

A STUDY OF CHANGES IN ONLINE GRADUATE BUSINESS STUDENT PERCEPTIONS OVER A COURSE

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ABSTRACT

Prior research indicates that as students experience more online (OL) courses, their perceptions of the OL environment compared to the face-to-face (FTF) learning environment changes. This study evaluates the perceptual changes for graduate students *over a single course*. Over the semester, graduate student perceptions with respect to difficulty, cheating, and preference changed, while student perceptions of motivation, discipline, self-directed preference, independence, time and cost investment, student-to-student interaction, student-to-instructor interaction, schedule flexibility, happiness and appropriateness of OL education did not. Differences in perceptions between novice and more experienced

learners are explored. These results have implications for both instructors and administrators.

Keywords: student perceptions, online, graduates

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LITERATURE REVIEW

As indicated by a recent Babson Survey, the use of online (OL) education in higher education is on the rise, and many academic administrators believe that OL education learning is the same or superior to those in traditional face-to-face (FTF) classrooms (Allen & Seaman, 2013). Contrastingly, others argue that due to intrinsic differences, learning through OL education does not replicate the learning in the FTF classroom (Bejerano, 2008). With this increase in OL courses, several studies evaluated both student perceptions and student performance in the OL environment (e.g. Allen & Seaman, 2013; Braunscheidel, Fish & Shambu, 2013; Fish, 2015; Fish & Snodgrass, 2014, 2015; Perreault, Waldman, Alexander & Zhao, 2008; Tanner, Noser, and Langford, 2003; Tanner, Noser, Fuselier & Totaro, 2004a; 2004b; Tanner, Noser, Totaro & Birch, 2006; Tanner et al., 2009). Perception and performance results are mixed.

According to theory, the more someone is exposed to and uses a particular method or model, the more adept they become in using it (Dobbs, Waid & del Carmen, 2009; Tanner et al., 2003; Tekinarslan, 2011). Several studies demonstrated differences between students who have taken OL courses and those who have not (Dobbs et al., 2009; Tanner et al., 2003). Students not taking OL courses perceive that faculty have low expectations of OL students, contrary to OL students that perceive instructors as having higher expectations (Dobbs et al., 2009). In a study of business students – regardless of whether the student took or did not take OL courses, students favored FTF courses; however, most OL respondents only took one course (Fish & Snodgrass, 2014). As students take more courses, studies evaluating student's perceptions of

OL courses demonstrate an increasing acceptance of OL as being equal to or better than FTF (Dobbs et al., 2009; Fish & Snodgrass, 2014; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008; Tanner et al., 2003). Using the same survey instrument as a previous study, results indicated that as business students took more courses, their perceptions of the OL environment improved, and their perception that OL courses were more difficult than traditional classes increased (Fish & Snodgrass, 2014). Therefore as shown in many studies (Dobbs et al., 2009; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008), as students experience in the OL environment increases *over time*, their perceptions improve with increasing exposure to the OL environment. Prior research indicates that students need to complete at least 5 OL courses before they perceive that they learn more in the OL environment than FTF (Dobbs et al., 2009). *When does this change in perception occur? Does this change occur as students are taking courses or as they reflect back on courses in-between taking another OL course?* A literature search revealed that no research to date has evaluated the change in business student perceptions of the OL environment *over a single OL course*. *Do students' preconceived perceptions prior to a course continue throughout the course, or do they change significantly? Does their prior experience in OL learning impact upon their perceptions?* These questions are the focus of this study.

Two streams of research in the OL environment exist: student characteristics (such as motivation, discipline and independence) and program characteristics (such as academic rigor or the ease of cheating) (Fish & Snodgrass, 2014). A survey instrument that includes these two streams of research, developed and used in prior studies, will be used in this study (Fish & Snodgrass, 2014, 2015). The previous studies compared undergraduate, graduate students and international students who experienced OL education versus those who did not. The results of previous studies are briefly reviewed here.

Student Characteristics.

In the OL environment, student emotions impact upon a student's ability to learn, and student perceptions should be realistic (Tanner et al., 2009). In FTF classrooms, instructors recognize, react and modify their lessons based upon real-time feedback they receive from the students (Reilly, Gallager-Lepak, & Killion, 2012); however, this feedback does not exist in today's OL environment. Studies that analyze OL and FTF student perceptions are mixed, and results often conflict with other studies. Student characteristics that may impact upon a student's ability to learn include student motivation, discipline, self-directed learning environment, independence, time and cost investment, and preference and happiness in the OL or FTF learning environment. Also, whether a student feels the environment – OL or FTF – is appropriate may impact upon his ability to learn.

Motivation, Discipline, Self-directed, Independence, and Happiness. In general, when students find the material to be relevant and the content interests them, they are more motivated (Adler, Milne & Stablein, 2001). With regard to student motivation and learning environment, results are mixed. Some studies indicate that the OL environment increases critical thinking and work motivation (Larson & Sung, 2009), while other studies indicate that the OL environment offers low motivation for students to learn (Fish & Snodgrass, 2014; Maltby & Whittle, 2000) with retention issues (Abouchdid & Eid, 2004) and low student satisfaction (Muilenburg & Berge, 2005). In our prior study, both OL students and FTF students (who never experienced OL) indicated that they were more motivated in the FTF environment (Fish & Snodgrass, 2014).

In order to be successful, OL students should be disciplined (Schott et al., 2003) as students that are not self-motivated and committed will not be happy in the OL learning environment (Rivera & Rice, 2002). In our prior study, OL learners and FTF learners felt the discipline required in their group is 'equal to or more' than the other instructional method (Fish & Snodgrass, 2014). Also, once OL students experience the OL environment,

they are ‘okay’ with it but do not appear to be as happy as those who are entrenched in the traditional FTF classroom. OL learning requires self-directed learning and autonomy, but self-discipline and motivation are also required to complete the course (Gifford, 1998; Kearsley, 2002). In our prior study, both FTF and OL students felt the independent learning was about the same for both learning environments, but slightly favored their own learning environment (Fish & Snodgrass, 2014). Our previous results found that OL students prefer the discipline and independence of OL learning over FTF classes, but are indifferent to the self-directed OL learning environment (Fish & Snodgrass, 2014). Some students always prefer to work independently (Hiltz & Turoff, 2005). Cultures may regard independent versus collective work differently; for example, U.S. students prefer independent work, while their Chinese counterparts prefer group work (Lin. Lee & Magjuka, 2010).

Time Investment and Cost Investment. Results regarding time and cost investment in the OL environment are mixed as some studies indicate that students perceive OL learning to be more time consuming (Dobbs et al., 2009; Gifford, 1998; Perreault et al., 2008), indicate student indifference (Fish & Snodgrass, 2014), or report FTF students studying more than their OL counterparts (Horspool & Lange, 2012). Good time management skills are critical in OL learning (Cheung & Kan, 2002). Student beliefs regarding OL education may also include the educational benefit and monetary cost associated with a course (Chawla & Joshi, 2012). Traditional FTF students felt the value from an OL course would be less than FTF (Chawla & Joshi, 2012); however, in our prior study, OL students were indifferent to cost investment (Fish & Snodgrass, 2014).

Preference and Appropriateness. In our prior study, while OL and FTF students both felt OL courses are appropriate at the university, both groups preferred FTF classes (Fish & Snodgrass, 2014).

Program Characteristics.

Students perceptions may be shaped by OL and FTF program characteristics, such as course difficulty, cheating, schedule flexibility, student

interaction and instructor interaction as well as the various technologies and activities used in the course. Whether students are properly prepared through formal training is another factor that may impact upon student perceptions. Research on student perceptions on program characteristic also produced mixed results as outlined below.

Difficulty. Student perceptions on course difficulty vary as some studies indicate FTF courses are easier than OL (Dobbs et al, 2009), while others indicate OL courses are easier than FTF (Armstrong, 2011). In our prior study, students indicated a dislike towards OL learning (versus FTF) for difficulty (Fish & Snodgrass, 2014).

Schedule Flexibility. A common reason OL students choose to take OL courses is flexibility and convenience (Chawla & Joshi, 2012; Grandon, Alshare, & Kwun, 2005; Horspool & Lange, 2012; Perreault et al., 2008), the ability to self-control the learning environment (Armstrong, 2011), avoiding a commute to campus, and work demands (Horspool & Lange, 2012). In our prior study, OL students preferred the schedule flexibility afforded through OL classes, while traditional FTF students did not perceive the schedule flexibility benefit associated with OL classes (Fish & Snodgrass, 2014).

Academic Integrity - Cheating. Rumors surrounding OL cheating abound. Student perceptions on cheating indicate that it is easier to cheat in the OL than FTF environment (Lanier, 2006; Fish & Snodgrass, 2014).

Student Interaction and Instructor Interaction. With respect to 'people' interaction, results are mixed. Some studies indicate OL courses enhance learner participation and interactivity (Maeroff, 2004), and others highlight a general feeling of 'disconnect' due to the lack of FTF interactions (Stodel, Thompson & MacDonald, 2006) or student distress (Hara & Kling, 2003). When OL students do not perceive that they are part of the 'group', they tend to be disgruntled and report inadequate student communication (Horspool & Lange, 2012), a lack of student interaction, and a general unwillingness of other OL learners to participate in group assignments (Maeroff, 2004). Studies offer mixed results as some indicate

that OL students like the OL interaction with other students more (Wang & Morgan, 2008) while others indicate they like it less (Horspool and Lange, 2012) than FTF.

When students perceive faculty as missing, they perceived the course quality as poor and vice versa (Armstrong, 2011). With respect to instructor interaction, mixed results exist again. Some studies indicate that OL interaction with the instructor is weaker (Wang & Morgan, 2008), indifferent (Horspool & Lange, 2012) or equal or even more positive than FTF (Boyd, 2008). In our prior study, OL and FTF learners preferred the student and instructor interaction in the FTF classroom over OL (Fish & Snodgrass, 2014).

Course Activities and Prior OL Training. OL education requires additional student and instructor skills (Tekinarslan, 2011), but it offers greater access to additional learning resources (Sener & Stover, 2000). For the most part, OL and FTF students appear technically well-equipped and comfortable in taking OL courses as few report significant communication issues (Horspool & Lange, 2012). Early research favored training or tutorials for OL students prior to OL enrollment (Perreault, Waldman, Alexander, & Zhao, 2002). Recent research indicates that students without OL training felt they were adequately prepared (Perreault et al., 2008). In our prior study, over 90% of the students who completed OL courses did not complete any formal OL training prior to taking the OL course (Fish & Snodgrass, 2014).

As for valuable OL activities, students perceived video modules, quizzes and the textbook as valuable to the learning environment regardless of whether the course was OL or FTF (Horspool & Lange, 2012). Other researchers indicated that students found the most used and valued OL activities include lecture/lab notes, unit learning resources and information, OL discussions, contacting lecturers/tutors and assignments (Palmer & Holt, 2010). Students perceived receiving assignment feedback from the instructor and reviewing unit progress as important to OL learning (Palmer & Holt, 2010).

LITERARY CONCLUSIONS FOR STUDY.

While not comprehensive, this literature review clearly indicates that ambiguity exists in the debate between OL and FTF education. Research also indicates that a student's experience with OL education changes over time, with a particular focus on 5 OL courses as a critical point in perceptual development. This research seeks to explore the time frame associated with perceptual changes by examining changes over one semester at a mid-sized, Jesuit, Catholic, business school with a focus on business.

METHOD

At an AACSB accredited, Jesuit, Catholic University in the northeast, students in an OL graduate business course in global supply chain management participated in pre-course and post-course surveys regarding their perceptions of OL versus FTF education. Since the classes are small (less than 20 students per class), the survey was distributed in two different semesters for the same OL course and framework. Differences between the sections in perception were only noted on 2 parameters, as discussed below. The same instructor, materials and framework for the OL courses was used for both semesters. In both sections of the OL course, graduate students completed the pre-course survey over the weekend prior to the start of class, while they completed the post-course survey over exam week. In the fall 2015, sixteen students completed the course; however, only 13 students completed both the pre-course and post-course surveys. While in the fall 2016, eighteen students completed the course; however, only 16 students completed both surveys.

In the fall of 2015, the OL course was the first OL course taught by the instructor, who taught for 22 years prior at the institution in FTF classes and the FTF version of the OL course 11 times prior. The instructor completed the university's OL training course in preparation for the course. The student weekly activities included completing the required

textbook readings in conjunction with a weekly handout highlighting critical material, answering study group questions (worth 25% of student's final grade) and individual questions, and completing a weekly quiz (worth 20% of student's final grade and administered through the Desire2Learn course management system). Additional readings and/or Executive Briefings with additional individual and study group questions were also included in the course as material warranted. All weekly material, except the quiz, was available on Sunday, 12:00 a.m. The study group questions were due on Wednesday evenings at 11:59 p.m., and general instructor feedback on the questions appeared at 6:00 a.m. on Thursday mornings. The groups consisting of 4 students each were assigned and rotated four times throughout the semester. At the end of each rotation, information on the group performance was gathered and grade adjustments could be made. (The instructor never needed to address group issues as no major problems were indicated.) The weekly quiz became available at 12:00 p.m. on Thursday and was due by Saturday, 11:59 p.m. Quizzes, which were timed, consisted of multiple choice questions, mapping and short answer questions, and the lowest 2 scores (out of the 15 were) dropped. In addition to the weekly activities, 5 assignments (worth 30% of student's final grade) were due throughout the semester. Students also completed a term paper (worth 25% of the student's final grade) on a student-proposed, instructor-approved topic. Students were required to verbally meet with the instructor over the semester (either through a verbal phone call or OL office hours). Only 1 student failed to meet this requirement.

Based upon prior research as noted above, the instructor administered a survey similar to other studies (Fish & Snodgrass, 2014, 2015) through the University course management software – Desire2Learn. The pre-and post- perception surveys questions included questions on motivation, discipline, self-directed, independent, time and cost investment, student and instructor interaction, difficulty, cheating, schedule flexibility, course activity preference, preference for OL versus FTF education, happiness, and the appropriateness of OL education at the university (See Appendix).

In the pre-course survey, students answered additional questions on whether they had taken a prior FTF course with the instructor, the number of OL courses taken prior not at the university, the number of OL courses taken prior at the university, and whether they had taken an OL preparation course, through the university, textbook publisher or other. In addition to specific questions regarding the handouts, quizzes, additional readings, Executive Briefings, assignments, study group questions, the individual term paper, textbook, final grades, office hours, and other potential activity changes to the course, students were surveyed on the average number of hours they spent working on course material each week (excluding two very intense weeks noted prior to the course by the instructor). Survey information was codified as noted in parentheses in the Appendix, and the data was entered into an EXCEL spreadsheet for analysis.

ANALYSIS

Out of the 29 students, the pre-course survey indicated that 3 students (out of 16) in the fall of 2015 and 2 (out of 18) students in the fall of 2016 took a prior course with the instructor. With respect to taking a prior OL course, over both sections, 6 students never took an OL course prior, 4 students took 1 OL class, 9 students took 2 OL classes, 5 students took 3 OL classes, 1 student took 4 OL courses, another student took 5 OL courses, 2 students took 6 OL courses, and 1 student took 7 OL courses. On average, the fall 2015 students took 2.15 OL courses ($\sigma = 2.34$), while the fall 2016 students took 2.31 OL courses ($\sigma = 1.54$). The classes were not significantly different with respect to the number of OL courses taken prior ($p=.84$), averaging 2.24 OL classes ($\sigma = 1.90$). Twenty-seven (of the 29) students (93.1%) never took an OL preparation course, 1 student took the school's OL preparation course, and another student used outside preparation materials. In the fall 2015 pre-course survey only 3 students commented on student interaction, instructor interaction and activities that increased or decreased their understanding

of course material. Therefore, the results on these parameters are the mainly perceptions of the fall 2016 class; however, the fall 2015 class did not significantly differ on these parameters from the fall 2016 class (as noted below).

As shown in Table 1, the class sections only significantly differed in their pre-course perception of total costs ($p=.04$), and a mild difference on post-discipline ($p=.08$). With respect to the fall 2015 class and total costs, the students did not significantly change their perception over the course ($p=.21$); however, for the fall 2016 class, there was a significant change in perception ($p=.04$) as students went from expecting costs to be equal ($\mu = 3.13, \sigma = .62$) to less ($\mu = 2.75, \sigma = .58$). With respect to discipline, the fall 2015 class, results indicate a mild change in perceptions ($p=.07$); while the fall 2016 students did not change their perceptions on discipline. Both sections were similar in their pre-course discipline perceptions (fall 2015 $\mu = 3.75$, fall 2016 $\mu = 3.85$), but their post-course perceptions differed as the fall 2015 students felt there was less discipline required ($\mu = 3.46, \sigma = .78$), while the fall 2016 student felt slightly, but insignificantly, more discipline than they originally perceived, was required ($\mu = 3.94, \sigma = .77$).

Given the insignificant difference between the sections on the other parameters, the analysis that follows includes all data from both classes combined, for a total number of students completing the pre- and post-surveys of 29 students. Comparison results (student t-test, one-tail, pairwise) indicate that students perceptions remained the same for all parameters except difficulty ($p=.01$), cheating ($p=.04$), and preference ($p=.01$). With respect to difficulty, students felt that the OL environment was more difficult – and perceived it to be significantly more difficult following the course than FTF. Prior to taking the course, students perceived that the OL environment would be easier to cheat in; however, following the course, they were relatively indifferent. Prior to the class, students' motivation and self-direction were indifferent to taking the class OL or FTF; however, following the OL course, a significant shift towards FTF classes was noted. In general, students were equally motivated in both

environments. Both classes indicated that the OL environment required more discipline than FTF. Graduate students felt that OL classes required more discipline and time investment than FTF. In general, students were indifferent to student-to-student and student-to-instructor interaction in the OL environment versus the FTF one. Graduate students enjoyed the schedule flexibility the OL environment affords them over the FTF environment and are generally happy with the OL environment. Students felt that OL courses are appropriate at the institution.

Eight students never changed their mind over the course and indicated that they would've preferred to take the class as a FTF class. Pre- and post-course completion, five students desired an OL course, and six students were indifferent. Six students began the course as indifferent between the two environments, but by course completion indicated that they would prefer a FTF course. Two students began the course as indifferent, but by course completion they indicated that preferred the OL environment. Similarly, two students began the course as favoring OL, but by the end of the course, were indifferent.

The pre- and post-surveys for the fall 2016 students included a question about the average number of hours they expected to spend or spent on the class. There was a significant difference in the students expectations ($p=.04$) as students expected to spend more hours ($\mu=5.56$ hours, $\sigma =2.55$), than they actually spent ($\mu = 4.88$ hours, $\sigma = 2.0$).

With respect to activity preference, only three of the fall 2015 students completed the pre-survey questions, while only 1 of the fall 2016 students failed the answer the questions. Students' pre- and post- thoughts regarding activities that increased and decreased their understanding of the material are summarized in Table 2. Out of the 18 students who completed the pre- and post-survey questions, only 7 students did not change their mind over the course regarding the most important teaching activity. At course end, out of the 7, 6 students preferred the homework assignments, while one preferred the videos. In general, students felt the homework (10) and discussion boards/study groups (7) increased their

understanding the most. With respect to decreasing understanding, only 3 students did not change their mind over the course as the majority (20) would not remove any activities.

OL Perceptual Differences with OL Experience: Transition. Given the small class sizes, subdividing and statistically comparing student perceptions by the number of OL courses that students have taken is not statistically acceptable. While the numbers are small, comparing the perceptions of students without prior OL experience ('novices'; 6) to those with OL experience ('experience', 23) reveals very little difference in perceptions between the two groups as shown in Table 3. However, a significant difference in post-course perception on student interaction exists ($p=.04$) between the two groups. After the course, novices liked the student interaction ($\mu = 3.33$, $\sigma = .52$) more than their more experienced colleagues ($\mu = 2.83$, $\sigma = .72$) who tended to dislike the student interaction. Mild differences in pre-course motivation ($p=.09$) and discipline ($p=.09$) and post-course cheating existed. Pre-course novices were equally motivated ($\mu = 3.0$, $\sigma = 0$), while experienced students were less motivated ($\mu = 2.87$, $\sigma = .46$).

Since these results indicate that over a single course, students do not appear to change their perception, the question remains, "*Do students' perceptions regarding OL versus FTF change over time?*" Table 3 reviews the transition from novice (no prior OL experience) versus students who have taken 1 or more OL courses. Interestingly, differences in perspectives start to appear. When comparing novices versus experienced students, mildly significant differences exist for pre-course motivation ($p=.09$) and discipline ($p=.09$) as well as post-course cheating ($p=.09$). When students have taken one or less courses versus students taking 2 or more OL courses, student perceptions are significantly different prior to the course for discipline ($p = .03$), time investment ($p=.05$), and student interaction ($p=.05$) as well as time investment ($p = .05$) and student interaction ($p=.04$). Mild significance exists prior to the course for motivation ($p=.09$), and cheating ($p=.09$) and preference (.07) after

the course. When comparing students' perceptions with 2 or less courses verses those with 3 or more courses, significant differences occur prior to the course for motivation ($p=.05$) and discipline ($p=.010$), with a mild significance for difficulty ($p=.06$). Post perceptions for these groups reveal significant differences for motivation ($p=.03$) and schedule flexibility ($p=.02$) and mildly significant differences for instructor interaction ($p=.10$) and difficulty ($p=.06$). Interestingly, when comparing the pre-course perceptions of students with 3 or less prior OL courses versus those with 4 or more, there are no significant differences in student perceptions. Post-course significance between these groups exists for student interaction ($p=.03$) and a mild significance for cheating ($p=.09$). In general, there appears to be a transition in students' perceptions as more courses are taken, particularly around 2 to 3 courses.

OL Perceptual Differences with OL Experience: Courses Taken & Hours Invested. However, as shown in Table 4, the correlations between student perceptions and the number of courses taken as well as the correlations between student perceptions and the self-reported average weekly hours invested in the course yield some interesting results. In general, there are weak – and usually negative - relationships between student perceptions and the number of OL courses taken; however, there is a moderate relationship prior to taking a course and discipline (.41) and time investment (.43), and a moderate, negative relationship with student interaction after the course (-.33). Essentially, going into a course, students perceive that discipline and time investment are important to their learning experience. However, following a course, they perceived the interaction with other students as a negative one. With respect to the number of OL courses, a positive change in the relationship with the students' perception for motivation, self-directed, independence, instructor interaction, cheating, schedule flexibility, and happiness exist, while a negative relationship occurred over the course for discipline, time investment, cost investment, and student interaction.

Prior to taking the course, a moderate, negative relationship exists between average hours invested in the course and the self-directed learning environment (-.39), independence (-.58), and happiness (-.53), while a positive relationship exists between average weekly hours invested and instructor interaction (.35). Perhaps, students expected the instructor-to-student experience to be more positive and were not looking forward to the self-directed, independent OL experience. After the course, students continued to demonstrate this moderately negative relationship with motivation (-.35), independence (-.46), student interaction (-.32) and happiness (-.30), and a moderately positive relationship with cost investment (.58). With respect to the average weekly hours invested in the course, a positive change in the relationship with the student's perception of self-directed, independence, cost investment, preference and happiness occurred, while a negative change occurred for motivation, discipline, student interaction, instructor interaction, and appropriateness.

DISCUSSION

The key focus of this study is to evaluate graduate student perceptual changes over a semester OL course at a business school with a focus on teaching. As students take more courses, studies evaluating student's perceptions of OL courses demonstrate an increasing acceptance of OL as being equal to or better than FTF (Dobbs et al., 2009; Fish & Snodgrass, 2014; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008; Tanner et al., 2003). This study sought to explore when this change occurred as students' perceptions over a single course were analyzed. In general, students' preconceived perceptions did not change - except on difficulty, cheating, and preference. However, the majority of students took less than 5 OL courses, prior to the study. Prior researchers indicate that at least 5 OL courses should be taken before students perceive OL education to be equal to or better than FTF (Dobbs et al., 2009). This study demonstrates that over a single OL course, students' perceptions

on difficulty, cheating and preference changed, regardless of the number of OL courses taken prior.

The instructor took great care in ensuring that the OL course mirrored the difficulty and demands of prior FTF class offerings. Perhaps as the semester wore on, graduate students became less enchanted with working alone. They may have realized that the difficulties of working alone to 'figure it out' versus being in a traditional classroom. The result that students' perception on difficulty increases as they take more OL courses corresponds to prior results (Fish & Snodgrass, 2014). Over the semester, students' perceptions on cheating changed from regarding it to be easier to cheat OL to essentially being equal. This differs from prior studies where students felt it was easier to cheat OL (Fish & Snodgrass, 2014). Perhaps, students may have realized that they had to complete the assignments on their own and couldn't just 'look up the answer' for quizzes. Essentially, students may have realized that they actually had to learn the material similar to a FTF class. While the course was well-received (3.9 out of 5), there was a significant shift of students' preferences from undecided toward a preference for a FTF class. However, the preference for FTF courses for this population – regardless of OL experience - has been noted in other similar studies (Fish & Snodgrass, 2014). Similar to other studies (Chawla & Joshi, 2012; Fish & Snodgrass, 2014; Grandon et al., 2005; Horspool & Lange, 2012; Perreault et al., 2008), graduate students overwhelmingly favored OL education for the schedule flexibility that OL offers. In general, graduate students perceived OL courses to offer more independence, discipline, and time investment than FTF courses. They were essentially 'happy' and accepting of OL courses at the University. However, graduate students indicated that they would be less motivated OL, enjoyed the self-directed OL environment less, and disliked the student and instructor interaction OL less than FTF. They were essentially indifferent to the cost investment differences between OL and FTF education. Graduate students felt their time investment was significantly greater OL than FTF both prior to the course and after taking the course. Ironically, the expected number of hours (5.56) for the

fall 2016 section was significantly more than actual hours they reported spending on the class (4.88 hours)! A traditional FTF class has a 2.75 hour class associated with it, along with readings, studying, problem solving and homework to complete, which probably takes the average student longer than 6 hours per week. Perhaps since the OL student is 'alone' the majority of time, they perceive the time investment more than in a FTF class.

While research from over a decade ago favors training for OL students (Perreault et al., 2002), today's students feel they are adequately prepared for OL education as over 93% of the students in the study did not take any OL training prior to the course. This is in keeping with similar research for today's generation (Fish & Snodgrass, 2014). While exposing a student to tools and techniques, OL training also impacts upon a student's perceptions and expectations. So, while students felt that they were adequately prepared to participate in the OL course, it is interesting to note that their perceptions still favored the FTF classroom. If potential OL students are required to take OL preparatory courses, perhaps their expectations would be different.

As for OL activities, results confirm that assignments (Palmer & Holt, 2010) are perceived as being valuable to OL learning. However, most students did not find videos (Horspool & Lange, 2012), instructor office hours or instructor chat/email as valuable, which contrasted with prior studies (Palmer & Holt, 2010). Graduate students perceived OL discussions, or in this case, study groups, differently. Prior to the course, most students did not perceive study groups positively – in fact, most regarded them negatively; however, by the end of the course, many graduate students favored study groups as having a positive impact upon their learning experience. In general, students recognized the importance of learning from others through the study groups, but they also value individual assignments. Interestingly, the majority of students (69%) indicated that all of the activities were beneficial to their learning, which speaks positively to the course framework and OL teaching method chosen!

This study sought to explore student perception changes over a time. As the results indicate, student perceptions (with the exception of difficulty, cheating and preference) remain the same over a single course. Interestingly, when comparing novices to students who had prior OL experience, student perceptions on student interaction following the course were significantly different. As noted above with activities, while the classes positively regarded the study groups, novices perceived them more positively than their more experienced colleagues. Perhaps, novices were not cognizant of the OL interaction that could occur online or the experienced groups disliked the 'study groups' more than traditional 'discussion boards'. (Note, the study group questions were graded responses, while discussion boards tend to be more difficult to grade and tend to be a pass/fail grade. Experienced students may have expected the pass/fail grading instead.)

In evaluating perceptual differences based upon OL experience, there appears to be a transition in students' perceptions as more courses are taken, particularly around 2 to 3 courses. However, these results should be interpreted with caution given the population and subgroup (number of prior OL courses) sample sizes. Comparing novices versus more experienced OL users indicated that novices were indifferent to student interaction; however, as the course progressed, novices enjoyed it significantly more than their more experienced counterparts. Perhaps, since novices had not experienced this constant student-to-student interaction in the FTF classroom, they enjoyed it more than their more experienced counterparts. Perhaps the 'novelty' wore off for the experienced OL students. Similarly, differences in motivation and discipline between novices and experienced users were noted, and students with 3 or more courses significantly differed from students with 2 or less courses in their perception on motivation. Students with 3 or more courses were significantly less motivated in the OL environment than in a FTF course. Perhaps, as students take more OL courses, they become 'burned' out due to the independent nature of the OL environment. With respect to students' perceptions on difficulty and cheating, which significantly

changed over the course, a mild change in cheating is noted immediately after one OL course. As for difficulty, a mild change is noted after 2 OL courses. No significant changes in student perceptions between increasing OL experience is detected for self-directed, independence, cost investment, happiness and appropriateness.

Students with more OL course experience responded positively on motivation, self-directed, independence, instructor interaction, cheating, schedule flexibility, and happiness. However, students with more OL experience responded negatively on discipline, time investment, cost investment, and student interaction. Essentially the change in each of these perceptions is related to students' prior experiences in the OL environment. In general, students appear to be more motivated, enjoyed the self-directed, and independence and were happier in this OL class than they expected to be based upon prior experience. While they initially felt they could cheat easily in an OL class, their perception changed over the course. OL students enjoy the schedule flexibility afforded them in the OL environment. However, students with prior OL experience did not enjoy the discipline, time and cost investment, and student interaction required in this OL course versus other OL courses. However, the majority of students indicated that they would not change any of the class activities.

As students invested more time into the course, they were less motivated, dislike the discipline required more, enjoyed the student and instructor interaction OL less, and they were not as happy as in a FTF classroom. However, the more time they invested, the more they enjoyed the self-directed, independent learning environment, and they perceived the cost investment more positively in the OL environment. With more time spent on the course, students' preferences for OL were improved as well as their happiness.

Limitations. A few limitations in this study exist. First and most importantly, the number of students that participated in the classes were relatively small, with only 29 completing both the pre- and post-course surveys. Hopefully, future offerings of the class will include more data.

Additionally, given the small class sizes, the ability to evaluate differences between students with more OL experience was difficult. Similarly, a more robust sample can be subdivided into relevant subgroups sample sizes and offer more complex statistical analysis. As another drawback to the current study, since few students completed the pre-course survey questions regarding activity preferences, the study was unable to analyze these perceptual changes. Hopefully, future studies will be able to gather this information. Another limitation of the study was the fact that the instructor was new to OL teaching as well. Perhaps a more experienced OL instructor may have a different impact upon the OL course and students.

Similar to our prior study (Fish & Snodgrass, 2014), graduate students' perceptions tended to favor FTF education in both the pre-course and post-course survey. Assuming as administrators do that OL education is equivalent to FTF (Allen & Seamen, 2013), then students should be indifferent to all of the factors surveyed. This study and others indicate that this is not the case. Contrasting to prior claims that students do not experience a change in their perceptions until at least 5 OL courses are taken (Dobbs et al., 2009), this study demonstrates that student's perceptions on difficulty, cheating and preference changed over just one course. However, in keeping with the prior studies, all other perceptions did not change significantly as students retained the majority of their perceptions of OL versus FTF education over the course. Students with relatively little exposure to the OL environment (less than 5 OL courses) – and no formal OL training – preferred FTF courses at the teaching university.

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WEB APPENDIX

A web appendix for this paper is available at:

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