Table 1. Descriptive statistics of students enrolled in the online rapport and nonrapport sections of Introduction to Political Science.

	Rapport Sections	Nonrapport Sections
GPA	2.61	2.54
Year in College (Senior = 4)	2.69	2.87
Gender (Male = 1)	0.44	0.47
Race (Nonwhite = 1)	0.30	0.28
Age**	27.68	32.48
Transfer (=1)	0.68	0.77
n	143	322

$**p < .05$.

the instructor, a negative comment about the instructor, a positive comment about the course, a negative comment about the course, and a comment about rapport/the relationship with the instructor. Thus, it is possible for any given comment to contain both positive and negative elements. For instance, the comment, "I thought the class was too much work. But when I set my mind to it the class passed by really fast. I really enjoyed the content and the structure provided by Dr. Glazier" (anonymous post-survey student comment, summer 2015) was coded 1 for a positive comment about the instructor, 0 for a negative comment about the instructor, 1 for a positive comment about the course, 1 for a negative comment about the course, and 0 for a comment about rapport. The comment, "I think this class was awesome. I appreciate you taking the time to really break things down via video and I thought the music picked out was a refreshing addition that no other professors have done" (anonymous post-survey student comment, spring 2015) was coded 1 for a positive comment about the instructor, 0 for a negative comment about the instructor, 1 for a positive comment about the course, 0 for a negative comment about the course, and 1 for a comment about rapport, because of the mention of the videos and the music.

Results

Does rapport-building have an impact on student success? The simplest comparison is between the DFW rate of those online courses taught with rapport-building techniques and those taught without them. The overall DFW rate for all students in nonrapport sections is 42.9%, compared to 29.4% for the rapport sections. A difference of means t test shows that this 13.5% difference is statistically significant ($p < .05$) and indicates that employing rapport-building teaching techniques in a course can lower the number of students who earn a D, an F, or withdraw from that class. Recall that the DFW rate for my in-person classes is 30.4%, so the rapport treatment essentially eliminates the higher online attrition rate and brings the DFW rate back down to in-person levels, where rapport is more likely to develop spontaneously. These results are displayed in Table 2, which also presents the comparison of final course grades. Students in the rapport sections score an average of 7 points higher on their final course grade than students in the nonrapport sections ($p < .1$).

How does rapport building compare to other influences on student success? Multivariate analysis can reveal some of the complexities. Table 3 displays the results of a logit model run using individual-level data collected from all online (rapport and nonrapport) as well as in-person students.[7] In this model, the binary measure DFW is the dependent variable. The independent variables in this model include demographic variables for age,[8] gender, and ethnicity (white or nonwhite), as well as education variables for class in college (sophomore, junior, etc.), GPA, whether the class was taken online, whether the student was a transfer student, and whether the class was in the rapport-building condition.[9] The

Table 2. Comparing DFW rates and average course grades in rapport and nonrapport online sections of Introduction to Political Science.

	All Nonrapport Sections	All Rapport Sections	Difference
DFW Rate**	42.9%	29.4%	13.5%
Course Grade*	55.23	62.77	7.54
Student n	322	143	

Note. Grades are out of 100.
*$p < .1$. **$p < .05$.

Table 3. Logit model of DFW rate.

Independent Variables	Coefficient (Standard Errors)
Male*	−0.656 (0.301)
Nonwhite	0.070 (0.307)
Year in College	0.121 (0.153)
Age	0.006 (0.017)
Year**	0.354 (0.118)
Transfer	−0.556 (0.350)
GPA**	−2.693 (0.297)
Online	0.399 (0.406)
Rapport**	−1.748 (0.477)
Constant	−718.524 (240.679)
$n = 443$	Pseudo $R^2 = .4090$

Note. Total student $N = 590$ but is reduced in the analysis here to 443 due to listwise deletion as a result of missing data. The majority of these deleted cases (129/147) are due to missing data on the binary nonwhite variable. Running the model without this variable yields an n of 572 and no change in the significant variables, except male moves to borderline significance ($p = .056$).
*$p < .05$. **$p < .01$.

data for the analysis were collected over a 6-year period from 2009 to 2015. The independent variable for year in the model is coded 1 for 2009, 2 for 2010, and so on.[10]

The results reveal four statistically significant variables: Men and students with higher GPAs are less likely to be DFW students. Students who took the class more recently are actually more likely to be categorized DFW, meaning that perhaps the course is getting harder or, more likely, that the student population is changing over time in ways not captured by the variables in the model.[11] Most importantly, the model results show that the students in the rapport condition are significantly less likely to earn a D, F, or W. The results of this analysis support the hypothesis that rapport-building efforts can significantly improve online course retention.[12]

What does the effect of rapport look like in context? We can interpret the coefficients in the logit model through predicted probabilities (King et al. 2001; King, Tomz, and Wittenberg 2000), which are displayed graphically in Figure 1.

The average student in this sample is a 31-year-old white male transfer student with a 2.5 GPA—about a B-. He is taking the course online right in the middle of the study period—the spring of 2012. If this hypothetical student is enrolled in a nonrapport section of Introduction to Political Science, the model reports he has a 17.25% chance of earning a D, an F, or a W for the course. Holding everything else constant and moving this hypothetical student to the rapport condition, the chance of being in the DFW category drops to 3.79%, a significant change of 13.46%. We can calculate similar predicted probabilities for a female student, holding all other variables—age, GPA, etc.—at the same values of central tendency. The DFW rate for a hypothetical average female student in this scenario drops from 28.39% to 6.94% with the move to the rapport condition, a significant change of 21.45%. Women appear to respond even more positively than men to the rapport condition and the retention gap between men and women in the predicted probabilities narrows from 11 points to only 3 when rapport-building strategies are used.

Finally, predicted probabilities can provide some insight into how students with a low GPA—the most at-risk students in the course—might respond to the rapport treatment. Holding all other variables constant and returning to using a hypothetical male student, I adjust the GPA down from 2.5 to 1.75, a C- average GPA, which puts the hypothetical
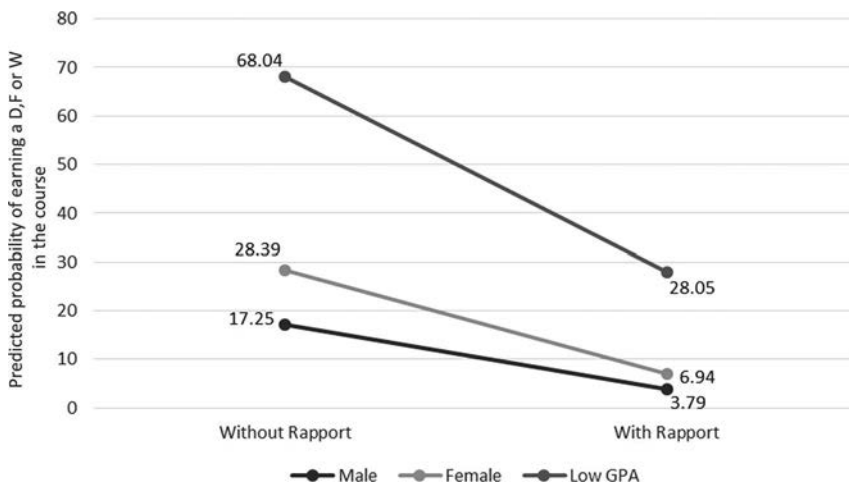
Figure 1. Predicted DFW rates for three hypothetical students with and without rapport. *Note.* Predicted probabilities were calculated using Clarify. The hypothetical individual is a 31-year-old white transfer student with junior standing taking the course online in the spring of 2012. The male and female hypothetical students have a 2.5 GPA. The low-GPA student is a male with a GPA of 1.75.

student right on the cusp of DFW status. Without the rapport treatment, the model predicts that this student would earn a D, F, or W 68.04% of the time. He is probably going to fail. With rapport, however, his chance of failing drops a significant and amazing 40%, to 28.05%. This hypothetical scenario demonstrates just how impactful rapport building can be for the most vulnerable students. Instead of excluding them from online classes because of their at-risk status, we can reach out to these students and greatly improve their chances of success.

We see a similarly positive impact of rapport in the regression model that takes the final course grade as its dependent variable. The model specifications are otherwise the same as for the logit model: The independent variables are gender, age, ethnicity, year in college, transfer status, GPA, year the course was taken, whether the course was taken online, and whether the student was in the rapport condition. As Table 4 presents, the three significant variables in this model are taking the course online, GPA, and rapport.[13]

In terms of the magnitude of the effect, GPA is far and away the strongest, positively impacting the final course grade. Both being in the rapport condition and taking the class online have a 6-point effect, but in opposite directions. Essentially, taking the online course in the rapport condition offsets the negative impact of taking the course online. On average, students who take the class in the online rapport condition will earn a grade equivalent to what they would have earned by taking the class in person, thus neutralizing the negative effect of the online medium on course grades.

Student survey data

How did the students view the instructor's rapport-building efforts? In order to more confidently attribute changes in the dependent variables to the rapport treatment, it is helpful to know how the treatment was perceived. An anonymous survey was electronically distributed to students in six rapport and two nonrapport sections of Introduction to

Table 4. Regression model of final course grade.

Independent Variables	Coefficient (Standard Errors)
Male	1.926 (1.896)
Nonwhite	−3.127 (2.128)
Year in College	−1.536 (0.941)
Age	−0.063 (0.112)
Year	−1.102 (0.760)
Transfer	1.473 (2.200)
GPA**	18.915 (1.159)
Online*	−6.837 (2.580)
Rapport*	6.819 (3.089)
Constant	2368.83 (1535.308)
$n = 443$	Pseudo $R^2 = .4223$

Note. Total student $N = 590$ but is reduced in the analysis here to 443 due to listwise deletion as a result of missing data. The majority of these deleted cases (129/147) are due to missing data on the binary nonwhite variable. Running the model without this variable yields an n of 572 and no change in the significant variables—only rapport, online, and GPA are significant.
*$p < .05$. **$p < .01$.

Political Science between summer 2013 and summer 2015. A total of 93 surveys were returned from the rapport sections (out of a possible 143, a 65% response rate) and 38 were returned from the nonrapport sections (out of a possible 88, a 43.2% response rate).[14] Questions in the survey were adapted from questions designed to measure instructor–student rapport in face-to-face classes (J. H. Wilson, Ryan, and Pugh 2010). There are two summary measures of particular interest for assessing rapport: instructor accessibility and instructor engagement. The data from these and other measures discussed below are presented in Table 5.

The measure of instructor accessibility was constructed by combining six measures, each of which is an agreement with a statement about an instructor accessibility characteristic (e.g., "I feel uncomfortable letting my professor know I need help" and "My professor cares about students"), measured on a 1–5 Likert scale. A full description of the summary measures presented in Table 5 is available in the appendix.[15] The mean instructor accessibility score from the rapport students is 26.7, significantly higher than the nonrapport student score of 24.7. A measure of instructor engagement was created by combining agreement

Table 5. Comparison of student survey results across rapport and nonrapport online sections of Introduction to Political Science.

	Nonrapport	Rapport
Quantitative Survey Questions		
Mean Instructor Accessibility Score*	24.7	26.7
Mean Instructor Engagement Score*	42	46.3
Mean Instructor Positivity Score*	27.3	29.7
Mean Course Rating	7.3	8.03
Qualitative Survey Comments		
Positive Comments re: Instructor**	6.3%	54.0%
Negative Comments re: Instructor	0	0
Positive Comments re: Course	56.3%	65.5%
Negative Comments re: Course	26.3%	17.2%
Rapport Comments**	9.38%	41.3%
Student n	38	93
Response Rate	43.2%	65.0%

*$p < .05$. **$p < .01$.

with 10 measures, such as "My professor checks up on students regularly" and "My professor does not view this course as a high priority." The mean instructor engagement score from rapport students is 46.3, significantly higher than the nonrapport student score of 42. Thus, students in the rapport condition were significantly more likely to view the instructor as accessible and engaged, exactly the message the rapport-building measures were meant to communicate. Seven survey measures about how well the instructor did in the class were combined into a single measure of positive feelings towards the instructor. As displayed in Table 5, the mean instructor positivity score for rapport students is a significant 2.4 points higher than for nonrapport students.

The survey also contained questions about the course. Scores for Likert agreement with two statements about the course—"I have felt more involved or engaged in this class than in other courses I've taken" and "I feel I have learned much less from this class compared to other online classes I have had in the past"—were combined into a single course-rating measure. The difference in the course score between student respondents from the nonrapport section (7.3) and student respondents from the rapport section (8.03) is not statistically significant. This supports the idea that the effect is not coming from course content, but from how the students perceive the instructor.

Qualitative student feedback

Students also had the opportunity to leave comments in response to an open-ended question on the survey. These comments are coded as described in the methods section above, using binary variables to indicate whether the comment was positive regarding the instructor, negative regarding the instructor, positive regarding the course, negative regarding the course, and mentioned rapport or a rapport-building course component. Table 5 displays the results, including a significantly higher percentage of positive comments about the instructor made by students from the rapport sections. There is no significant difference, however, in terms of either the positive or the negative comments made about the course overall. This again reinforces the idea that the effect of the rapport comes from the relationship with the instructor and not the content or the quality of the course. Not surprisingly, a significantly greater percentage of students in the rapport condition mentioned the relationship with the instructor or the rapport-building components of the course.

As displayed in Table 5, 39 students (about 41%) included something about rapport in their comments. Of these, 33 mentioned a specific tactic or professor behavior by name (e.g., videos, e-mail contact, enthusiastic professor). Professor characteristics were the most commonly mentioned, with professor engagement in the course ($n = 12$), responsiveness to students ($n = 8$), and enthusiasm ($n = 5$) being the most popular characteristics cited. The most commonly mentioned specific course component was the discussions ($n = 8$), including instructor participation in discussions ($n = 3$) and the fact that discussions were friendly and not negative ($n = 2$). The next most commonly mentioned course component was the videos ($n = 6$). While concrete rapport tactics, like the videos and the e-mail updates, are mentioned by some students, it appears that the overall rapport effect is greater than the sum of its parts—students more often mention the less concrete feeling that the professor was active, engaged, enthusiastic, responsive, and cared about them. I would venture that the e-mail contact and discussion posts did the most to contribute to this atmosphere, but the current experimental design cannot tease out the effects of any single rapport-building tactic.

The qualitative comments can, however, provide some insight into how students respond to the rapport treatment. The comments indicate that rapport works because the students feel like the instructor knows them and cares about whether or not they do well. This motivates students to work harder in the course (as seen in the following student comment: "I think the teacher was great. She showed that she really wanted us to succeed in the class, which made me want to work harder" (anonymous post-survey student comment, spring 2015)) and creates guilt when they don't (as illustrated by the following student comment: "When I missed an assignment I feel like I let myself and my teacher down" (anonymous post-survey student comment, fall 2014)). Rapport makes students feel comfortable asking for help if a difficult situation arises (e.g., the student comment that "I appreciate that anytime I asked for your help you responded quickly and helped me when I asked!" (anonymous post-survey student comment, spring 2015)) and feel like their success matters (e.g., the student comment that "The professor was involved and was here to help the students. This was an important part of my success in this class. I wish that all my classes were taught like this" (anonymous post-survey student comment, spring 2014)). Students notice a difference when a course is taught with rapport-building measures. Both the qualitative and quantitative data support the idea that the rapport treatment is noticed by the students and has an effect on their success.

Conclusion

Both qualitative and quantitative data strongly support the hypothesis that rapport building by the instructor can improve student success as measured by course grades and retention rates. The students in the rapport condition feel like the instructor is engaged and accessible, and this perception translates into measurably better outcomes for students. Although rapport cannot change students' level of preparedness or the personal life circumstances that may prove challenging in any given semester, rapport just may help students cope with those challenges. The data clearly show that rapport helps them to be more successful.

The results presented here are promising but contain data drawn only from political science classes at a single metropolitan university. Would the same rapport-building techniques be effective in online math or biology courses? Might students at research extensive universities or community colleges respond differently to rapport building? It is possible that other instructors may find rapport more challenging to build. The next step in understanding the conditions under which rapport can improve online retention and success is expanding the study of it to other instructors, student populations, and disciplines. While this study was conducted at only one university, it is a university that theoretically should (and empirically does) face many problems with retaining online students. The online students at the University of Arkansas at Little Rock often have both individual characteristics and life circumstances working against them. Yet, rapport still makes a difference in spite of—or perhaps because of—these conditions. At institutions where fewer online students have these risk factors, the effect of rapport building may be different.

In addition to consistent and measurable improvements in student success, employing rapport building may be useful for reasons beyond student grades and retention. One student commented, "I didn't want to continue political science classes until Dr. Glazier got me very interested. I highly recommend her, and I really want to take her other classes in the future" (anonymous post-survey student comment, spring 2015). In an educational environment where budgets are determined by student enrollment, it may be worth the effort

to build rapport in order to win over majors and students. Additionally, with rapport building, faculty may even find the online teaching experience more rewarding (Betts 2009). Online rapport does not come easily, but putting administrative support and resources behind the effort (Travis and Rutherford 2012) seems like a worthwhile investment.

The gap between online and in-person retention and achievement can be discouraging. Students face many challenges in pursuing their degrees and, most of the time, instructors cannot do much to help students with those challenges. Rapport building provides an instructor-driven method to improve online student retention—one that appears to be especially effective at helping our most at-risk students. Rapport building leads to significant improvements in student success, without additional budget requests, policy revisions, or any committee meetings at all. While the factors that contribute to online student success are complex, rapport building is one method instructors can adopt right away to see a real impact in their online classrooms.

Notes

1. Similarly, another measure of student success—the average course grade—also shows a significant difference ($p < .05$): The average course grade for in-person students was 68.6 compared to 55.2 for online students.
2. For the political science department in the fall of 2013, online retention was 5% lower than in-person retention. Other departments in our college fared even worse: for psychology classes, the rate of students earning Ds, Fs, or withdrawing was 17% higher in online courses (39%) compared to in-person courses (22%).
3. Some research even indicates that if students are randomly assigned to either face-to-face or online classes, the aggregate student outcomes will be the same (Waschull 2001). The differences in student success measures only appear when students self-select into online classes, further evidence of the distinctiveness of the online student population.
4. It may be the case that e-mails do not need to be personal to be effective. Huett et al. (2008) sent mass motivational e-mails to online students and found some potential for improving retention and motivation.
5. Perhaps a result of some students putting off the course until later in their undergraduate education.
6. Some scholars argue that the decision to drop is the right one for some students and online students are more mature and better able to make that tough decision—thus leading to lower retention rates (Diaz 2002; Mehrotra and McGahey 2012). If students are rightly withdrawing from online classes, than fewer of them should be earning Ds and Fs, assuming they would have earned a D or F if they had not withdrawn, a fair assumption that may not hold in every case.
7. The total N for this student population is 590, but listwise deletion due to missing data leaves 443 students in the analysis reported in Tables 3 and 4. The majority of these deleted cases (129/147) are due to missing data on race, which was coded white/nonwhite based on university ID photos. As a check, the models presented in Tables 3 and 4 were also run without the nonwhite control variable and the results were substantively the same: Rapport remains significant in all cases. Better data on race could reveal that race is also a significant predictor of final course grades and/or DFW, but it is not near significance in the models presented in Table 3 ($p = .81$) or Table 4 ($p = .14$). The consistent significance of rapport—with or without the nonwhite control—indicates that the finding is not an anomaly.
8. In this model, age is included as a continuous independent variable. Another way to account for age is to code it as a binary variable to distinguish traditional (24 and younger) from nontraditional (25 and older) students. The average age of the students in the sample here is 31. An additional way to account for age is to code it as binary variable to distinguish those who are the average age and younger from those who are older than the average age. Models were run with all three age variable specifications and none were significant.

9. As political science majors make up less than 10% of the students enrolled in Introduction to Political Science, the binary variable for major status is not included in these models, although other models find it to be an insignificant variable that does not affect the results. Controls for the semester were similarly insignificant, although the dummy variable for summer was borderline significant ($p = .051$) for the DFW logit model only. Even in this case, it did not change the substantive results.
10. The models were also run with a fixed-effect dummy variables for each year, but none were significant nor changed the substantive findings.
11. One explanation is that this effect is due to the introduction of the Arkansas Lottery Scholarship in 2011, which expanded the pool of students attending college in Arkansas, altering the student body in ways not accounted for in the available data. For instance, more students may be first-generation college students. Another explanation might be the improving economy over time, which may have led some students to choose employment over the class.
12. This analysis was also run for only online students ($n = 332$) and only two variables were significant predictors of DFW status: GPA and rapport.
13. In a model that includes only online students ($n = 322$), GPA is the only significant predictor of final course grade.
14. The survey response rate for the rapport condition is about 22% higher than the response rate for the nonrapport condition. This may very likely be due in part to the rapport treatment. Students who feel they have a relationship with the instructor may be more likely to respond to a survey request.
15. The table in the appendix also indicates which individual variables are significantly different between the rapport and nonrapport sections.

Acknowledgments

Contributor

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Appendix A: Student survey question wording

Variable Name	Question Wording	Descriptive Statistics
Instructor Accessibility	My professor wants to make a difference. I feel uncomfortable letting my professor know I need help. My professor is not friendly.* My professor is approachable.** My professor cares about students.** My professor is not helpful.	Theoretical range: 6–30 Actual range: 16–30 Mean = 26.16 SD = 3.22
Instructor Engagement	My professor participates in discussions on the discussion board and/or in the chat room.** My professor effectively monitored students' understanding of subject matter through questions and support.** My professor reads all discussion board posts.* My professor will spend extra time going over a concept if students need it.* My professor thoroughly reads my work.** My professor grades assignments in a timely manner.* I received useful feedback from the instructor on tests and class assignments.** My professor complains about his/her workload as an excuse for mistakes or delays.* My professor checks up on students regularly.** My professor does not view this course as a high priority.*	Theoretical range: 10–50 Actual range: 29–50 Mean = 45.27 SD = 5.01
Instructor Positivity	My performance in this course was directly related to the positive learning environment created by the professor. I would be willing to take another online class taught by this professor. I would be willing to take a traditional (in-person) class taught by this professor. My professor is a role model.** My professor enjoys his or her job.* My professor is enthusiastic.** How easy is it to follow the lectures in your class? (1–4, Difficult to Very Easy)	Theoretical range: 7–34 Actual range: 18–34 Mean = 29.28 SD = 2.68
Course Rating	I have felt more involved or engaged in this class than in other courses I've taken. I feel I have learned much less from this class compared to other online classes I have had in the past.	Theoretical range: 2–10 Actual range: 5–10 Mean = 7.85 SD = 1.64

Note. All responses are agreement with the statement on a 1–5 Likert scale from strongly disagree to strongly agree, unless otherwise noted. Responses are reverse coded as appropriate for analysis.

*$p < .1$. **$p < .05$ in comparing the difference in mean survey responses between the rapport and nonrapport conditions.