Kindness at First Sight: The Role of Syllabi in Impression Formation

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Authors note

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Abstract

Strong faculty-student relationships are an important predictor of student retention and success in higher education. Faculty often work to establish these relationships by developing rapport with students in the classroom, but minimal research has been done on whether syllabus design and language can affect these relationships. The goal of Experiment 1 was to examine whether the use of a more visual syllabus design or more welcoming syllabus language could affect students' perceptions of their instructors or knowledge of the syllabus content. Overall, neither visual formatting nor language had a significant impact on perceptions of the syllabus or scores on quizzes about the syllabus. However, participants who viewed the syllabi with a more visual design rated the hypothetical professor as kinder, more creative, and more approachable than those who viewed syllabi with a less visual design. Experiment 2 used a heat mapping technique to determine which elements of the syllabus students were responding to when forming their impressions.

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Obtaining a college degree has been associated with a number of benefits. In addition to increases in long-term earning potential (i.e., college degree-earners are projected to make an average of \$420,000 more over a lifetime than those with only a high-school degree, Avery & Turner, 2012), college degree earners experience improved mental and physical health, an enhanced sense of control, and lower mortality rates (Hummer and Lariscy, 2011; Mirowsky and Ross, 2003; Schnittker, 2004). Despite these documented advantages, college completion rates remain relatively low in the United States. For example, Shapiro and colleagues (2017) found that only 61.3% of students who entered a four-year public institution in the fall of 2011 successfully completed a degree within six years. While the numbers are slightly higher for students at four-year private, non-profit institutions (73.7%), they are much lower for those at four-year private, for-profit institutions (33.3%). The picture is similar for two-year public institutions. Only 29.8% of students completed a two-year degree (with an additional 7.7% going on to complete a four-year degree elsewhere). Overall, Shapiro et al. (2017) found that the national six-year degree completion rate for the incoming class of 2011 was only 56.9%. Converging research has documented the societal costs associated with these trends. The low retention rates that undermined degree completion generate additional negative consequences (e.g., defaults on student loans, U.S. Department of Education, 2018; Hillman, 2014) and exacerbated race-based inequalities (Huelsenman, 2015; Steinbaum & Vaghul, 2016),

In an effort to address these issues, an abundance of research has examined the factors that improve student success and retention. That work has identified several critical variables, including: the impact of a student's motivation (Fong, Davis, Kim, Won Kim, Marriott, & Kim, 2016); peers/family support (Hart, 2012); number of campus friendships (Bronkema & Bowman,

2017); and number of hours worked per week (Logan, Hughes, & Logan, 2015). Unfortunately, institutions of higher education have little to no control over many of these variables. One factor they can potentially affect, and one that has emerged as an important predictor of student persistence/success, is the strength of the faculty-student relationship. Faculty “immediacy behaviors”, such as smiling at students and praising their contributions, positively impact students’ perceptions of their own learning (Christensen & Menzel, 1998). Likewise, impressions of a faculty member’s “helpfulness” have been linked to students’ satisfaction with their education and progress toward their intellectual goals (Endo & Harpel, 1982). Additional faculty behaviors that strengthen relationship-building, such as being approachable, being supportive of student needs, and being responsive in communication, reduce the likelihood that a student will consider leaving their university prematurely (Lundquist, Spalding, & Landrum, 2002). Turner and Thompson (2014) found that 70% of students who opted to return for their sophomore year reported having developed an interactive faculty-student relationship during their first year, compared to only 50% of students who left the same university after their freshman year. The importance of strong faculty-student relationships may be particularly critical for students who are marginalized. Lundberg and Schreiner (2004) found that the quality of faculty-student relationships was the first or second strongest predictor of learning for Native American, Hispanic, Asian/Pacific Islander, and Black students, but only the third strongest predictor for White students. Likewise, Rowan-Kenyon et al. (2017) found that low-income students had 1.6 times higher odds of persisting into their second year when they met with faculty frequently.

Creating strong faculty-student relationships, however, can be challenging. Many of the faculty behaviors shown to be important for building rapport (e.g., smiling at students, acknowledging their contributions) are heavily dependent upon direct personal interaction. Such

exchanges may be reduced by certain teaching conditions (e.g., multiple course assignments, large class sizes, online teaching arrangements). Under such conditions, faculty may need alternative strategies for connecting with their students. The goal of the current study was to examine one such alternative. Specifically, we examined whether specific aspects of syllabus design (i.e., visual layout, use of welcoming language) could positively impact students' initial perceptions of a hypothetical course and its instructor, thus setting the stage for a strong student/faculty relationship.

Although the importance of the first day of class has long been acknowledged (e.g., Brooks, 1985), students are often introduced to the course and instructor through the syllabus, perhaps even before meeting in class for the first time. As such, this document may play an important role in students' initial impressions of both. Research shows that early exchanges and information sharing are crucial to how we form impressions about people and things (e.g., Park, 1986; Anderson & Barrios, 1961), and that these early impressions can bias future information processing (Walker Naylor, 2007). Despite this possibility, the syllabus is often treated as a mere document for specifying aspects of the course (e.g., grading scales, deadlines, academic regulations). In fact, much of the research on syllabus design has focused on “what” should be included in the syllabus, rather than on “how” that information should be communicated (e.g., Stowell, Addison, & Clay, 2018; Waggoner Denton & Veloso, 2018; Slattery & Carlson, 2005; Matejka & Kurke, 1994). That focus has, in turn, affected syllabus design. As just one example, Habenek (2005) reviewed 25 course syllabus and found that only 3 were designed in a manner that intentionally conveyed the instructor's enthusiasm for the course content.

Studies examining syllabus design suggest, however, that the “how” is as important as the “what”. Research on wording show that making a syllabus more “learner focused” (e.g.,

framing the course as a partnership between instructor and students, instead of a hierarchy) as opposed to “content focused”, improve student ratings of instructor warmth (Harnish & Bridges, 2011), approachability (Ishiyama & Hartlaub, 2002), and caring/enthusiasm (Richmond et al., 2016) and indicators of behavioral warmth have been shown to predict student learning (Christensen & Menzel, 1998). Beyond affecting how students perceive their instructor, additional research suggests that even small changes in wording affect student behavior (i.e., how likely students are to engage with their instructors). For example, Perrine and Lisle (1995) found that including explicit offers to help students outside of class increased the likelihood that students sought out such help. Collectively, these studies suggest that syllabus content and construction have the potential to impact students’ initial impression of their instructors and facilitate engagement in behaviors that strengthen faculty-student relationships and enhance academic success.

Although previous work suggests that syllabus wording has positive effects on student perceptions and behavior, limited research has examined the potential impact of visual formatting. Visual communication (i.e., conveying of information in a visual format) has been recommended as a strategy for improving scientific literacy among the general public. In keeping with this view, a few publications have endorsed the use of non-traditional, visual course syllabi (e.g., Biktimirov & Nilson, 2003; Sauer & Calimeris, 2012; Moosavian, 2017) and provided guidelines for the creation of such documents (i.e., explaining the types of changes that can be made and how these changes may be implemented). Few, however, have empirically tested the effects of these design choices. As a rare exception, Harrington and Gabert-Quillen (2015) examined whether the use of images in a syllabus affected student perceptions of the course and instructor. Although they found no effects, their manipulation may not have been sufficiently

strong, as the images used in this study were not part of a completely modified design strategy (i.e., the two versions of the syllabus tested in this study were fundamentally the same, with the only change being the addition of images to one version). The potential effect of visual communication is strengthened by the work of Mocek (2017), who examined whether a more visual syllabus addendum (i.e., distributed in addition to a traditional text syllabus) enhanced students' retention of syllabus information over multiple time points. In this study, participants were enrolled in different sections of the same class, taught by a single instructor. The results showed that participants who received the more visual addendum retained more information at ten weeks, but not at three weeks (Mocek, 2017). This mixed outcome may have been affected by two aspects of this study. First, its small sample size ($n = 25$ in the control group) may have limited statistical power. Second, implementing the experimental manipulation in an actual classroom likely reduced experimental control and increased the risk of confounding and extraneous variables (e.g., contagion of the manipulation across conditions).

The goal of the present study was to extend the research on syllabus design in four important ways. First, we simultaneously tested the effects of syllabus wording (Less Welcoming, More Welcoming) and formatting (Less Visual, More Visual) across four experimental conditions. Building on the work of Harrington and Gabert-Quillen (2015), these changes represented comprehensive manipulations that affected multiple aspects of the syllabus' design. In addition, we utilized a user-centered design approach (see Bowler et al., 2011) that emphasized changes most likely to help students at our university. For example, the More Visual syllabus included changes designed to help students more easily navigate the document and digest its contents. A table of contents and visual barriers between sections were added to facilitate students' ability to locate relevant information. A visual display of grading information

made the point allocations for different course elements conspicuous and supported accurate course grade calculations. Highlighting contact information made it more salient and helped to ensure that students were aware the instructor wanted to be contacted outside of class. The More Welcoming syllabus involved changes designed to make the tone of the syllabus inviting and inclusive. Specific changes included reframing the content on course policies (e.g., now calling that section “how we create a learning environment”), explaining what office hours are, and including information on student resources such as food banks. In addition to testing for effects on student impressions of the syllabus and instructor, we built on the work of Mocek (2017) and tested for potential effects on retention of content. Finally, we employed a novel technique (i.e., “heat mapping”) in Experiment 2 to identify the elements of the syllabus redesign students were responding to when forming impressions of the syllabus and/or instructor.

Experiment 1

Method

Participants. Participants were recruited from the Psychology department’s human subjects research pool. The hypothetical syllabi were designed to be for an Introductory Psychology course, so we restricted participation to students who were not currently enrolled in Introductory Psychology to minimize conflict between the experimentally manipulated syllabus used in this study and a student’s current experiences in a class. A total of 488 participants successfully completed the study. However, 22 participants were removed from the data set due to overly poor performance on a question set (see data analysis section for details), leaving 466 participants in the final data set. Participants received extra credit in a psychology class in exchange for their participation. The mean age of participants was 21.8 ($SD = 4.33$). Gender was unbalanced, as is typical in the department, with 81.5% of participants identifying as women,

17% as men, and 1.2% identifying as a gender minority (gender fluid, Two Spirit, etc.). The race/ethnicity of our sample also reflected our general student population, with 69.1% identifying as White/Caucasian, 10.5% identifying as Hispanic/Latinx, 5.4% identifying as Asian, 3% identifying as Black/African American, and 11.6% identifying as another race/ethnicity or two or more of these identities. Based on reports of their parents' educational attainment, 41.6% of participants were classified as first-generation college students.

Procedure. All procedures were deemed exempt from review by Washington State University's Institutional Review Board. Data were collected in Qualtrics (Provo, UT). After giving consent to participate, participants completed the series of demographics questions. They were then randomly assigned into one of four conditions – More Visual / Less Welcoming, Less Visual / More Welcoming, More Visual / Less Welcoming, or Less Visual / More Welcoming. The following instructions were then provided:

“You will now be shown a mock syllabus for an Introductory Psychology class. Imagine you are taking this class and reading the syllabus for the first time. Look through the document thoroughly, taking note of the aspects that you think are important. While there is no maximum time limit on this section, you will be unable to advance to the next page for five minutes to allow you to read the document.”

After at least five minutes, participants were shown a series of questions about the syllabus content. They did not have access to the syllabus during this time. They were then given a second set of questions, this time with access to the syllabus. They had ten minutes to answer these questions. Participants then rated a series of statements with a Likert-scale concerning their perceptions of the professor and the syllabus. Altogether, participants completed four dependent measures of interest: no-access syllabus quiz, full-access syllabus quiz, professor perceptions,

and syllabus perceptions. All questionnaires are available at <https://osf.io/g4q79/> and included as Appendix A.

Materials.

Stimuli. Examples of the visual designs are included in Figure 1 and all syllabi are included as Appendix B and available on the Open Science Framework at <https://osf.io/g4q79/>¹.

University Learning Goals	At the end of the course, you should:	Course Topics That Advance Learning Goals	How is this assessed?
Critical & Creative Thinking	- Be knowledgeable of the key terms, concepts, principles, and prominent theories within psychology	1) Biology of Behavior 2) Learning 3) Memory 4) Cognition	Exams
Diversity	- Be able to explain how biological, psychological, and social variables interact to produce individual differences in behavior - Understand how psychology can be used to address personal, social, and organizational problems	5) Personality 6) Social Behavior 7) Sex, Gender, and Sexuality 8) Psychological Disorders 9) Treatment	Writing Assignment In-class participation
Scientific Literacy	The understanding and ethical application of the statistical analyses and research methods used in psychology.	- Introduced in Research Methods - Embedded within all other later content areas to reinforce their importance.	Exams Writing Assignments
Information Literacy			

Figure 1. The first page of a More Visual syllabus (left) and a Less Visual syllabus (right).

Syllabus quiz questions. The no-access syllabus quiz questions included both multiple choice questions (e.g., What percent of the final grade consists of writing assignments?) and open-ended questions (e.g., What day and time does this course take place?). The full-access

¹ We have also uploaded the More Xisual syllabus templates in a modifiable format on the OSF site. These are licensed CC-BY-SA and can be used/modified by any interested party.

syllabus quiz questions were all open-ended (e.g., How many points are required to get an A in this course?). Information about coding of the open-ended answers can be found in the data analysis section.

Syllabus / Instructor perception questions. The participants rated how kind, knowledgeable, enthusiastic, patient, encouraging, approachable, and creative the professor was (based on Vojtech & Grissett, 2017) on a scale from 1 (very un_____) to 5 (very _____) (e.g., very unkind to very kind). They also rated how likely they would be to take a course with this professor on a scale from 1 (very unlikely) to 5 (very likely). Finally, they rated the syllabus itself on a series of questions such as, “The syllabus was easy to navigate and find the information I needed,” and, “The syllabus clearly describes what students can expect from the professor,” on a scale from 1 (strongly disagree) to 5 (strongly agree).

Data analysis. For open-ended questions, the first-author coded responses as correct or incorrect. Specific information on coding criteria are available with the questionnaires at <https://osf.io/g4q79/> and available as an appendix. While coding, it was clear that some questions were misunderstood by a large majority of participants or were simply too difficult given the study constraints, as indicated by extremely low accuracy (e.g., 12.5%) or a large portion of answers that did not make sense given the questions. This led to the removal of one of the no-access syllabus quiz questions, leaving nine questions for that section, and three of the full-access syllabus quiz questions, leaving seven questions for that section. In addition, participants whose score was a zero on the full-access syllabus quiz questions were removed from the dataset. As these questions were asked while participants had complete access to the syllabus, a score of zero indicates either technical difficulties that did not allow the participant to fully

participate or a lack of attention or motivation. This criterion eliminated 22 participants, leaving 466 participants in the sample.

Each category of questions (no-access syllabus quiz, full-access syllabus quiz, professor perceptions, syllabus perceptions) were subject to a multivariate analysis of covariance (MANCOVA) with Design and Wording as the independent variables. Both ethnic/racial minority status (coded as no if identified as solely White/Caucasian, yes if identified as another ethnicity/race) and first-generation student status (coded as no if either parent earned a bachelor's degree or higher, coded as yes otherwise) were used as covariates given past work showing that the effect of variables like faculty-student relationships can depend upon student background (e.g., Lundberg & Schreiner, 2004). To reduce the risk of a Type 1 error for the MANCOVAs, the critical p-value was reduced using a Bonferroni correction, which lowered the value from 0.05 to 0.0125.

Results

There was no significant Format x Wording interaction, $F(9, 450) = 1.700, p = 0.086$ on no-access syllabus quiz questions. There was additionally no significant main effect of either Format, $F(9, 450) = 1.364, p = 0.202$, or Wording, $F(9, 450) = 0.588, p = 0.807$. The Race/Ethnicity and First Generation covariates were non-significant when included in the analysis and the primary analyses remained non-significant when the covariates were removed from the analysis.

There was no significant Format x Wording interaction, $F(7, 452) = 0.274, p = 0.964$ on full-access syllabus quiz questions. There was no significant main effect of Format, $F(7, 452) = 1.450, p = 0.183$, or Wording, $F(7, 452) = 2.369, p = 0.022$. The Race/Ethnicity and First

Generation covariates were non-significant when included in the analysis and the primary analyses remained non-significant when the covariates were removed from the analysis.

There was no significant Format x Wording interaction, $F(8, 447) = 0.443, p = 0.895$, nor a main effect of Wording, $F(8, 447) = 0.915, p = 0.504$, on the professor perception questions. There was, however, a significant main effect of Format on professor perception questions, $F(8, 447) = 2.974, p = 0.003, \eta_p^2 = 0.051$. Three of the questions were significant in the follow-up univariate analyses – “How kind do you think this professor is?”, $F(1, 454) = 13.399, p < 0.001, \eta_p^2 = 0.029$, “The professor seems approachable”, $F(1, 454) = 13.258, p < 0.001, \eta_p^2 = 0.028$, and, “How creative do you think this professor is?”, $F(1, 454) = 5.846, p = 0.016, \eta_p^2 = 0.013$. All effects were in the direction of more positive perceptions of the professor using the More Visual syllabus. Those in the More Visual design conditions rated the hypothetical professor as more kind ($M = 4.035, SD = 0.915$) than did those in the Less Visual design conditions ($M = 3.704, SD = 1.028$; see figure 2); more approachable ($M = 3.904, SD = 1.044$) than those in the Less Visual condition ($M = 3.526, SD = 1.184$); and more creative ($M = 3.678, SD = 1.033$) than those in the Less Visual condition ($M = 3.439, SD = 1.012$). The Race/Ethnicity and First Generation covariates were non-significant when included in the analysis and the primary analyses remained non-significant when the covariates were removed from the analysis.

Figure 2. The More Visual syllabus caused participants to rate the hypothetical instructor as more kind, creative, and approachable.

There was no significant Format x Wording interaction on syllabus perception questions, $F(8, 446) = 1.727, p = 0.090$. Additionally, there were no significant effects of either Format, $F(8, 446) = 2.134, p = 0.032$, or Wording, $F(8, 446) = 0.477, p = 0.873$. The Race/Ethnicity and First Generation covariates were non-significant when included in the analysis and the primary analyses remained non-significant when the covariates were removed from the analysis.

Experiment 2

Method

Participants. Participants were recruited from the Psychology department's human subjects research pool. Participants were recruited from a different semester than those in

Experiment 1. A total of 454 participants completed Experiment 2. Their mean age was 20.91 ($SD = 3.88$) and 73.5% identified as women, 26% identified as men, and 0.5% identified as a gender minority. A total of 31% of the population identified as an ethnic/racial minority, with 65.5% identifying in the ethnic/racial majority and 3.5% choosing not to respond. A total of 39% of the sample reported being a first-generation college student, with 59% reporting being a continuing-generation college student and 2% reporting that they did not know their status.

Procedure. All procedures were deemed exempt from review by Washington State University's Institutional Review Board. Data were collected in Qualtrics (Provo, UT). After giving consent, participants first completed a task that was unrelated to the study discussed here. They then completed a heat-mapping procedure, whereby they viewed pages from the More Visual / More Welcoming syllabus described in Experiment 1 and were asked to click on the part of the page that made them think most positively about the instructor teaching the course. They then completed a set of basic demographic questions.

Materials. A slightly modified version of the More Visual/More Welcoming syllabus from Experiment 1 was used as a stimulus for this study. This syllabus is included as appendix and available on the Open Science Framework at <https://osf.io/g4q79/>

Results

The heat maps generated from this study are provided below in Figures 3, 4, 5, 6, 7, and 8. The remainder of this section includes qualitative interpretations of these data and take-away lessons that could be applied to syllabi in a variety of psychology courses.

Figure 3. Participants clicked frequently on the first sentence of the course description, “Welcome to the exciting discipline of psychology!” in addition to the later sentence, “The course is also an opportunity to develop sensitivity to, and appreciation for, the beauty and

complexity of human behavior.” Together, these selections suggest students appreciate syllabi which convey a sense of enthusiasm and joy for the topic at hand. Unsurprisingly, students click frequently on the “extra credit” portion of the table of contents. They also appear to like the image used as a header as well as the land acknowledgement.

Figure 3. Page 1 of the syllabus used in Experiment 2.

Figure 4. On this page, the response pattern suggests that students liked the Wording changes, despite there not being a significant effect of Wording in Experiment 1. The most frequently-clicked portions of the page are around the “Best ways to support learning” “for you” / “for me” sections of the syllabus. There are additional hot spots on the sentence “have fun” and “When questions arise that I don’t know the answer to, I will find the answer for the next class period and get back to you” (under best way to support learning for me). Together, these selections suggest students appreciate having a clear articulation of what it will take to be successful in the course, including the behavior of both themselves and their instructor.

Figure 4. Page 2 of the syllabus used in Experiment 2.

Figure 5. On this page, the largest hot spot is on the header “How I can help you succeed.” This also suggests that students appreciate instructors who recognize their role in the success of their students (i.e., that the onus is not solely on the student). The other large hot spot is on the “basic needs” section of the syllabus, which explains how students can find non-academic resources.

Figure 5. Page 3 of the syllabus used in Experiment 2.

Figure 6. The clearest hot spot here is on the visual depiction of the grading information, which participants overwhelmingly report elicits a positive impression of the instructor.

Figure 6. Page 4 of the syllabus used in Experiment 2.

Figure 7. This page provides the least-clear findings. Hot spots are scattered around many aspects of the page, including the exams, attendance, and activities sections. We hypothesize that this occurred because of students' varied preferences for types of assessments, and thus is not particularly useful for this study.

Figure 7. Page 5 of the syllabus used in Experiment 2.

Figure 8. On this page, major hot spots emerge on three areas of the syllabus: quizzes, grade calculations, and the honor code. On the quizzes section, the hot spot is specifically over a portion that reads, "...and you only need to answer at least 2/3rd of the questions correctly to earn the points for the day." This statement did not vary across types of syllabi, so could not have driven the results in Experiment 1. However, in a broader sense, it may suggest that students like having flexibility in their assessments. As with Figure 6, the hot spot over the grade calculations sections suggests that students appreciate easy access to grading information. Finally, and perhaps surprisingly, participants frequently clicked on the student honor code.

Figure 8. Page 6 of the syllabus used in Experiment 2.

General Discussion

Overall, the results of Experiment 1 found that neither wording nor formatting changes influenced performance on either set of syllabus quiz questions, indicating that students were able to remember and find information they needed in a variety of syllabus arrangements. Likewise, these design choices did not affect students' perceptions of the syllabus itself, suggesting there were neither objective (quiz questions) nor subjective (perception questions) differences in the utility of the syllabus designs tested in the present study. Syllabus format did, however, affect the professor perception questions, such that participants who viewed the More Visual versions of the syllabus (regardless of Wording) rated the hypothetical professor as kinder, more creative, and more approachable than those who viewed the Less Visual versions. All other professor perception questions were non-significant.

Experiment 2 provided some insight about the elements of syllabus redesign that offer the greatest potential for influencing students' perceptions of the instructor. While the findings vary somewhat across different sections of the syllabus, the overall patterns suggest a few unifying themes. Namely, participants reported feeling more positively about instructors based on syllabus sections that: 1) expressed enthusiasm for the course content; 2) used headers that provided clear information about behaviors required of students (for success) and behaviors expected of instructors; and 3) clearly and visually explained how students' performance would be assessed and grades would be earned.

Our findings are unique in the relatively small body of work on syllabus design. While Harrington and Gabert-Quillen (2015) found that images did not change perceptions of faculty, we found that a more visual syllabus design enhanced how participants perceived a hypothetical instructor. These two studies differ, however, in their implementation of a more visual syllabus.

Harrington and Gabert-Quillen (2015) added images to an existing format (e.g., a picture of the textbook, an image illustrating a core course concept), but the core design of the syllabus remained the same in both versions of their syllabus. In Experiment 1, we implemented an expanded approach in which images were used to visually convey specific information about the course. That is, design elements were used to denote new sections of the syllabus, draw attention to important information, and make reading easier. It is possible this more comprehensive approach is necessary to engender meaningful changes in students' perceptions of the instructor. Our results also run counter to those from Mocek (2017) who found that the use of a more visual syllabus addendum in a real classroom setting led students to retain more syllabus information. We did not find any changes to retention of syllabus information. However, Mocek's (2017) research was a field study, conducted on students actually taking courses connected to the syllabus that was assessed. Thus, their students were likely exposed to the syllabus repeatedly and more motivated to retain the information. Unfortunately, this also suggests that students with limited exposure to the syllabus (i.e., those who only scan it or only read it once carefully) may not benefit from these design revisions. Instructors wishing to employ these changes may need to incorporate a forced-reading activity, such as a syllabus quiz or syllabus annotation activity, to facilitate the extended exposure that may be necessary to create changes in information retention. Of course, it is also possible that the visually pleasing elements of the More Visual syllabus could encourage engagement with the syllabus (i.e., more students choosing to read it and/or read it more than once), thus indirectly enhancing exposure and retention. That possibility should be empirically tested.

The creation of the more visual syllabus, in addition to the language used in the more welcoming syllabus, was grounded in the concept of user-centered design (see Bowler et al.,

2011), whereby the intended audience of a product (in this case, the syllabus) is in the forefront of all creative decisions. This means that what works for one set of students may not work for others, as the intended user is different. This type of design process is common in fields such as marketing and human factors and has been advocated for in educational domains such as science communication (e.g., Rodríguez Estrada & Davis, 2015). The mock syllabi used in the current studies were designed over several semesters with students at our large, public, land-grant institution in mind. What works for this population of students may need to be modified for other populations. Future research should examine whether the effects found here can be replicated at other institutions, such as those serving more non-traditional students, international students, and those attending two-year colleges.

This point is even more important when ethnic/racial disparities in educational attainment, and the conditions that contribute to them, are considered. While the overall rate of six-year degree completion is 56.9%, the percentages are lower for Black and Hispanic students (39.5% and 48.6%, respectively; Shapiro et al., 2017). In addition, racial/ethnic minority students are more likely, than their white counterparts, to enroll at two-year or open access four-year institutions (Carnevale & Strohl, 2013) and these institutions often have fewer resources for students than more selective institutions. Given these realities, scalable, low cost interventions that strengthen student-faculty connection may be particularly useful for improving the retention of marginalized groups. Though we did not find that ethnic/racial minority status affected the results of our study, this may be due to the relatively low number of ethnic/racial minority participants in our sample ($\approx 30\%$). It may also be because our institution is a four-year, non-open-enrollment institution that performs relatively well on measures relating to the minority achievement gap (i.e., the graduation gap between racial minority and majority students). Thus,

any differences based on racial/ethnic minority status may have been less pronounced in our sample. These hypotheses should be tested in other populations where inequalities, such as differences in high school preparation, are more pronounced.

Relatedly, we did not experimentally test which aspects of the More Visual syllabus led to the increase in professor perception ratings. It is possible that the mere novelty of the More Visual format created these effects and that the specific design elements were non-essential. Although the heat mapping technique used in Experiment 2 provides some insight about which elements of the More Visual syllabus resonated most with participants, additional research is needed to determine the specific components that may or may not contribute to participants' perceptions of the instructor. For example, what would happen if only the grading sections were compared, with and without a visual representation of the grading scale? It would also be beneficial to conduct qualitative testing on the language used in the More Welcoming syllabi. It may be that what we believed was welcoming language was actually unimportant or unclear to participants. The language used in this version of the syllabus arose based on interactions with the specific population of students at our university. It is possible that students with different backgrounds or from different institutions might experience these language choices differently. A further limitation of the present study relates to timing and exposure. For the no-access portion of the syllabus, participants had to spend at least five minutes looking at the syllabus, but there was no maximum limit placed on the amount of time they spent looking. Some participants may have spent a longer period of time and thus were more accurate on the syllabus quiz questions. Future studies should control for this potential problem.

Given the negative personal and societal consequences of low retention rates (e.g., Hillman, 2014), it is critical for institutions of higher education, and those who work there, to

develop interventions that support student success. The literature is unequivocal about the association between positive faculty-student relationships and enhanced student outcomes (e.g., Lundquist, Spalding, & Landrum, 2002; Christensen & Menzel, 1998; Turner and Thompson, 2014; Endo & Harpel, 1982; Rowan-Kenyon et al., 2017; Lundberg and Schreiner, 2004). The findings of the present studies point to specific syllabus design elements as effective, accessible (i.e., low barrier to adoption, limited technical skills required, no cost) and scalable (across a wide range of institutions and teaching arrangements) strategies for creating a foundation for those relationships. To our knowledge, Experiment 1 is the first study to show that a more visual syllabus design can positively affect students' initial impressions of their instructors. Experiment 2 provides further insight into the elements of the syllabus that appear most likely to contribute to those perceptions. While further testing is needed to fully understand the mechanisms of these effects, at a practical level, the syllabus redesign interventions used in here could have far-reaching, positive implications.

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