THE EFFECTS OF HOMEWORK SESSIONS ON UNDERGRADUATE STUDENTS’ HOMEWORK PERFORMANCE

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Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

May 2013

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Hamilton, Elissa R. *The Effects of Homework Sessions on Undergraduate Students’ Homework Performance*. Master of Science (Behavior Analysis), May 2013, 102 pp., 2 tables, 14 figures, references, 42 titles.

Experimenters evaluated the effects of a homework session on undergraduate students’ homework performance through an adapted alternating treatments design in two introduction to behavior analysis courses. Several participants attended homework sessions; however, homework submission and homework mastery did not vary as a function of homework session attendance or availability. Homework submission remained high throughout the experiment regardless of attendance at or availability of a homework session. Many participants responded that they were not interested in or did not need homework sessions. Participants who attended homework sessions rated them as neutral or helpful overall, with longer time and different time as the most common suggestions for improvement.
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ACKNOWLEDGMENTS

I would like to thank the many people whose support made this thesis possible. My advisor, Dr. Traci Cihon, has been an instrumental figure in my graduate career. She has been a source of invaluable guidance, feedback, and support throughout all aspects of this thesis as well as my graduate career. My committee members, Dr. Richard Smith, Dr. Nancy Neef, and Dr. Karen Toussaint, provided their time, perspectives, and excellent feedback. Kay Treacher offered exceptional support not only as a good friend but as a fellow graduate student undergoing the thesis process at the same time. Jay Hinnenkamp patiently provided much needed support and advice throughout the duration of the research, which took place in his class. His leadership and discussion both in and outside the classroom constantly challenged me to look at behavior-environment interactions in different ways. TA/TF and DATA lab members, especially those I already mentioned along with Donna Ludlum and Audrey Shivers, offered much more than ongoing assistance and feedback. Beyond their role in shaping my education, these lab members increasingly became my graduate school family, sharing much needed reprieve with coffee breaks, movie nights, and plenty of laughter. The faculty and students at UNT, particularly those involved in BASAA and the labs I have sampled throughout my tenure, provided the environment for my intellectual, professional, and sometimes even social development. My fiancé, Dave Forand, has believed in me and encouraged me every step of the way. Without his ongoing love, support, encouragement, and patience, I would not have made it this far! Finally, I would like to thank my family and friends for believing in me and offering encouragement along the way.
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CHAPTER 1
INTRODUCTION

Homework has been a long-standing component of many educational programs in the United States from elementary school through the post-secondary level. Educators and parents suggest that homework may lead to beneficial effects on retention and understanding of material, improvements in study skills and attitudes toward school, and convey that learning can take place anywhere (Cooper & Valentine, 2001). Additionally, homework can contribute to the development of time management skills (Sheridan, 2009). On the other hand, some suggest that there are disadvantages to homework. For example, homework denies access to leisure time and activities that provide important academic and nonacademic lessons (Cooper & Valentine). Sheridan (2009) purports that homework can wreak havoc for those who lack the behavioral and environmental routines that are conducive for ideal performance. For example, if students without prerequisite behavioral and environmental routines are assigned homework they may struggle or even fail. However, there has been limited research to substantiate such claims.

Reviews of the research exploring the utility of homework have generally shown a positive correlation between homework and academic achievement with a greater effect size at the high school level ($d = .64$) than at the elementary school level ($d = .15$; Cooper, Robinson, & Patall, 2006; Cooper & Valentine, 2001). However, much of the research on homework utility does not specify the level of completion or accuracy requirements of homework (Harris & Sherman, 1974; Miller & Kelley, 1991). When researchers control the completion and/or accuracy of homework, the effects are positive. For example, in a multiple-baseline across classrooms experiment, Harris and Sherman (1974) provided consequences for accurate completion of homework assignments and saw increases in the number of students completing
homework and improvements in the accuracy of the homework. As a result, the students who completed the homework to the mastery criterion scored better on average when answering questions in class than students in a comparison section in which consequences were not provided for meeting a mastery criterion on homework. Similarly, in a questionnaire on the topic, Cooper, Lindsay, Nye, and Greathouse (1998) analyzed the portion of homework completed and found a positive correlation between student and parent reports of the portion of homework completed and measures of achievement.

Miller and Kelley (1991), in their review of interventions for improving homework completion, reported that much of the research to date has focused on contingency contracts, goal setting, and arrangement of consequences such as feedback, points, and removal of privileges for not meeting the contingency. However, they noted that many of these studies also targeted improved classroom performance and the effects of the interventions on homework were not often distinguished from other target behaviors. Miller and Kelley found that research on increasing homework accuracy and homework completion was scarce.

In another review of homework interventions, Kelley and Kahle (1995) discussed the differences in the procedures used in teacher-implemented interventions, parent-implemented interventions, and self-managed interventions. Teacher-implemented interventions focused on the manipulation of consequences, while parent-implemented interventions focused on homework routines, feedback, goals, contingency contracts, and parent training. Self-managed interventions were focused on goal setting to increase independence. At the post-secondary level, parent-implemented interventions and teacher-implemented interventions are unlikely, as most students are adults and are therefore presumably capable of self-management. However, if students have not yet developed self-management skills, teacher-implemented antecedent
environmental arrangements could involve minimal additional work from the teacher but may bring the student into contact with consequences (such as academic achievement) that maintain beneficial study habits. Little to no research has been done regarding antecedent environmental arrangements to increase the likelihood that students will complete their homework.

Parents are often expected to make sure their children do their homework and to assist as needed, but this follow up and assistance is dependent upon parental resources such as available parental time, parents’ ability to assist with educational activities, and other factors. At the elementary and middle school levels, some after-school programs provide an outside of the home support for homework completion. For example, Glazer and Williams (2001) instituted after-school academic sessions, a homework center, a homework hotline, and a tutorial program with a nearby university to help middle school students complete their homework. The authors collected qualitative data and reported encouraging feedback from teachers, parents, and students.

Cosden, Morrison, Albanese, and Macias (2001) reviewed the empirical literature regarding after-school programs offering academic experience and homework assistance and reported that the majority of the research used qualitative analysis or group designs and provided mixed outcomes in terms of academic achievement. In an effort to clarify the mixed impacts of out-of-school-time (OST) programs, Lauer et al. (2006) performed a meta-analysis of OST programs designed to supplement the education of low-achieving students in the areas of reading or mathematics and found small but statistically significant positive effects of OST programs on student achievement in those areas.

After-school programs that offer academic assistance are often designed to protect the academic standing of at-risk youth (Cosden, Morrison, Gutierrez, & Brown, 2004). Among the
protective functions is the provision of homework assistance and support that might not be available at home (Cosden et al., 2004). While other needs, such as safety and supervision, may subside as children grow older, the need for homework assistance and support may persist beyond the elementary years. Such a need should continue to be addressed at the secondary and post-secondary levels. Cosden et al. (2001) point out that a limitation of the current literature is that the majority of evaluated after-school programs serve younger children, despite the greater effects of homework for secondary students (Cooper & Valentine, 2001). For secondary and post-secondary students, after-school programs consist primarily of study sessions and office hours. Given that several researchers (Cooper et al., 1998; Cooper & Valentine) have found the positive correlation between homework and student achievement increases with students’ age or grade level, with the most favorable effects occurring during high school, further research in this area is warranted.

Study sessions for students at the post-secondary level of education are often geared specifically toward quiz preparation rather than general assistance or homework assistance. Among other benefits, study sessions offer the opportunity for students to ask questions to clear up confusion (Aamodt, 1982). Aamodt (1982) found that when a graduate assistant conducted an optional study session the night prior to an exam, students who attended the study session scored higher than nonattendees. The graduate assistant was blind to specific test item content, so the difference was not likely due to leakage of test content. While Aamodt’s study session was geared toward test preparation, this has implications for homework mastery, which could potentially have more impact on course grades by bringing students into contact with the course material sooner.
Interestingly, results of a study by Neef et al. (2007) were inconsistent with those of Aamodt (1982). Neef et al. manipulated study session format between a variety of games and student-directed question and answer sessions and found minimal to no difference between mean quiz scores for graduate students attending either type of study session versus those who did not attend study sessions. The authors suggested that the lack of difference could be due to the motivating operations in place for the individual students as well as ceiling effects due to the overall structure of a course designed to maximize performance.

The other prevalent option for assistance in higher education is office hours. Little is known about the impact of office hours on student performance, as most of the research on office hours has focused on the quality of interaction rather than the impact on student performance. Office hours typically function to provide extra time outside of class in which the professor or teaching assistants are available to answer questions or provide supplemental instruction on course content, but not necessarily to teach time management. However, those who have held office hours can attest to the low number of students taking advantage of this assistance. The nature of office hours is often student-directed. The student must come prepared with specific questions for the instructor and in some cases might need to set an appointment. These variables may decrease the likelihood students will attend office hours. As Zimmerman (2002) observed, the student-directed nature of office hours and other teacher-student interactions is a change from early grades, during which the teacher took a more active role (through goal setting, time management, and outlining expectations). Teachers often expect students in the upper grades to independently self-regulate their learning by deciding where, when, how, why, and what to do with the assigned homework (Zimmerman, 1998). Unfortunately, many students may not have developed these and other self-regulatory skills.
Behaviors characteristic of self-regulated students are carefully observing and judging performance and then reacting in adaptive ways, such as accessing additional resources to obtain the help necessary to continue the learning process (Ryan, Hicks, & Midgley, 1997). Other homework-related skills common to successful learners are effective time management and environmental structuring such as establishing an effective work setting (Bembenutty, 2009; Ramdass & Zimmerman, 2011). Several maladaptive homework behaviors have also been identified, such as self-handicapping, poor regulation of homework tasks (Bembenutty, 2011), and procrastination (Malott, 2005). These maladaptive behaviors may become more apparent as the teacher’s involvement is reduced in the upper levels of education.

Many students do not actively seek help even when academic difficulties are apparent. Karabenick and Knapp (1988) surveyed university students enrolled in an Introductory Psychology course after the final exam and reported a curvilinear relation between self-reports of help-seeking and the need for assistance (based upon student reports of expected grades). In other words, those students with the highest (and lowest) expected grades reported seeking help less than students expecting grades in the B- to C+ range. Furthermore, Karabenick and Knapp (1991) found that students who engage in fewer achievement-oriented activities reported a greater need for academic assistance yet had a lesser tendency to seek help. Some researchers suggest that factors contributing to the low rate of help-seeking behavior among poorly performing students may include personal learned helplessness due to a repeated lack of academic success (Abramson, Seligman, & Teasdale, 1978) and attributions to low ability (Weiner, 1985). In behavior analytic terms, these factors may be better articulated as patterns of behavior and the associated contingencies. For example, students may have engaged in achievement-oriented activities in the past but did not contact reinforcement (or perhaps
experienced punishment contingencies). After a few attempts (e.g., attending an appointment with a faculty member, performing poorly on a homework assignment or quiz), the achievement-oriented behaviors may have then decreased in favor of more readily reinforced behaviors such as engaging in social activities. An equally plausible behavior analytic account might suggest that students lacking the prerequisite skills to meet the reinforcement contingency never contact the reinforcement because the behavior itself (help seeking) is never produced and therefore never contacts reinforcement.

One method of facilitating the development of help-seeking behavior is to offer assistance in a neutral environment. This was demonstrated by Chung and Hsu (2006), who encouraged students to seek help outside of class by supplementing regular office hours with an additional block of time outside of their offices (“course center”). During this time, the students were welcome to come in and ask questions or work by themselves. While the interactions were still student-directed, contrary to office hours, there was no pressure to have questions prepared for the instructor. Moreover, the students were able to interact with peers in addition to the instructor. The less formal setting (in a classroom, opposed to the instructor’s office) and availability of peers may have facilitated help-seeking behavior. The majority of the participants indicated that they preferred the course center over office hours as a source of help. More than half of the students attended at least one course center. Such an intervention may bring more students into contact with successful homework completion, which could potentially lead to increased academic performance overall. The authors suggested that using a course center can have advantages for instructors as well, including minimal effort and cost (the course center can simply be an open space away from an office), and no requirements for additional work or preparation.
The current literature base on homework and homework interventions is limited in several ways. First, studies are often correlational in nature or are based on self-report data, both of which limit conclusions regarding a functional relation between homework and student achievement. Between-group analyses and correlational research may mask individual differences in participant data. Furthermore, Trautwein (2007) states that a limitation of past correlational studies regarding the homework and achievement relation is that much of the research does not distinguish between effect levels in terms of class or school (the assignment effect) versus individual student (homework completion effect). At the class or school level, variations in achievement may be due to differences between the quality and quantity of assigned homework across the reporting classes or schools. At the student level, such differences may be due to the varying amounts of time that different students spend on the same assignments. Another limitation is that student achievement is often measured in terms of standardized achievement tests, class tests, or course grades (Cooper & Valentine, 2001), and these may not readily translate into true measures of the impact of homework completion depending on the point structure of the course. For example, a measure of course grades could vary greatly if one course grade incorporated a point contingency upon homework and another was comprised primarily of class tests. Similarly, class tests may offer more flexibility in grading and might thereby yield different measures than standardized achievement tests.

Despite the positive correlation between homework and student achievement at upper grade levels ($d = .64$; Cooper et al., 1998; Cooper & Valentine, 2001), there has been limited homework intervention research focusing on students in secondary or post-secondary education (Cosden et al., 2001; Kelley & Kahle, 1995; Ryan & Hemmes, 2005). Quite frequently, in the case of education at these levels, the natural contingency in place is an ineffective avoidance
contingency in which there is a difference in aversiveness between the before and after conditions (Malott, 2005). More specifically, if there is not a contrived contingency (such as points) for homework or other achievement-oriented activities, engagement in any these activities is often not maintained strictly by the reduction in aversiveness of an upcoming due date or test without taking preparatory action.

In a within-subject homework study with college students, Ryan and Hemmes (2005) used an alternating treatments design to evaluate the effects of a point contingency on homework submission and subsequent quiz scores. Students received written feedback for all assignments regardless of the point contingency and were encouraged to complete all of the assignments as part of their preparation for quizzes. The outcomes showed higher group means for the percentage of homework submitted as well as higher quiz scores in conditions in which points were contingent upon homework performance. These data suggest that instructor-provided feedback and expectations of improved quiz performance were insufficient to maintain homework completion; rather, explicit contingencies needed to be arranged. This research supports the notion that the educational consequences that may be assumed to reinforce academic behavior may not effectively do so, and that contrived contingencies may often be necessary (Michael, 1991; Skinner, 1969).

Contingencies in which consequences are delivered dependent upon performance will not be effective if students lack the prerequisite skills to engage in the behavior that would meet the contingency. At the post-secondary level, such prerequisite skills may include reading comprehension, time management, and other self-regulatory skills. For example, students who are not able to complete homework on time miss the opportunity to engage in the correct response (completed assignment) that results in reinforcement. At best, they may come into
contact with the natural avoidance contingency in which class preparation is reinforced by reducing the aversiveness of class time approaching without some preparation, but as Malott (2005) has noted, this is often ineffective. Further, a bad grade on that or subsequent assignments may then punish overall responding (and lead to learned helplessness), as the correct behavior is never produced due to the lacking prerequisite skills.

If the problem is that the student’s understanding of the course material is inadequate, supplemental instruction provided during office hours may increase comprehension. However, office hours can benefit students only if they seek out help. Unfortunately, as Karabenick and Knapp (1988, 1991) have pointed out, those with a greater need for academic assistance have a lesser tendency to seek help. The students may not be accustomed to the student-directed nature of teacher-student interactions in the upper grades. Further, students may be less likely to seek help if they view the professor’s office as too formal of a setting compared to the more neutral environment of a classroom. Additionally, students may avoid office hours if they are uncomfortable with the one-to-one nature of the typical office hours interaction versus the social support available when in a classroom with a group of peers.

Antecedent environmental interventions, such as scheduled study sessions, that may support the development of the behaviors necessary to meet contingencies already in place in the course structure should be investigated. For example, offering the sessions in a more neutral environment such as a classroom might reduce the formality of assistance in an instructor’s office. If these sessions were scheduled by the instructor rather than at the request of the student, this would also reduce the effort required by the student to initiate assistance. This could benefit students regardless of time management skills. Additionally, the availability of more reinforcement in the form of social interaction with peers might increase the likelihood of
students taking advantage of the assistance. If successful, such interventions could potentially increase homework completion and its potential academic benefits.

When putting research-validated interventions into practice, Knorr (2010) recommends considering factors such as time, cost, and effectiveness. Homework sessions, similar to Chung and Hsu’s (2006) course center, may be a promising approach to provide scheduled times, locations, internet access, and teaching assistant help to aid students with homework. This could also function as a sort of behavioral trap (Alber & Heward, 1996; Kohler & Greenwood, 1986). The student’s responding may come into contact with contingencies similar to those associated with a chained scheduled of reinforcement. For example, when a student makes the initial response of entering a scheduled homework session, responding within the session may be reinforced socially or academically. The within-session responding would then be tied to the terminal response of completing the homework, which would ideally then be reinforced by existing course contingencies.

Such an intervention, if found to be effective, would likely require little time or cost to maintain. The current study aimed to evaluate the effects of homework sessions on homework completion with undergraduate students. The experimental questions were (a) if there is an optional homework session, will students attend; (b) does attendance at a homework session affect homework submission; (c) does attendance at a homework session affect homework mastery; and (d) how do participants rate the helpfulness of homework sessions as an element of the course.
CHAPTER 2

METHOD

Participants

The participants were consenting undergraduate students enrolled in a section of either a first or second level undergraduate introductory behavior analysis course (Intro 1 or Intro 2) in the Fall 2012 semester at a state university in Texas. There were 42 students (34 female, 8 male) enrolled in Intro 1 and 32 students (25 female, 5 male) enrolled in Intro 2, all of whom were eligible to consent for participation. Regardless of consent, all students enrolled in the course sections involved in this experiment had access to the intervention. Consent to participate did not influence students’ grades. Of the 74 enrolled students, 52 students (45 females, 7 males) of varying age, race, experience, and degree program participated in this experiment. Participation was defined as providing consent to use data that were collected as part of the course for the purpose of the experiment. Experimenters used the data from only those students who provided consent.

Setting and Materials

This experiment took place in a computer classroom at a state university in Texas. Materials consisted of Dell desktop computers located in the classroom, which all operated the most current version of Microsoft Windows®, as well as other computer equipment participants used to complete their homework. Course content was largely drawn from Miller’s (2006) *Principles of Everyday Behavior Analysis*, 4th edition. The course administrators posted all assignments and additional required readings on the university’s web platform, Blackboard Learn™.
Procedure

*General Homework Procedure*

Throughout all conditions, the course provisions, requirements, and grading structure remained the same for students enrolled in each section regardless of participation (see Appendices A and B for course syllabi).

Each course section was three credit hours. Intro 1 met one night per week for 2 hours and 50 minutes. Intro 2 had three 50 minute meetings per week. The teaching fellow (TF) and/or one or more teaching assistants (TAs; graduate students in the behavior analysis master’s degree program) held office hours the hour prior to each class meeting for both sections. Office hours took place in the TA/TF office, located in the same building in which the courses met.

Homework was due prior to the first class meeting of the week for both sections. All homework assignments were to be completed online using Blackboard Learn™. Homework assignments were fill-in-the-blank format (see Appendix C for screenshots of sample homework questions as they appeared on Blackboard Learn™) and almost all questions were drawn directly from the readings. The remaining questions were developed by graduate students in a lab devoted to developing and improving course material for the undergraduate introductory behavior analysis courses. For Intro 1, homework assignments consisted of 50 questions per unit (see Appendix D for the schedule of Intro 1 units). For Intro 2, homework length varied between 20 and 50 questions (with a mean of 34 questions) per unit (see Appendix E for the schedule of Intro 2 units). Students were allowed unlimited attempts to complete the homework to the mastery criterion (90 % or better) each week. The percentage correct was calculated by dividing the number correct by the total number of homework questions for that unit. Students were required to meet the mastery criterion in order to receive homework points for each unit.
Students received 10 points for each homework assignment on which they scored a minimum of 90% correct. Students received zero points for a score of 89% or less on the homework.

**Independent Variable: Homework Sessions**

During office hours prior to the first homework sessions for each section, the experimenter posted a homework session schedule (see Appendices D & E), description (see Appendix F), and announcement (see Appendix G) on each course section’s Blackboard Learn™ page. The experimenter read the same information aloud during the next class meeting in each course section and answered any questions. For all following intervention phases, the experimenter posted an announcement on Blackboard Learn™ that was visible from the start of office hours through the end of the homework session and made the same announcement in class. Each announcement specified the unit for which the homework session was being held.

Homework sessions took place in the same computer classroom in which the course meetings occurred. Homework sessions provided time designated for homework completion with or without real-time assistance from the experimenter. Students attending a homework session filled in their school identification number and their arrival time on an attendance form. Students could work independently or request help from the experimenter. Students were permitted to discuss content but not homework answers. Upon student request, the experimenter provided clarification about the reading or homework, answered technical questions regarding accessing the homework, or provided a brief review if it was apparent that a student lacked a prerequisite skill to understand the homework. The experimenter did not provide answers to the homework, with the exception of one occasion when there were technical difficulties associated with the automatic grading of a question.
Due to scheduling constraints of each course section and the computer classroom, there were a few procedural differences between course sections. Section-specific differences are explained below. Intro 2 was temporally the first section to enter into the experiment and thus this section is discussed first.

Intro 2

During the first class meeting of each week, the TF delivered a lecture on the week’s course unit and provided the opportunity to ask questions. The second class meeting consisted of an in-class discussion (ICD), during which the students worked alone or in small groups to complete a worksheet designed to strengthen and expand upon the course unit material. The TF and one or more TAs answered questions, provided clarification, and fostered discussion. The first few minutes of the final class meeting each week were set aside for homework completion questionnaires (HCQs; see Appendix H). When the HCQs were finished, the remainder of the time was available for the students to take up to two quiz attempts. One or more TAs were available outside the classroom to provide tutoring between quiz attempts. Different versions of the quiz were used for first and second attempts.

Homework sessions for Intro 2 began on Friday, September 7th. There were two homework sessions for each intervention unit. One homework session was held immediately after the last class of the week before homework for the intervention unit was due. The next homework session was held two hours prior to the class in which the intervention unit homework was due. For example, for an intervention unit for which homework was due on Monday, September 10th, there was a 45-min homework session immediately following class on Friday, September 7th and then another 45-min homework session two hours prior to class on Monday, September 10th. Students could attend any or all sessions. The proximity of the before class
homework sessions to the start of class was notably different for each course section: Intro 2 before class homework sessions began two hours prior to class, whereas Intro 1 before class homework sessions were immediately prior to class.

For Intro 2, there were twelve 45-min homework sessions corresponding to six units. An announcement for each homework session unit was released on Blackboard Learn™ on the day of the first homework session for the unit and was displayed until the end of the second homework session for that unit.

Intro 1

During all phases, the class meeting for Intro 1 began with a few minutes to ask clarifying questions about the material from the previous week’s unit, followed by a quiz on that unit. Students were permitted to take two quiz attempts with different quiz versions used for each attempt. One or more TAs were available outside the classroom to provide tutoring between quiz attempts. Approximately 40 minutes were allocated to the quiz portion of class each week. Following the quiz, a few minutes of class were set aside for HCQs. Once the HCQs were finished, the TF delivered a lecture on the week’s course unit and provided the opportunity to ask questions. This was followed by an ICD, during which the students worked alone or in small groups to complete a worksheet designed to strengthen and expand upon the course unit material. The TF and one or more TAs answered questions, provided clarification, and fostered discussion.

Homework sessions for Intro 1 began on Monday, September 10th. Initially, there were two homework sessions for each intervention unit. One homework session was held immediately after class the week before homework for the intervention unit was due. The next homework session was held immediately prior to the class in which the intervention unit homework was due. For example, there was a 45-min homework session immediately following class on
Monday, September 10th for a unit for which homework was due on September 17th, and another
45-min homework session immediately prior to class on Monday, September 17th. Students
could attend any or all sessions.

No students attended the first three after-class homework sessions, but several students
attended the before-class homework sessions; therefore, the experimenter discontinued the after-
class homework sessions and added an additional 45 min to the beginning of the before-class
homework sessions beginning on November 5th. The homework session on November 5th and all
following homework sessions started 45 min earlier and lasted for 1 hr 30 min.

For Intro 1, there were homework sessions corresponding to six course units. There were
six 45-min homework sessions corresponding to the initial 3 units and three 1.5-hr homework
sessions corresponding to the remaining 3 units. For the first three homework session units, an
announcement was released (visible to students) on Blackboard Learn™ on the day of the first
homework session for the unit and was displayed until the end of the second homework session
for that unit. For the final three homework session units, the announcements were released one
week prior to the homework session for each unit and were displayed until the end of the
homework session for that unit.

Experimental Design

The experimental conditions for each course section alternated by course unit, generally
on a weekly basis, throughout the duration of the course. This alternation controlled for potential
differences in difficulty between course units, which was also controlled by running the
experiment across different levels of the course. One course section began the semester, and thus
the experiment, two weeks prior to the other course section due to the academic schedule and
school holidays. The offset controlled for extraneous variables pertaining to onset of the independent variables.

Homework sessions were scheduled as close to class time as possible (given room availability) on regularly scheduled class meeting days, with the rationale that the students would already be on campus and would not have to put forth additional effort to return to campus at a time they might not otherwise be there. Additionally, this might provide the occasion for otherwise uninterested students to sample a homework session if they arrived early for class or lingered after class when a homework session was in progress. The timing of homework sessions was restricted by the availability of the computer classroom. For both course sections, the after-class homework sessions were held immediately following class. However, the before class homework sessions were held immediately prior to class for Intro 1 and two hours before class for Intro 2.

Dependent Variables

The dependent variables were attendance at homework sessions, homework submission, homework mastery and the responses to the social validity questionnaires. The experimenter tracked attendance using an attendance sheet (see Appendix I) at each homework session. Attendance was defined as the student being physically present at the homework session, indicating that he or she was present for the homework session (as opposed to being early for class), and filling in the student’s university identification and arrival time on the attendance sheet for that session. Homework completion was defined as the student selecting the “Save and Submit” button in Blackboard Learn™ after completing any or all homework questions. Blackboard Learn™ Grade Center instantly and automatically calculated homework scores upon
students’ completion of the homework and homework mastery scores were derived from this mechanism.

The experimenter collected HCQs each week. These were stored in a locked filing cabinet in the primary investigator’s office and were data entered and coded after the semester concluded to avoid any potential for grade bias. The following pieces of self-reported information were calculated and summarized: (a) was homework mastered and if not, why not; (b) attendance at the homework session and reported helpfulness or reasons for nonattendance; (c) suggestions for making the homework session more helpful.

The effects of the intervention on each participant’s behavior were evaluated by comparing the highest scored homework submission (above or below the mastery criterion) as well as homework mastery against the presence or absence of homework sessions. HCQ responses supplemented homework performance data. The social validity of the homework sessions was evaluated from responses on the end of semester questionnaire (ESQ; see Appendix J).

Treatment Integrity

Homework Session Announcements

An independent observer logged into Blackboard Learn™ and verified the announcement release and end dates for each homework session unit (see Appendix K for the treatment integrity sheet for homework session announcements on Blackboard Learn™). Based on these data, treatment integrity for homework session announcements on Blackboard Learn™ was 100% for each course section. Treatment integrity data were not collected on the in-class announcements.
Homework Sessions

An independent observer was scheduled to collect treatment integrity data for 33.33% of all homework sessions; however, due to no attendance at some of those sessions, the data were collected for only 14.28% of all homework sessions (refer to Appendix L for homework session treatment integrity sheets). The experimenter calculated agreements based on all allowed rules (yes or no were counted as agreement with treatment; no indicated non-occurrence) and not allowed rules (no constituted an agreement with treatment). Treatment integrity was 98.89% (range, 96.67% to 100%). There was only one homework session at which the observer noted that the experimenter engaged in a not allowed behavior (verifying student answers before homework is submitted). Unfortunately, the treatment integrity sheet did not accommodate elaboration, and the interval recording format did not allow for a deeper analysis.
CHAPTER 3

RESULTS

Attendance and Homework Submission

Figure 1 shows the percentage of participants submitting homework (regardless of mastery) along the temporal distribution of experimental conditions and homework due dates in each course section. The data suggest that the percentage of participants submitting homework in both Intro 1 and Intro 2 was high (between 80% and 100%) throughout the experiment.

Figure 2 shows the percentage of participants who submitted homework (regardless of mastery) and the percentage of participants who attended a homework session in Intro 1 (top panel) and Intro 2 (bottom panel). Homework submission did not appear to increase as a function of homework session availability or attendance. Homework submission was relatively high regardless of the opportunity for a homework session, showing a general increasing trend across both conditions until just after the midterm in each section. Attendance at homework sessions in Intro 1 ranged from 6.67% to 30% of participants (Figure 2, top panel). During weeks with a homework session, 83.33% to 100% of participants in Intro 1 submitted a homework attempt. During weeks without a homework session, 86.67% to 100% of participants in Intro 1 submitted a homework attempt. In Intro 2, attendance at homework sessions ranged from 0% to 13.64% of participants (Figure 2, bottom panel). During units with a homework session, 81.82% to 95.45% of participants in Intro 2 submitted a homework attempt. During units without a homework session, 81.82% to 100% of participants in Intro 2 submitted a homework attempt.

Conditions and Homework Mastery

Figure 3 shows the percentage of participants mastering homework along the temporal distribution of experimental conditions and homework due dates in each course section. These
data suggest that the percentage of participants meeting the homework mastery criterion was variable across both course sections and experimental conditions.

Figure 4 shows the percentage of participants who mastered homework and the percentage of participants who attended a homework session in Intro 1 (top panel) and Intro 2 (bottom panel). Homework mastery did not appear to increase as a function of homework session availability or attendance. In Intro 1 (Figure 4, top panel), homework mastery showed a general increasing trend across both conditions until just before the midterm. Starting with Unit 8, homework mastery decreased slightly in both conditions but remained consistent with previous levels and the percentage of participants mastering homework was consistently slightly higher in units for which there was a homework session than on regular units. During weeks with a homework session, 63.33% to 93.33% of participants in Intro 1 mastered their homework. During weeks without a homework session, 76.67% to 93.33% of participants in Intro 1 mastered their homework. In Intro 2 (Figure 4, bottom panel), homework mastery showed an increasing trend during the regular schedule and remained steadily high during units for which there was a homework session prior to the midterm. Unit 7 (the unit prior to the midterm) did not have a corresponding homework assignment. Beginning with Unit 8, homework mastery decreased slightly, falling within or just below previous levels. During weeks with a homework session, 68.18% to 95.45% of participants in Intro 2 mastered their homework. During weeks without a homework session, 72.27% to 100% of participants mastered their homework.

Individual Homework Performance

A total of 22 participants attended at least one homework session across course sections (sixteen in Intro 1 and six in Intro 2). Eleven of these participants (eight in Intro 1 and three in Intro 2) met the mastery criterion for each homework assignment regardless of condition.
5 shows the data for one participant, Aquarius1, who followed this pattern of performance. One participant in Intro 1, Taurus1, reached homework mastery for all but one unit, which was not a homework session unit (see Figure 6). Two participants, both in Intro 1, met the mastery criterion for all but two or three units. Figure 7 illustrates the data for one participant, Pollux1, who followed this pattern of performance. The remaining eight participants (five in Intro 1 and three in Intro 2) who attended at least one homework session demonstrated variable patterns of homework performance. For two of these participants in Intro 1, consistent performance began after the participant met the mastery criterion for the first time. For one participant, Canis1, the initial meeting of the mastery criterion occurred in a unit in which the participant attended a homework session (see Figure 8). The other participant, Perseus1, initially mastered the homework during the regular schedule, prior to attending a homework session (see Figure 9). The variable homework behavior patterns across the remaining six participants were idiosyncratic (see Figure 10).

Thirty participants did not attend any homework sessions (fourteen in Intro 1 and sixteen in Intro 2) and exhibited similar patterns of responding to those who attended a homework session. As with the homework session attendees, the variable homework performance of those who did not attend a homework session was idiosyncratic (see Figures 11 to 14 for data representative of participants who did not attend a homework session).

Initial Quiz Performance

Table 1 shows average first attempt quiz scores for each unit and the average first attempt quiz score across all semester quizzes for participants in Intro 1. The quiz scores for each unit are grouped based on those who mastered the homework versus those who did not master the homework. For Intro 1, the average first attempt quiz score across all semester quizzes for
participants who mastered the homework was 11.59 out of 15 (range, 8.84 to 12.78). The average first attempt quiz score across all semester quizzes for participants who did not master the homework was 9.29 (range, 5.44 to 13.5).

Table 2 shows average first attempt quiz scores for each unit and the average first attempt quiz score across all semester quizzes for participants in Intro 2. The quiz scores for each unit are grouped based on those who mastered the homework versus those who did not master the homework. The average first attempt quiz score across all semester quizzes for participants who did not master the homework was 12.19 out of 15 (range, 10.26 to 13.70). The average first attempt quiz score across all semester quizzes for participants who did not master the homework was 10.21 (range, 7.50 to 12.75).

Homework Completion Questionnaire

Overall, 70% to 90% of Intro 1 participants completed HCQs for Units 2 through 12 and 59.09% to 100% of Intro 2 participants completed HCQs for Units 1 through 12. In Intro 1, the experimenter did not administer an HCQ for Unit 1 as it would need to be administered during the already condensed first night of class. As many of the students enrolled in Intro 1 were freshmen (59.52%, versus 6.25% of those enrolled in Intro 2), this maximized the class time available to the TF to introduce the students to the course structure and contingencies as well as begin the first unit (which would otherwise be split across two class meetings). In addition, there was one unidentified HCQ for one unit in Intro 1 and five unidentified HCQs across four units in Intro 2. Because they may have been completed by nonconsenting students, data from those HCQs were omitted from the study.

Participant reports of homework mastery were generally accurate. There were 11 units in each course section in which there was homework and an accompanying HCQ (Intro 1 did not
have an HCQ for Unit 1, and Intro 2 had two units without homework). Out of these 11 units, the participant reports of mastery on the HCQ aligned with homework performance with 100% accuracy for seven units in Intro 1 and ten units in Intro 2. For Intro 1, one participant who indicated mastering the homework across three units (Units 3, 4, and 6) scored close to but not at or above the mastery criterion. Another participant in Intro 1 reported mastery for Unit 11 but had not submitted any homework for that unit. Prior to that unit, this participant had regularly mastered homework. For Intro 2, the only unit in which there was homework but less than 100% accuracy with reports of mastery was Unit 1, for which one participant indicated mastery of the homework but homework performance was just shy of the mastery criterion.

Participants completing the HCQ could select one or more reasons for not mastering homework. The reasons selected (or provided via write-in) ranged from nonresponse to multiple responses for any given unit. In Intro 1, the most prevalent reason reported for non-mastery (excluding midterm week responses) was other (14 incidences), with a wide variety of write-in responses. The next most indicated reason was not enough time (11 incidences), followed by didn’t understand (8 incidences), forgot (6 incidences), didn’t do the reading (5 incidences), and couldn’t access (1 incident). Participants in Intro 1 never selected didn’t realize there was homework.

In Intro 2, the most common reason reported for non-mastery (excluding midterm week responses) was other (incidence of 12), with a wide variety of write-in responses. The next most indicated reason was forgot (9 incidences), followed by not enough time (7 incidences), didn’t understand (3 incidences), and didn’t realize there was homework (2 incidences: the first unit and a unit in which there was not any homework). Participants in Intro 2 never selected didn’t do the reading or couldn’t access.
When participants rated the helpfulness of the homework session, the responses were helpful (17 incidences in Intro 1 and 6 incidences in Intro 2) or neutral (10 incidences in Intro 1 and 1 incident in Intro 2). Participants never rated a homework session as unhelpful. Participants most frequently rated having a TA available for questions (20 incidences in Intro 1; 7 incidences in Intro 2) as a helpful aspect of homework sessions, followed by having designated homework time (3 incidences in both Intro 1 and Intro 2), and other (3 incidences in Intro 1).

The most common reason participants reported for not attending a homework session was not interested (113 incidences in Intro 1, 87 incidences in Intro 2), followed by not available at that time (70 incidences in Intro 1, 68 incidences in Intro 2), other (57 incidences in Intro 1, 26 incidences Intro 2), forgot (31 incidences in Intro 1 and 23 incidences in Intro 2), and didn’t realize there was a homework session (4 incidences in Intro 1 and 15 incidences in Intro 2). Participants most often reported that a different time would be more helpful (119 incidences in Intro 1, 110 incidences in Intro 2), followed by other (45 incidences in Intro 1, 71 incidences in Intro 2), longer time (62 incidences in Intro 1, 25 incidences in Intro 2), and more TAs available (42 incidences in Intro 1, 5 incidences in Intro 2). Several write-in elaborations for other that were common to many participants across course sections were comments such as “n/a,” “nothing,” and “I can do the homework on my own.”

End of Semester Questionnaire

Forty-seven participants (27 in Intro 1, 20 in Intro 2) completed ESQs. Fifteen of those participants attended at least one homework session in Intro 1 and six had attended at least one homework session in Intro 2. Two questions on the ESQ asked participants to rate the helpfulness of the homework sessions on a Likert scale (1 = not at all helpful, 5 = very helpful). Participant helpfulness ratings were not consistent across questions. Intro 1 participants ranked
homework sessions as moderately helpful \((M = 3.15; \text{range, 1 to 5})\) on the first question and slightly less helpful \((M = 2.85; \text{range, 1 to 5})\) on the second question. Intro 2 participants ranked homework sessions as moderately helpful \((M = 2.94; \text{range 1 to 5})\) on the first question and slightly more helpful \((M = 3.32; \text{range 1 to 5})\) on the second question. On another question regarding the extent to which participants would recommend homework sessions for future students \((1 = \text{not at all}, 5 = \text{highly})\), mean participant rankings did not suggest a strong inclination either way \((\text{Intro 1}, M = 3.48; \text{Intro 2}, M = 3.55; \text{range, 1 to 5 for both course sections})\).

**Attendees**

When the responses of participants who attended at least one homework session were separated from all participants, results indicated that Intro 1 attendees rated homework session helpfulness more highly on both questions \((M = 3.67 \text{ and 3.27 for the first and second questions, respectively; range, 1 to 5 for both questions})\). Intro 2 homework session attendees provided even higher and more consistent helpfulness ratings \((M = 4.17 \text{ for both questions; range, 3 to 5 for both questions})\). Similarly, participants from Intro 1 who attended at least one homework session responded with higher ratings when asked if they would recommend providing homework sessions in future classes \((M = 3.93; \text{range, 1 to 5})\) and Intro 2 attendees responded to this question with even higher ratings \((M = 4.33; \text{range, 3 to 5})\).

Some attendees made comments about how to improve course elements that participants did not rate as being helpful. Suggestions included increasing the time or providing different times, and some attendees specifically requested that homework sessions not be held right before class. One attendee indicated that homework session timing was his least preferred aspect of the course overall, but two attendees (one per course section) noted that homework sessions were the
aspects of the course they liked most and recommended that homework sessions be continued.

Responses to questions addressing homework sessions specifically (as opposed to the course overall), attendees indicated that the most favorable aspect of homework sessions was the opportunity to ask questions, particularly about troublesome course concepts. Again, the timing of the homework sessions was noted as the most troublesome aspect of the homework sessions. For Intro 1, three attendees responded that homework sessions were preferred to office hours (as compared to five attendees who reported a preference for regular office hours). In contrast, all five attendees from Intro 2 who indicated a preference preferred homework sessions.

Nonattendees

Participants who did not attend a homework session (nonattendees) provided lower ratings of the helpfulness of homework sessions (Intro 1, $M = 2.5$ and 2.33 on the first and second questions, respectively; Intro 2, $M = 2.33$ and 2.92 on the first and second questions, respectively; range, 1 to 5 for all questions). Regarding the extent to which the attendees would recommend providing homework sessions in future classes, Intro 1 nonattendee ratings did not suggest a strong inclination either way ($M = 2.92$; range, 1 to 5) and Intro 2 nonattendees were only slightly higher ($M = 3.21$; range, 1 to 5).

Some nonattendees made comments pertaining to the homework sessions on an item pertaining to how to improve overall course elements that participants did not rate as being helpful. Nonattendees frequently indicated that they gave homework sessions low helpfulness ratings because they did not attend (due to lack of interest or need, or due to poor timing). Although these participants never attended a homework session, two nonattendees noted homework sessions as what they liked least about the course and recommended it to be changed (in one case, the timing was cited; in the other case no further details were offered).
When responding to an item specifically addressing homework sessions (as opposed to the course overall), most nonattendees remarked simply that they did not attend. Interestingly, one nonattendee responded that she liked the availability of homework sessions in the event that she needed them. The primary complaint about homework sessions from nonattendees across both course sections was the timing. Several nonattendees indicated that they did not attend either homework sessions or regular office hours and thus did not have a preferred format. Of those who did indicate a format preference, two nonattendees from Intro 1 surprisingly responded that homework sessions were their preferred format and two nonattendees favored regular office hours. For Intro 2, all six nonattendees who indicated a preference favored regular office hours.
CHAPTER 4
DISCUSSION

Experimenters evaluated the effects of a homework session on undergraduate students’ homework performance and found that although some participants attended homework sessions, homework submission and homework mastery did not vary as a function of homework session attendance or availability. The percentage of participants submitting homework was high throughout the experiment regardless of attendance at or availability of a homework session. The percentage of participants mastering homework was moderately high, but more variable. Individual patterns of mastery varied; however, nearly half of participants showed consistently high scores. Many participants indicated that they were not interested in or did not need homework sessions. Participants who attended homework sessions rated them as neutral or helpful overall, with longer time and different times as the most common suggestions for improvement.

Attendance at homework sessions was inconsistent across course sections. Consistent with results reported by Chung and Hsu (2006), more than half of Intro 1 participants (53.33%) attended at least one homework session. By contrast, just over a quarter of Intro 2 participants (27.27%) attended at least one homework session. Intro 1 was a prerequisite to enroll in Intro 2; therefore, a prior history with similar course contingencies and/or with the subject matter may account for these differences. It is possible that population differences existed between Intro 1 and Intro 2 participants, such that students who had previously performed well in Intro 1 self-selected to take Intro 2 based on success in Intro 1 and students who were not successful in Intro 2 selected not to enroll in Intro 2. As homework sessions were not offered in previous semesters,
those Intro 2 students who had been successful in Intro 1 without homework sessions would be less likely to attend the homework sessions because they did not need the assistance.

The proximity of the homework sessions to class meeting time also may have contributed to the difference in attendance between the two course sections. The before class homework sessions for Intro 1 were immediately prior to class, whereas the before class homework sessions for Intro 2 were two hours prior to class due to room availability. The response effort associated with arriving two hours early for class is potentially greater than the response effort to arrive one hour prior to class. Additionally, Intro 2 was a morning class; attending before class homework sessions likely also required the additional response effort of getting out of bed earlier in the morning. This was likely not a consideration for the Intro 1 class, which was an evening class. In any case, the finding that many participants did not attend homework sessions was not surprising in the absence of an explicit contingency upon attendance (Ryan & Hemmes, 2005; Skinner, 1969).

Feedback from participants who attended at least one homework session indicated that homework sessions were helpful or neutral, and many (but not all) of these participants favored homework sessions over office hours. It is unknown whether these participants had attended similarly structured opportunities in past courses or whether they were sampling new opportunities. Similarly, it is unknown whether participants who did not attend any homework sessions had attended similarly structured opportunities in past courses with neutral or deleterious results or if they had a lesser tendency to seek help due to a repeated lack of academic success in general (Abramson, Seligman, & Teasdale, 1978).

Interestingly, a few participants who had not attended a homework session indicated that they favored homework sessions over office hours. These participants were in Intro 1, for which
the homework sessions were held immediately prior to class, in the same classroom. It is possible that these participants had arrived to class early and witnessed a homework session. If students entered the classroom but reported that they had already completed the homework and were simply early for class, the experimenter did not ask them to sign the attendance sheet. While these particular nonattendees did not benefit in terms of their homework, which was already reportedly mastered, they may have benefited by experiencing the convenience of the timing of the homework sessions and by witnessing the nature of the student-instructor interactions. Another possibility is that these participants had previously experienced unpleasant experiences with traditional office hours and rated homework sessions more favorably as a result. A limitation of the present study, however, is that the experimenter did not take attendance at office hours, which could have been useful in comparing the forms of assistance accessed by participants and evaluating relative effects of office hours versus homework sessions. A final possibility is that some participants may have attended homework sessions unrelated to the present study.

The data did not indicate a functional relation between homework session availability or attendance and homework submission or mastery. Many of the participants across both course sections (Intro 1, 50%; Intro 2, 45.45%) mastered the homework each unit regardless of the availability of or attendance at a homework session. Two participants in Intro 1 exhibited variable performance in the first few units but then regularly mastered homework more consistently after Unit 4 or 5. For one of these participants, Canis1 (see Figure 8), mastery performance began with the first (and only) unit in which the participant attended a homework session, which is noteworthy but inconclusive. Such a pattern could also be attributed to students acclimating to the change in contingencies inherent to a new semester.
As Karabenick and Knapp (1988, 1991) found, it is also possible that those students who most needed help in the current course sections did not seek it out. Perhaps the reason the current study did not show an effect is because the majority of the students in the class may not have needed the intervention; there may have been an effect if used as a tertiary level intervention rather than a secondary level intervention (Sugai, et al., 2000).

The percentage of the students mastering homework in past sections of the same courses (in which students also consented for their data to be used) raised concern given the suggested benefits of homework (Cooper et al., 2006; Cooper & Valentine, 2001; Sheridan, 2009). However, a high percentage of participants mastered homework and even more submitted homework in the course sections involved in this experiment. Surprisingly, this was equally true of participants who did and did not participate in homework sessions. This was certainly a desired outcome, but one cannot conclude from the data that this outcome was functionally related to homework session opportunities or attendance.

There are several possible explanations for the high levels of homework submission and mastery across conditions. First, it is possible that the weekly HCQs served to prompt homework completion. A second plausible explanation is that the homework session announcements served as homework prompts for students to complete homework assignments, and the effect may have persisted over time. The announcements occurred every other unit and were necessary to alert the participants to the availability of a homework session. Although the information captured by the HCQ was both interesting and informative, the weekly HCQ may have altered the outcomes by functioning as a homework prompt across all conditions. Additionally, the first question on the HCQ stated the mastery criterion, which may have prompted students not only to submit their homework but to take as many attempts as necessary to meet the criterion. Of course, the
mastery criterion statement could not have impacted the performance of students who did not complete HCQs; however, few participants never completed an HCQ. Three potential areas for future research could provide additional information. In order to isolate the effects of homework sessions on homework performance, researchers could use a different experimental arrangement, perhaps a multiple baseline across course sections. Alternatively, researchers might replicate the current study without a weekly HCQ, which would potentially yield a clearer picture of the impact of homework sessions. Future researchers might also consider evaluating the effects of homework reminders, as an alternative to homework sessions, on homework completion and/or mastery.

Third, the increase in participants’ homework mastery and submission could also be attributed to individual differences between past students and current participants as well as course improvements from semester to semester. However, the likelihood of participants across two course sections in the current semester being inherently different from students in past semesters is much less likely than the probability that differences in performance were due to different stimulus conditions. The current curriculum and instruction for the courses involved in this experiment were developed over several years, resulting from a continuous improvement process of a group of faculty and graduate researchers, based on the combination of empirically-based best practices and weekly student performance data.

Fourth, the data reflect only the performance of consenting participants. It is possible that those students who did not consent would have performed differently. For example, perhaps the students who consented to participate were also more likely to complete homework assignments and perform at mastery levels. Perhaps consenting students had a history in which compliance (i.e., completing homework, and providing consent to use their data, even if optional) or taking
advantage of available educational opportunities associated with participation in research has been reinforced. The students who did not consent may have not experienced reinforcement for such behaviors.

Finally, it is possible that the overall course organization promoted these patterns of performance. The experiment took place in courses that are already designed to maximize performance. Neef et al. (2007) noted that some well-designed courses may create a ceiling effect due to the existing contingencies. It is possible that the courses in which this study took place represented such an environment. Future research is warranted to validate the external validity of certain combinations of course components that may render additional student supports unnecessary (cf., Keller, 1968; McKeachie & Kulik, 1975; McMichael & Corey, 1969; Skinner, 1984).

Although students in this experiment had access to their course grades at any time on Blackboard Learn™, future research (particularly in courses without this feature) might incorporate frequent and active notification of grade status. Notifications could be frequent early in the semester and then be faded out, and may prompt students to seek help (or function as homework session announcements or HCQs may have in the current study) if they are not accessing all opportunities to improve their grades. Additionally, repeated visual displays of the grading structure might draw attention to the impact of various course elements on the overall course grade, especially if the curriculum contains a variety of graded assignments. For example, if students have more extensive histories with grading structures in which course grades are weighted heavily on four or five comprehensive quiz scores, with very little weight on homework or other assignment scores, then less effort may be directed toward homework. In the current study, participants who mastered weekly homework scored almost 2 points higher on
average than those participants who did not master their homework (see Tables 1 & 2). Depending on the number of points available and the number of quizzes, over the course of the semester, this could significantly impact course grades. A graphical display of possible grades based on mastery or nonmastery of each course element might serve as a motivating operation (Laraway et al., 2003; Michael, 1982, 1993) to access as many educational opportunities as possible to maximize performance. Perhaps if students saw the difference in grades between those who mastered homework and those who did not, they might view mastery points as more valuable and might be more likely to engage in achievement-oriented activities (such as attending homework sessions) to attain homework mastery.

The responses to the HCQs indicate that some participants may have developed a pattern of responding that was controlled by the HCQ rather than reflecting on current performance. For example, several participants in each course section (12 on midterm week in Intro 1; 12 and 9 on no homework units in Intro 2) reported to have mastered the homework for that unit when in fact no homework had been assigned. This may have been a product of the response options on the HCQ, but other participants selected no to the mastery question and then followed up with other as the reason why not, commenting to the effect that there was not any homework for that unit.

Based on participants’ reports of mastery when it had not been achieved, a few participants may have been unclear about the mastery criterion, despite the statement of the mastery criterion on the HSQ. Additionally, a few participants indicated no homework session for this unit following homework session units, despite in-class and online announcements and the availability of homework session schedule online throughout the semester. This is an indication that interventions at the tertiary level (Sugai, et al., 2000) may be necessary to reach some students. Future research should address interventions at both secondary and tertiary levels.
One of the participants in Intro 2 asked when the HCQs would end, at which point (as well as when initially introduced and frequently throughout the semester), the experimenter reminded the class that the HCQs (and consent to participate in general) were optional and had no impact on their grades. It is difficult to discern whether this impacted the percentage of participants completing HCQs. In Intro 2, participants completed HCQs at the start of class on the last class meeting of the week. A lower percentage of participants completing the HCQ in this course section may have been due to late arrival, missed class, or participants exercising the option not to complete the HCQ. It is possible that the questionnaire component functioned as an abolishing operation (Michael, 1993) for students’ attendance at homework sessions or consent for their data to be used in general; future research is needed to address this possibility.

Despite the limited conclusions that can be drawn regarding homework sessions, the current study has several strengths. First, the experimenter served as the sole implementer. As Knorr (2010) recommended, this eliminated the time and cost of training multiple implementers, as well as limitations (such as implementer bias) inherent to multiple implementers. Additionally, the experimenter was a seasoned TA for the courses in which the experiment took place, which reduced training time and cost to familiarize an outside implementer with course material by using an existing resource. However, a sole implementer may have also served as a limitation due to lack of choice. Some participants may not have attended homework sessions because a more preferred TA was not the implementer. One participant in particular attended one homework session only (which had low attendance) yet repeatedly commented on her HSQ that *more TAs available* would make homework sessions more helpful to her.

Another strength of this experiment was that it was a simple manipulation that could easily be incorporated into existing course structures with little additional preparation. In the
current university context and economic situation, interventions that can help students to better meet student learning outcomes with little cost to the university or faculty are important. Furthermore, the participants in this study were readily available. While about 30% of students chose not to allow experimenters to access their data for research purposes, all students had the opportunity to access the homework sessions. Moreover, much of the data necessary for the experiment was regularly collected as part of the course grading structure. This format allowed experimenters to contribute to course redesign while simultaneously contributing to the scholarship of teaching and learning.

In closing, Malott (2005) recommends providing students with optimally structured learning environments. Office hours may be presumed to be part of such an environment, but they may not be optimal if students do not access them, as is frequently the case for students who most need help (Karabenick & Knapp, 1988, 1991). In the present study, the experimenter attempted to provide a more accessible environment, similar to Chung and Hsu’s (2006) course center, in which the experimenter provided additional resources to students (Ryan et al., 1997). Homework sessions could potentially reduce problems faced by students lacking the self-regulatory behaviors of deciding where, when, how, why, and what to do with homework (Zimmerman, 1998) by demonstrating how to establish an effective work setting, a skill common to successful learners (Bembenutty, 2009; Ramdass & Zimmerman, 2011). Despite efforts to provide an optimally structured learning environment in which students can develop such skills, tertiary levels of support may be necessary for some students.
### Table 1

**Intro 1 First Attempt Quiz Data**

<table>
<thead>
<tr>
<th>Intro 1 (N=30) Course Unit</th>
<th>Mastered the homework, took a quiz</th>
<th>Did not master the homework, took a quiz</th>
<th>Average initial quiz score</th>
<th>Average initial quiz score - Mastered the homework</th>
<th>Average initial quiz score - Did not master the homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduction</td>
<td>24</td>
<td>4</td>
<td>11.78</td>
<td>78.54%</td>
<td>5.44</td>
</tr>
<tr>
<td>2 Basic Concepts</td>
<td>19</td>
<td>10</td>
<td>8.84</td>
<td>58.95%</td>
<td>7.50</td>
</tr>
<tr>
<td>3 Measurement &amp; Visual Analysis</td>
<td>21</td>
<td>7</td>
<td>12.29</td>
<td>81.90%</td>
<td>10.79</td>
</tr>
<tr>
<td>4 Positive Reinforcement</td>
<td>26</td>
<td>4</td>
<td>12.09</td>
<td>80.58%</td>
<td>9.00</td>
</tr>
<tr>
<td>5 Reinforcer Effectiveness</td>
<td>25</td>
<td>1</td>
<td>12.78</td>
<td>85.20%</td>
<td>13.50</td>
</tr>
<tr>
<td>6 Negative Reinforcement</td>
<td>27</td>
<td>3</td>
<td>11.58</td>
<td>77.22%</td>
<td>9.50</td>
</tr>
<tr>
<td>7 Extinction</td>
<td>28</td>
<td>1</td>
<td>12.62</td>
<td>84.11%</td>
<td>9.00</td>
</tr>
<tr>
<td>8 Differential Reinforcement</td>
<td>24</td>
<td>5</td>
<td>8.88</td>
<td>59.17%</td>
<td>8.40</td>
</tr>
<tr>
<td>9 Ratio &amp; Interval Schedules</td>
<td>21</td>
<td>5</td>
<td>11.07</td>
<td>73.81%</td>
<td>9.00</td>
</tr>
<tr>
<td>10 Shaping</td>
<td>24</td>
<td>5</td>
<td>13.06</td>
<td>87.08%</td>
<td>9.60</td>
</tr>
<tr>
<td>11 Punishment</td>
<td>21</td>
<td>6</td>
<td>12.50</td>
<td>83.33%</td>
<td>10.50</td>
</tr>
<tr>
<td>12 Culture &amp; Coercion</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td>11.59</td>
<td>77.27%</td>
<td>9.29</td>
</tr>
</tbody>
</table>

Average initial quiz score for Intro 1 First Attempt Quiz Data: 77.27%

Average initial quiz score - Mastered the homework: 78.54%

Average initial quiz score - Did not master the homework: 36.25%
Table 2

Intro 2 First Attempt Quiz Data

<table>
<thead>
<tr>
<th>Intro 2 (N=22) Course Unit</th>
<th>Mastered the homework, took a quiz</th>
<th>Did not master the homework, took a quiz</th>
<th>Average initial quiz score - Mastered the homework</th>
<th>Average initial quiz score - Did not master the homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Methods of Observation</td>
<td>17</td>
<td>5</td>
<td>13.10 87.35%</td>
<td>12.75 85.00%</td>
</tr>
<tr>
<td>2 Reliability</td>
<td>21</td>
<td>1</td>
<td>12.96 86.43%</td>
<td>7.50 50.00%</td>
</tr>
<tr>
<td>3 Experimental Methods</td>
<td>18</td>
<td>4</td>
<td>12.83 85.56%</td>
<td>10.88 72.50%</td>
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<tr>
<td>4 Respondent Conditioning</td>
<td>20</td>
<td>2</td>
<td>11.74 78.25%</td>
<td>12.00 80.00%</td>
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<td>22</td>
<td>0</td>
<td>12.07 80.45%</td>
<td>n/a</td>
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<td>6 Motivating Operations</td>
<td>21</td>
<td>1</td>
<td>10.82 72.14%</td>
<td>7.50 50.00%</td>
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<td>7 Applied Behavior Analysis - JABA</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>19</td>
<td>2</td>
<td>10.26 68.42%</td>
<td>12.75 85.00%</td>
</tr>
<tr>
<td>9 Programming &amp; Fading</td>
<td>16</td>
<td>4</td>
<td>12.38 82.50%</td>
<td>9.00 60.00%</td>
</tr>
<tr>
<td>10 Imitation &amp; Instruction</td>
<td>15</td>
<td>6</td>
<td>12.10 80.67%</td>
<td>9.00 60.00%</td>
</tr>
<tr>
<td>11 Conditioned Reinforcers &amp; Chaining</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>12 Ratio &amp; Interval Schedules</td>
<td>15</td>
<td>6</td>
<td>13.70 91.33%</td>
<td>10.25 68.33%</td>
</tr>
<tr>
<td>13 Experimental Analysis of Behavior-JEAB</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td>12.18 81.20%</td>
<td>10.21 68.07%</td>
</tr>
</tbody>
</table>
Figure 1. Temporal distribution of experimental conditions and percentage of participants submitting homework. The vertical lines represent the start of a condition. The dates are the homework due dates.
Figure 2. Homework session attendance and participants who submitted homework by unit for Intro 1 (top panel) and Intro 2 (bottom panel). The abscissa crosses the ordinate below 0 to display when the experimenter offered a homework session but no participants attended.
Figure 3. Temporal distribution of experimental conditions and percentage of participants mastering homework. Mastery is defined as completing the homework with at least 90% correct. The vertical lines represent the start of a condition. The dates are the homework due dates.
Figure 4. Homework session attendance and participants who mastered homework by unit for Intro 1 (top panel) and Intro 2 (bottom panel). The abscissa crosses the ordinate below 0 to display when the experimenter offered a homework session but no participants attended.
Figure 5. Participant data for Aquarius1. These data are representative of participants in either class who attended one or more homework sessions and reached the homework mastery criterion each unit.
Figure 6. Participant data for Taurus1. This participant attended at least one homework session and reached the mastery criterion of homework in all but one unit.
Figure 7. Participant data for Pollux1. These data are representative of participants in either class who attended at least one homework session and reached the homework mastery criterion in all but two or three units.
Figure 8. Participant data for Canis1.
Figure 9. Participant data for Perseus1.
Figure 10. Performance data for six participants who attended at least one homework session but had variable homework performance. Centaurus1, Ida1, and Ophiucus1 were participants from Intro 1. Europa2, Luna2, and Ananke2 were participants from Intro 2.
Figure 11. Participant data for Betelgeuse1. These data are representative of participants in either class who did not attend any homework sessions but mastered homework each unit.
Figure 12. Participant data for Elara2. These data are representative of participants in either class who did not attend any homework sessions but mastered homework in all but one unit. Note: Intro 2 did not have homework for Unit 7.
Figure 13. Participant data for Gaspra1. These data are representative of participants in either class who did not attend any homework sessions but mastered homework in all but two or three units.
Figure 14. Performance data for four participants who did not attend any homework sessions and had variable homework performance. Capricorn1 was a participant from Intro 1 and Ophelia2, Leda2, and Jupiter2 were participants from Intro 2.
APPENDIX A

INTRO 1 SYLLABUS
Credits: 03

Department of Behavior Analysis

Fall, 2012

Required Materials:

Principles of Everyday Behavior Analysis - 4th edition
L. Keith Miller

Internet to access additional readings, complete homework and hand in assignments

Dry erase marker

Course Webpage:

Instructor:

TAs:

Elissa Hamilton – elissah524@hotmail.com

Office:

Location:
Hours: Monday 5:00 - 6:00 PM
Phone:

CLASS:

Monday: 6:00 PM - 8:50 PM
Location:

Course Description: This course is an Introduction to the field of Behavior Analysis. Behavior is examined as a part of the natural world, with primary focus on principles describing relations between operant behavior and its consequences. The principles of reinforcement, extinction, differential reinforcement and punishment are related to naturally occurring events and to experimental and intervention procedures. Basic measurement concepts are introduced.
COURSE COMPONENTS

Lecture/Discussion
A lecture introducing the material for each section will occur during each week. Lectures will encourage active student responding (either chorally or using response cards). Questions and discussions are encouraged. Guided notes for each lecture are available on Blackboard; students are encouraged to print a copy to complete during each lecture.

In-Class Discussions (ICD) – 70 Points
Students will be asked to engage in thirteen in-class discussions worth 5 points each where students will discuss their behavior change projects, case studies, and scenarios in class (13 @ 5 pts. each = 65 pts. total). ICDs will be available on Blackboard to print in class after the lecture.

Homework – 130 Points
Students will complete thirteen homework assignments on Blackboard worth 10 points each. Homework will include brief scenarios in which students will be asked to identify various components of the scenario and label the processes or procedures using behavior analytic terminology. To earn the 10 points for each homework, students must complete the homework at least 15 minutes before the start of class and score 90% or more. (13 @ 10 pts. each = 130 pts. total).

Quizzes 180 Points
Students will take eleven quizzes worth 15 points each. The quizzes will primarily cover material from the week’s lecture and readings, but may also include any material from lectures and readings from the previous weeks during the semester. Each quiz may be taken 2 times. During each quiz dry erase boards will be available for scratch paper. You will, however, need to supply your own dry erase markers. Tutoring is recommended and will be available prior to taking the quiz a second time. The BEST quiz score is the one that will be recorded as your grade. If you are absent on the day of a quiz, you will earn a score of zero. (11 @ 15 pts. each = 165 pts. total).

Behavior Change Project – 120 Points

Purpose: Students will be required to complete a behavior change project. The purpose of the behavior change project is to have students practice applying the principles and procedures discussed within class. In addition to the application of these principles and procedures, students will be required to take data, create graphs and write about the methods and outcomes of their project.

Structure: The behavior change project will be completed in groups of 3-4 students who all choose to increase an existing or establish a new target behavior. The instructor will provide a list of suggested behaviors. If the group decides to select a different behavior than those given by the instructor, the instructor must approve the behavior.

Assessment: The behavior change project is composed of four progress checks each worth 10 points and a final report worth 80 points. To receive points for the progress checks, students will need to complete both the individual and group component. Students will use the four progress checks along with the feedback they receive on those progress checks to write the final group report. A rubric for each progress check and final project can be found on Blackboard. (4 progress checks @ 10 points and 1 final paper @ 80 points = 120 pts. total).

Each of the individual and group assignments must be typed and handed in at the beginning of class on the day that it is due. Throughout the semester, time within class will be allocated to working on the
behavior change project. It may be necessary, however, for you to meet outside of class with your group to complete your project. Due dates for all four progress checks and final project can be found on the syllabus calendar. Assignments handed in after the due dates will not be accepted. Group members who turn in their assignments will not be penalized if another group member does not turn in his or her assignment. Prior to turning in the final project, it must be reviewed by the writing center. Final projects that have not been reviewed by the writing center will not be accepted.

Midterm (100 points) & Final Examinations (100 points)
Students will take a cumulative midterm and final exam within the course.

Extra Credit
The instructor may provide several extra credit opportunities throughout the semester. Students will be able to earn up to 15 extra credit points (or the equivalent of one quiz grade) for the entire semester. All extra credit opportunities must be turned in to the instructor by November 26th 2012.

Make-ups
Each student has three make-ups for the entire semester. These make-ups can be used to receive credit for missed work. You can use make-ups for the following assignments:
- Homework (1 make-up per missed homework)
- ICD (1 make-up per missed ICD)
- Quiz with an excused absence (1 make-up per missed quiz)

To use a make-up, complete the assignment and notify the instructor that you would like to use one of your make-ups. Make-ups used on material covered before the midterm must be used submitted prior to the midterm. All Make-up work must be submitted by November 26th.

Grades

Course Grades (midterm AND final)
11 Quizzes @ 15 points each = 165 points
13 Homework assignments @ 10 points each = 130 points
13 In-Class Discussions @ 5 points each = 65 points
4 Behavior Change Project Progress Checks @ 10 points each = 40 points
1 Behavior Change Project paper @ 80 points = 80 points
1 Midterm Examination @ 100 points = 100 points
1 Final Examination @ 100 points = 100 points
Total Points = 680

Extra Points Possible = 15

Grade Ranges ([points earned/total points possible] x 100%):  
A = 90%-100%  B = 80%-89%  C = 70%-79%  D = 60%-69%  F = below 60%

Accommodations for Students with Disabilities:
The College is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.
As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at [Redacted] Also, you may visit the Office of Disability Accommodation in the [Redacted] or call us at [Redacted]

Student Conduct: Each student automatically certifies that any material submitted for grading is his/her own independent work. [Redacted] policies require reporting of plagiarism or any suspected violations that constitute possible academic misconduct. Students are responsible for being familiar with the Code of Student Conduct.

Policy on Academic Dishonesty: Students in all Behavior Analysis courses are expected to maintain academic integrity at all times. Students committing acts of dishonesty including cheating and plagiarism are subject to receiving an "F" in the course. For a more detailed discussion on academic dishonesty, please refer to the Code of Student Conduct and Discipline on pages 108-109 of the undergraduate catalog. The information is also available at [Redacted]

Group work is encouraged; however, in the past there have been situations in which group work could have been considered cheating or plagiarism. "Legitimate" group work takes advantage of consultation with your peers, provides you with ideas, suggestions, corrections, etc., which you take into consideration in the development of your unique and individual product. Examples include reading the text and writing answers to the study guide items, then working closely with other students to compare study guide answers, and to attempt to resolve different understandings. Failing to do the reading and memorizing answers that another student has written for the study guide is not legitimate group work; it is cheating. Drafting the assignments, then comparing specific aspects of your product to others’ is appropriate. Copying someone else’s work products (or making your work available to another student to copy) is not legitimate; it is cheating. Always, if you are unsure about boundaries of legitimate group work, please (1) ask for clarification from the instructor, and (2) make full disclosure so that there is no question about your intentions. We are very happy to talk about these boundaries and work with you to maximize your learning and maintain individual accountability.

University Class Drop Dates:

Wednesday, September 12, 2012 Last day to drop a course (not withdrawing from the semester) and receive refund. Subsequent drops require instructor’s written consent.

Wednesday, November 7, 2012 Last day to drop with instructors consent.

Tips:

1. Read the assigned chapter(s) before completing your homework/coming to class.
2. Keep track of your points.
3. Attend or schedule tutoring sessions.
4. Maximize your points for the behavior change project by using the rubric on Blackboard.
5. If you miss questions on the weekly quizzes, find out from a tutor why you missed the question BEFORE attempting a second quiz. Getting tutoring between quizzes increases the probability of getting a higher score on your next quiz attempt.
6. If you have any questions, queries, comments or concerns, come to office hours!
# Weekly Class Schedule

*The professor reserves the right to adjust and modify this schedule based on the needs of the students*

<table>
<thead>
<tr>
<th>Session</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 3, 2012</td>
<td>Labor Day – No Class</td>
</tr>
</tbody>
</table>
|                 | **Readings:** Due 9/10 – Prior to class  
|                 |  • Miller Lesson 1  
|                 |  • Attitudes of Science – Located on Blackboard  
|                 | **Homework #1:** Due 9/10 – Prior to class – Located on Blackboard                                                                         |
| September 10, 2012 | Lecture: Syllabus & Introduction to Behavior Analysis  
|                 | ICD #1: Completed in Class                                                                                                                |
|                 | **Readings:** Due 9/17 – Prior to class  
|                 |  • Miller Lesson 2  
|                 |  • B.F. Skinner – Science and Human Behavior pg. 23-27 (Located on Blackboard)                                                          |
|                 | **Homework #2:** Due 9/17 – Prior to class                                                                                                |
| September 17, 2012 | Quiz #1: Introduction to Behavior Analysis  
|                 | Lecture: Basic Concepts  
|                 | ICD #2: Completed in Class                                                                                                                |
|                 | **BCP:** Select a target behavior and create BCP groups.                                                                                   |
|                 | **Readings:** Due 9/24 – Prior to class  
|                 |  • Miller Lesson 6                                                                                                                        |
|                 | **Homework #3:** Due 9/24 – Prior to class                                                                                                |
| September 24, 2012 | Quiz #2: Basic Concepts  
|                 | Lecture: Measurement & Visual Analysis                                                                                                     |
|                 | ICD #3: Completed in Class                                                                                                                |
|                 | **Readings:** Due 10/1 – Prior to class  
<p>|                 |  • Miller Lesson 8                                                                                                                        |
|                 | <strong>Homework #4:</strong> Due 10/1 – Prior to class                                                                                                |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
</table>
| October 1, 2012 | Quiz #3: Measurement & Visual Analysis  
Lecture: Positive Reinforcement  
ICD #4: Completed in Class  
Readings: Due 10/8 – Prior to class  
• Miller Lesson 12  
Homework #5: Due 10/8 – Prior to class |
| October 8, 2012 | Quiz #4: Positive Reinforcement  
Lecture: Reinforcer Effectiveness  
ICD #5: Completed in Class  
**BCP: Progress Check 1: Individual component due in class. Group component is due by 5 PM.**  
Readings: Due 10/15 – Prior to class  
• Miller Lesson 24  
Homework #6: Due 10/15 – Prior to class |
| October 15, 2012 | Quiz #5: Reinforcer Effectiveness  
Lecture: Negative Reinforcement  
ICD #6: Completed in Class  
Readings: Due 10/22 – Prior to class  
• Miller Lesson 9  
Homework #7: Due 10/22 – Prior to class |
| October 22, 2012 | Quiz #6: Negative Reinforcement & Midterm Review  
Lecture: Extinction  
ICD #7: Completed in Class  
**BCP: Progress Check 2: Individual component due in class. Group component is due by 5 PM.**  
**BCP: Start collecting baseline data.**  
Prepare for Midterm! |
| October 29, 2012 | Quiz #7: Extinction  
Cumulative Midterm!  
Readings: Due 11/5 – Prior to class  
• Miller Lesson 10  
Homework #8: Due 11/5 – Prior to class |
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture/ICD/BCP Details</th>
</tr>
</thead>
</table>
| November 5, 2012  | Lecture: Differential Reinforcement  
ICD #8: Completed in Class  
BCP: Progress Check 3 – Individual component due in class.  
Group component is due by 5PM.  
BCP: Start collecting intervention data |
| November 12, 2012 | Quiz #8: Differential Reinforcement  
Lecture: Ratio & Interval Schedules  
ICD #9: Completed in Class |
| November 19, 2012  | Quiz #9: Ratio & Interval Schedules  
Lecture: Shaping  
ICD #10: Completed in Class  
BCP: Progress Check 4 – Individual component due in class.  
Group component is due by 5PM.   |
| November 26, 2012  | Quiz #10: Shaping  
Lecture: Punishment  
ICD #11: Completed in Class |

**Readings: Each due on the 11th of the month prior to the class date.**
- Miller Lesson 13
- Miller Lesson 14
- Miller Lesson 11
- Miller Lesson 22
- Miller Lesson 23
- Coercion Reading: Blackboard
- Culture Reading: Blackboard

**Homework: Due on the 11th of the month prior to the class date.**
- Homework #9: Due 11/12 – Prior to class
- Homework #10: Due 10/19 – Prior to class
- Homework #11: Due 10/19 – Prior to class
- Homework #12: Due 12/3 – Prior to class
- Homework #13: Due 12/3 – Prior to class
<table>
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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>December 3, 2012</td>
<td>Quiz #11: Punishment</td>
</tr>
<tr>
<td></td>
<td>Lecture: Coercion &amp; Culture</td>
</tr>
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<td>ICD #12: Completed in Class</td>
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<tr>
<td></td>
<td>ICD #13: Completed in Class</td>
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<td></td>
<td>BCP: Final paper is due in class.</td>
</tr>
<tr>
<td></td>
<td>Prepare for Final!</td>
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<tr>
<td>December 10, 2012</td>
<td>Final Review</td>
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<tr>
<td></td>
<td>Cumulative Final</td>
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</tbody>
</table>
APPENDIX B

INTRO 2 SYLLABUS
Credits: 03

Department of Behavior Analysis

Summer, 2012

Required Materials:

Principles of Everyday Behavior Analysis - 4th edition
L. Keith Miller

Internet to access additional readings, complete homework
and hand in assignments

Dry erase marker

Course Webpage:

Instructor:

TAs:

Elissa Hamilton – elissah524@hotmail.com

Office:

Location:
Hours: Mo/We/Fr: 9:00 AM – 10:00 AM
Phone:

CLASS:

Mo/We/Fr: 10:00 AM - 10:50 PM
Location:

Course Description: This course is an Introduction to the field of Behavior Analysis. We will
focus on behavioral principles and procedures that underlie human behavior. You will come to
understand how behavior analysts collect data and quantify behavior. We will also investigate the relationship between human behavior and environmental antecedents.

COURSE COMPONENTS

Lecture/Discussion
A lecture introducing the material for that week will occur during each unit. Lectures will encourage active student responding. Questions and discussions are encouraged.

In-Class Discussions (ICD)
Students will be asked to engage in thirteen in-class exercises worth 5 points each where students will discuss and answer questions on each week's unit with classmates. (13 @ 5 pts each = 65 pts total).

Homework
Students will complete eleven homework assignments worth 10 points each. Homework assignments will include a brief scenario in which students will be asked to identify various components of the scenario and label the processes or procedures using behavior analytic terminology (11 @ 10 pts each = 110 pts total).

Quizzes
Students will take eleven quizzes worth 15 points each. There will be a quiz administered for each unit. Quizzes are cumulative and can contain material from previous units. Each quiz may be taken 2 times. Tutoring is recommended and will be available prior to taking the quiz a second time. The BEST quiz score is the one that will be recorded as your grade. If you are absent on the day of a quiz, you will earn a score of zero. There will be no make-up quizzes. (11 @ 15 pts each = 165 pts total).

Midterm (100 points) & Final Examinations (100 points)
Students will take a cumulative midterm and final exam within the course.

Extra Credit
The instructor may provide extra credit opportunities throughout the semester. Students may be able to earn up to 15 extra credit points (or the equivalent of one quiz grade) for the entire semester. Any extra credit opportunities must be turned in to the instructor before the date of the final exam.

Make-ups
Each student has three make-ups for the entire semester. These make-ups can be used to receive credit for missed work. You can use your 3 make-ups for any combination of the following assignments:
- Homework (1 make-up per missed homework)
- ICD (1 make-up per missed ICD)
- Quiz with an excused absence (1 make-up per missed quiz)
To use a make-up, complete the assignment and notify the instructor that you would like to use one of your make-ups. Make-ups used on material covered before the midterm must be used submitted prior to the midterm. All Make-up work must be submitted by November 26th.

GRADERS:

COURSE GRADES (midterm and final)
11 Quizzes @ 15 points each = 165 points
11 Homework assignments @ 10 points each = 110 points
13 In-Class Discussions @ 5 points each = 65 points
1 Midterm Examination @ 100 points = 100 points
1 Final Examination @ 100 points = 100 points
Total Points = 540

GRADE EQUIVALENTS ([points earned/total points possible] x 100):
A = 90%-100%  B = 80%-89%  C = 70%-79%  D = 60%-69%  F = below 60%

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:
The [insert text] is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at [insert text]. Also, you may visit the Office of Disability Accommodation in the [insert text] or call us at [insert text].

Student Conduct: Each student automatically certifies that any material submitted for grading is his/her own independent work. [insert text] policies require reporting of plagiarism or any suspected violations that constitute possible academic misconduct. Students are responsible for being familiar with the Code of Student Conduct.

POLICY ON ACADEMIC DISHONESTY: Students in all Behavior Analysis courses are expected to maintain academic integrity at all times. Students committing acts of dishonesty including cheating and plagiarism are subject to receiving an “F” in the course. For a more detailed discussion on academic dishonesty, please refer to the Code of Student Conduct and
Discipline on pages 108-109 of the undergraduate catalog. The information is also available at:

University Class Drop Dates:

Wednesday, September 12, 2012  Last day to drop a course (not withdrawing from the semester) and receive refund. Subsequent drops require instructor’s written consent.

Wednesday, November 7, 2012  Last day to drop with instructors consent.

TIPS:
1. Read the assigned chapter(s) before completing your homework/coming to class.
2. Keep track of your points.
3. Attend or schedule tutoring sessions.
4. If you miss questions on the weekly quizzes, find out from a tutor why you missed the question BEFORE attempting a second quiz. Getting tutoring between quizzes increases the probability of getting a higher score on your next quiz attempt.
5. If you have any questions, queries, comments or concerns, come to office hours!

<table>
<thead>
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<th>Weekly Class Schedule</th>
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<tbody>
<tr>
<td><strong>Session</strong></td>
</tr>
<tr>
<td>Welcome &amp; Review</td>
</tr>
<tr>
<td>August 29, 2012</td>
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<tr>
<td>Reading: Miller Lesson 3 – Due 8/31 Prior to class</td>
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<tr>
<td>Homework #1: Methods of Observation – Due 8/31 Prior to class</td>
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<td>1: Methods of Observation</td>
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<td>August 31, 2012</td>
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<td>2: Method of Observation</td>
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<td>September 3, 2012</td>
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<td>September 5, 2012</td>
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<td>3: Reliability</td>
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<td>September 10, 2012</td>
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<td>September 12, 2012</td>
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<td>4: Experimental Methods</td>
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70
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<td>Applied Behavior Analysis</td>
<td>October 15, 2012</td>
<td>Applied Behavior Analysis</td>
<td>7</td>
<td>JABA Article Summary</td>
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<td>October 17, 2012</td>
<td>Midterm Review</td>
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<td>October 19, 2012</td>
<td>Midterm</td>
<td></td>
<td>Reading: Miller Lesson 17 - Due 10/22 Prior to class</td>
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<td></td>
<td>Homework # 7: Generalization Training - Due 10/22- Prior to class</td>
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<td>October 22, 2012</td>
<td>Generalization Training</td>
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<td>October 24, 2012</td>
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<td></td>
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<td>October 26, 2012</td>
<td>Quiz # 7: Generalization Training</td>
<td></td>
<td>Reading: Miller Lesson 18 - Due 10/29 Prior to class</td>
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<tr>
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<td>Homework # 8: Programming and Fading - Due 10/29- Prior to class</td>
</tr>
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<td>Programming &amp; Fading</td>
<td>October 29, 2012</td>
<td>Programming and Fading</td>
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<td></td>
<td>November 2, 2012</td>
<td>Quiz # 8: Programming and Fading</td>
<td></td>
<td>Reading: Miller Lesson 19 - Due 11/5 Prior to class</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Homework # 9: Imitation &amp; Instruction - Due 11/5- Prior to class</td>
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<td>11: Imitation &amp; Instruction</td>
<td>Lecture: Imitation &amp; Instruction</td>
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<tr>
<td>November 5, 2012</td>
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</tr>
<tr>
<td>November 7, 2012</td>
<td>ICD # 10: Imitation &amp; Instruction</td>
<td></td>
<td></td>
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<tr>
<td>November 9, 2012</td>
<td>Quiz # 9: Imitation &amp; Instruction</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Reading: Miller Lesson 20 - Due 11/12 Prior to class</td>
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<tr>
<td></td>
<td>Homework # 10: Conditioned Reinforcers &amp; Chaining - Due 11/12 - Prior to class</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>12: Conditioned Reinforcers &amp; Chaining</th>
<th>Lecture: Conditioned Reinforcers &amp; Chaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 12, 2012</td>
<td></td>
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<tr>
<td>November 14, 2012</td>
<td>ICD # 11: Conditioned Reinforcers &amp; Chaining</td>
</tr>
<tr>
<td>November 16, 2012</td>
<td>Quiz # 10: Conditioned Reinforcers &amp; Chaining</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>13. Fall Break</th>
<th>Study Day/ Grade Check - In</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 19, 2012</td>
<td></td>
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<tr>
<td>November 21, 2012</td>
<td>Fall Break – No Class</td>
</tr>
<tr>
<td>November 23, 2012</td>
<td>Fall Break – No Class</td>
</tr>
<tr>
<td></td>
<td>Reading: TBD - Due 11/26 Prior to class</td>
</tr>
<tr>
<td></td>
<td>Homework # 11: TBD - Due 11/26 - Prior to class</td>
</tr>
<tr>
<td>Date</td>
<td>Event/Task</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>November 26, 2012</td>
<td>Lecture: To Be Determined</td>
</tr>
<tr>
<td>November 28, 2012</td>
<td>ICD # 12: To Be Determined</td>
</tr>
<tr>
<td>November 30, 2012</td>
<td>Quiz # 11: To Be Determined Reading: JEAB Article - Due 12/3 Prior to class <em>All Makeups and extra credit are due in class on 11/30/12</em></td>
</tr>
<tr>
<td>December 3, 2012</td>
<td>Lecture: Experimental Analysis of Behavior ICD # 13: JEAB Article Summary</td>
</tr>
<tr>
<td>December 5, 2012</td>
<td>Lecture: Midterm Review</td>
</tr>
<tr>
<td>December 7, 2012</td>
<td>Reading Day: No Class</td>
</tr>
<tr>
<td>Wednesday, December 12, 2012</td>
<td>Final</td>
</tr>
</tbody>
</table>

*The professor reserves the right to adjust and modify this schedule based on the needs of the students*
APPENDIX C

SCREEN CAPTURES OF SAMPLE HOMEWORK QUESTIONS

ON BLACKBOARD LEARN™
Figure C1. Screen capture of sample Intro 1 homework questions as they appeared on Blackboard Learn™.

Figure C2. Screen capture of sample Intro 2 homework questions as they appeared on Blackboard Learn™.
APPENDIX D

INTRO 1 COURSE UNITS AND HOMEWORK SESSION SCHEDULE
There was a homework session every other unit (see Table D1, bold text in gray sections). Due to attendance, the schedule was modified after the third homework session (see Table D2 for the amended schedule).

Table D1
Intro 1 Course Units and Initial Homework Session Schedule

<table>
<thead>
<tr>
<th>Course Unit</th>
<th>Due Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction – due 9/17/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Concepts – due 9/17/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement and Visual Analysis – due 9/24/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Reinforcement – due 10/1/12</td>
<td>9/24/12 After class for 45 minutes</td>
<td></td>
</tr>
<tr>
<td>Reinforcer Effectiveness – due 10/8/12</td>
<td>10/1/12 Before class (5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>Negative Reinforcement – due 10/15/12</td>
<td>10/8/12 After class for 45 minutes</td>
<td></td>
</tr>
<tr>
<td>Extinction – due 10/22/12</td>
<td>10/15/12 Before class (5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>MIDTERM 10/29/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differential Reinforcement – due 11/5/12</td>
<td>10/29/12 After class for 45 minutes</td>
<td></td>
</tr>
<tr>
<td>Ratio and Interval Schedules – due 11/12/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaping – due 11/19/12</td>
<td>11/12/12 After class for 45 minutes</td>
<td></td>
</tr>
<tr>
<td>Punishment – due 11/26/12</td>
<td>11/19/12 Before class (5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>Coercion &amp; Culture – due 12/3/12</td>
<td>11/26/12 After class for 45 minutes</td>
<td></td>
</tr>
<tr>
<td>FINAL 12/10/12</td>
<td>12/3/12 Before class (5:45 PM)</td>
<td></td>
</tr>
</tbody>
</table>

Table D2
Amended Intro 1 Course Units and Homework Session Schedule

<table>
<thead>
<tr>
<th>Course Unit</th>
<th>Due Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDTERM 10/29/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differential Reinforcement – due 11/5/12</td>
<td>11/5/12 Before class (4:15-5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>Ratio and Interval Schedules – due 11/12/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaping – due 11/19/12</td>
<td>11/19/12 Before class (4:15-5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>Punishment – due 11/26/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coercion &amp; Culture – due 12/3/12</td>
<td>12/3/12 Before class (4:15-5:45 PM)</td>
<td></td>
</tr>
<tr>
<td>FINAL 12/10/12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

INTRO 2 COURSE UNITS AND HOMEWORK SESSION SCHEDULE
There was a homework session every other unit (see bold text in gray sections).

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Due Date</th>
<th>Schedule Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of Observation – due 9/5/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability – due 9/10/12</td>
<td>9/7/12 After class for 45 minutes 9/10/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Experimental Methods – due 9/17/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent Conditioning – due 9/24/12</td>
<td>9/21/12 After class for 45 minutes 9/24/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Discrimination Training – due 10/1/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivating Operations – due 10/8/12</td>
<td>10/5/12 After class for 45 minutes 10/8/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Journal of Applied Behavior Analysis (JABA) &amp; MIDTERM – due 10/15/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalization Training – due 10/22/12</td>
<td>10/19/12 After class for 45 minutes 10/22/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Programming and Fading – due 10/29/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imitation and Instruction – due 11/5/12</td>
<td>11/2/12 After class for 45 minutes 11/5/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Conditioned Reinforcers and Chaining – due 11/12/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO COURSE UNIT – Study Day and Grade Check-in 11/19/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratio &amp; Interval Schedules – due 11/26/12</td>
<td>*11/16/12 After class for 45 minutes *11/26/12 Before class (8-8:45 AM)</td>
<td></td>
</tr>
<tr>
<td>Journal of Experimental Analysis of Behavior – due 12/3/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAL 12/12/12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

HOMEWORK SESSION DESCRIPTION
The following was read aloud in both course sections and was available on Blackboard Learn™ throughout the duration of the experiment:

There are regular office hours in Chilton Hall Room 360D before each class. During office hours, the TF and TA(s) are available to clarify confusion about the unit reading, homework, grade issues, etc.

For some course units, one of the TAs will be available in Chilton Hall Room 270 (our regular class location) for homework sessions. As part of the course redesign process, we are interested to see whether these sessions may help students. Homework sessions provide a designated time to work on homework with a TA present to clarify issues you may have from that unit’s reading. All students enrolled in this section are welcome at the homework session, regardless of whether you have any questions about the unit homework or would simply like to take advantage of time set aside in the computer lab to work on your homework.

As a reminder, to earn points for homework you must complete the homework with a score of 90% or greater by 15 minutes prior to class. At times, this may require multiple attempts on the homework.

<table>
<thead>
<tr>
<th>What to do before/during the homework session:</th>
<th>What not to do during the homework session:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Read the chapter/posted reading for the designated unit</td>
<td>• Ask questions about grades or other units (stop by during regular office hours)</td>
</tr>
<tr>
<td>• Ask questions to clarify confusion about the reading for the designated unit</td>
<td>• Ask for answers to the homework</td>
</tr>
<tr>
<td>• Ask questions to clarify confusion about the homework for the designated unit</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G

HOMEWORK SESSION SAMPLE ANNOUNCEMENTS
**Initial standard fill-in homework session announcement**

After class [today/tonight] (date) there will be a 45 minute homework session for the _______ unit due next Monday. There will be another homework session next Monday (date) [morning/before class] from __-__ [AM/PM]. Homework sessions will take place in (our regular class location). Students enrolled in this section are welcome to attend one or both homework session(s).

**Sample announcement Intro 2**

After class today (9/7/12) there will be a 45 minute homework session for the Reliability unit due next Monday. There will be another homework session next Monday (9/10/12) morning from 8-8:45 AM. Homework sessions will take place in (our regular class location). Students enrolled in this section are welcome to attend one or both homework session(s).

**Schedule amendment announcement Intro 1**

Due to a lack of attendance at the homework sessions held after class, the 9PM homework sessions have been canceled. However, the before-class homework sessions have absorbed that time and will now begin earlier, at 4:15 PM. Effective 11/5/12, the remaining homework sessions will be from 4:15-5:45 PM in the regular location .

The remaining homework sessions will continue to be offered every other unit, as highlighted in gray on the updated schedule below.

**Sample amended announcement Intro 1**

Next Monday (11/19/12) before class from 4:15-5:45 PM there will be a homework session for the Shaping unit due Monday. The homework session will take place in (our regular class location). Students enrolled in this section are welcome to attend the homework session.
APPENDIX H

HOMEWORK COMPLETION QUESTIONNAIRE
Homework Completion Questionnaire

Please answer the following questions in reference to the homework due this week.

1) Did you complete your homework to mastery (90%)?
   □ Yes  □ No
   If No, why not?
   □ Didn't realize there was homework  □ Forgot
   □ Not enough time  □ Didn't do the reading
   □ Didn't understand  □ Couldn't access
   □ Other (please explain): ____________________________

2) How likely would you be to complete your homework:
   a) With a designated Homework Session?
      □ Likely  □ Unsure  □ Unlikely
   b) Without a designated Homework Session?
      □ Likely  □ Unsure  □ Unlikely

3) Did you attend a Homework Session for the unit due this week?
   □ Yes  □ No  □ No Homework Session for this unit
   a) If Yes, you attended:
      i) How helpful did you find the session?
         □ Helpful  □ Neutral  □ Unhelpful  □ Did not attend/No session
      ii) What did you find helpful about the session?
         □ Having designated homework time
         □ Having a TA available for questions
         □ Other (please explain): ____________________________
      iii) How likely would you be to attend in the future?
         □ Likely  □ Unsure  □ Unlikely
      iv) How likely would you be to recommend the session to classmates?
         □ Likely  □ Unsure  □ Unlikely
   b) If No, you did not attend:
      i) Why not?
         □ Didn't realize there was a Homework Session  □ Forgot
         □ Not available at that time  □ Not interested
         □ Other (please explain): ____________________________
      ii) How likely would you be to attend in the future?
         □ Likely  □ Unsure  □ Unlikely

4) What would make the homework sessions more helpful to you?
   □ Different time  □ Longer time
   □ More TAs available  □ Other (please explain): ____________________________
APPENDIX I

SAMPLE ATTENDANCE SHEET
<table>
<thead>
<tr>
<th>EUID</th>
<th>Arrival Time</th>
</tr>
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<tr>
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</tbody>
</table>
APPENDIX J

END OF SEMESTER QUESTIONNAIRE
END OF SEMESTER QUESTIONNAIRE 3

1. How helpful were the clarifying lectures?
   1  2  3  4  5
   Not at all helpful  Very helpful

2. How helpful were the programmed notes?
   1  2  3  4  5
   Not at all helpful  Very helpful

3. How helpful was the homework?
   1  2  3  4  5
   Not at all helpful  Very helpful

4. How helpful were the In-Class Discussions?
   1  2  3  4  5
   Not at all helpful  Very helpful

5. How helpful were the office hours?
   1  2  3  4  5
   Not at all helpful  Very helpful

6. How helpful were the designated Homework Sessions?
   1  2  3  4  5
   Not at all helpful  Very helpful

7. How helpful was the Behavior Change Project?
   1  2  3  4  5
   Not at all helpful  Very helpful
   NA

8. To what extent would you recommend the clarifying lectures for future students?
   1  2  3  4  5
   Not at all  Highly

9. To what extent would you recommend the programmed notes for future students?
   1  2  3  4  5
   Not at all  Highly

10. To what extent would you recommend the homework for future students?
    1  2  3  4  5
    Not at all  Highly

11. To what extent would you recommend the In-Class Discussions for future students?
    1  2  3  4  5
    Not at all  Highly
12. To what extent would you recommend the office hours for future students?
   
   Not at all 2 3 4 5 Highly

13. To what extent would you recommend the designated Homework Sessions for future students?
   
   Not at all 2 3 4 5 Highly

14. To what extent would you recommend Behavior Change Project for future students?
   
   Not at all 2 3 4 5 NA

15. Please rate the helpfulness of the following aspects of the course:

<table>
<thead>
<tr>
<th>Not at all helpful</th>
<th>Very helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying Lectures</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Programmed Notes</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Homework</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>In-Class Discussions</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Office Hours</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Designated Homework Sessions</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Behavior Change Project</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

16. For any of the above not rated as helpful, please describe the reasons and what would have made them more helpful.

17. What did you like most about the course that you would recommend to be continued?

18. What did you like least about the course that you would recommend to be changed?
19. If you were to give yourself a grade based on what you had learned in the course, what would it be?

20. What did you like most about the designated Homework Sessions?

21. What did you like least about the designated Homework Sessions?

22. Which format of office hours did you prefer – regular office hours or Homework Sessions?
APPENDIX K

SAMPLE TREATMENT INTEGRITY SHEET

FOR HOMEWORK SESSION ANNOUNCEMENTS

ON BLACKBOARD LEARN™
Treatment Integrity: Homework Session Announcements on Blackboard Learn™

Thank you for your assistance with Treatment Integrity!

Please log in to Blackboard Learn™ and refer to announcements for each respective course section and unit to complete the following charts.

Please mark legibly in the charts below. In the third column, mark “X” if the Homework Session announcement “Display After” date on Blackboard Learn™ matches the scheduled release date for each Homework Session Unit (listed in the second column). If the dates do not match, mark “0”. Similarly, mark “X” in the final column if the Homework Session announcement “Display Until” date matches the scheduled end date (listed in the fourth column). If the dates do not match, mark “0”.

When you have completed the Treatment Integrity charts, please provide your initials where indicated at the bottom of the page. Thank you!

**Intro 1**

<table>
<thead>
<tr>
<th>Intro 1 Homework Session Unit</th>
<th>Scheduled Release Date</th>
<th>Released as Scheduled? &quot;X&quot; or &quot;0&quot;</th>
<th>Scheduled End Date</th>
<th>Released as Scheduled? &quot;X&quot; or &quot;0&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Basic Concepts</td>
<td>9/10/2012</td>
<td></td>
<td>9/17/2012</td>
<td></td>
</tr>
<tr>
<td>4 Positive Reinforcement</td>
<td>9/24/2012</td>
<td></td>
<td>10/1/2012</td>
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</tr>
<tr>
<td>6 Negative Reinforcement</td>
<td>10/8/2012</td>
<td></td>
<td>10/15/2012</td>
<td></td>
</tr>
<tr>
<td>8 Differential Reinforcement</td>
<td>10/29/2012</td>
<td></td>
<td>11/5/2012</td>
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</tr>
<tr>
<td>10 Shaping</td>
<td>11/12/2012</td>
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<td>11/19/2012</td>
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</tr>
<tr>
<td>12 Culture &amp; Coercion</td>
<td>11/26/2012</td>
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<td>12/3/2012</td>
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**Intro 2**

<table>
<thead>
<tr>
<th>Intro 2 Homework Session Unit</th>
<th>Scheduled Release Date</th>
<th>Released as Scheduled? &quot;X&quot; or &quot;0&quot;</th>
<th>Scheduled End Date</th>
<th>Released as Scheduled? &quot;X&quot; or &quot;0&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Reliability</td>
<td>9/7/2012</td>
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<td>9/10/2012</td>
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<tr>
<td>4 Respondent Conditioning</td>
<td>9/21/2012</td>
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<td>9/24/2012</td>
<td></td>
</tr>
<tr>
<td>6 Motivating Operations</td>
<td>10/5/2012</td>
<td></td>
<td>10/8/2012</td>
<td></td>
</tr>
<tr>
<td>8 Generalization Training</td>
<td>10/19/2012</td>
<td></td>
<td>10/22/2012</td>
<td></td>
</tr>
<tr>
<td>10 Imitation &amp; Instruction</td>
<td>11/2/2012</td>
<td></td>
<td>11/5/2012</td>
<td></td>
</tr>
<tr>
<td>12 Ratio &amp; Interval Schedules</td>
<td>11/16/2012</td>
<td></td>
<td>11/26/2012</td>
<td></td>
</tr>
</tbody>
</table>

Initials: ________
APPENDIX L

SAMPLE TREATMENT INTEGRITY SHEETS FOR HOMEWORK SESSION
### GENERAL RULES

<table>
<thead>
<tr>
<th>Allowed</th>
<th>Did this occur? (circle one)</th>
<th>Not allowed</th>
<th>Did this occur? (circle one)</th>
<th>If so, was it addressed? (circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>talking quietly</td>
<td>Yes</td>
<td>No</td>
<td>talking on the phone/talking loudly</td>
<td>Yes</td>
</tr>
<tr>
<td>using the computers</td>
<td>Yes</td>
<td>No</td>
<td>eating/drinking</td>
<td>Yes</td>
</tr>
<tr>
<td>In the event of</td>
<td>1st attempt to fix</td>
<td>2nd attempt to fix</td>
<td>3rd attempt to fix</td>
<td>First attempt during session</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Student arrives at any time in the post-class Homework Session but cannot access Blackboard Learn™/internet is down (for any attempt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student arrives within 5 minutes of start time in the pre-class Homework Session but cannot access Blackboard Learn™/internet is down</td>
<td></td>
<td></td>
<td>Switch computers</td>
<td></td>
</tr>
<tr>
<td>Student arrives 6-10 minutes after start time in the pre-class Homework Session but cannot access Blackboard Learn™/internet is down</td>
<td></td>
<td>TA attempt to fix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student arrives later than 10 minutes after start time in the pre-class Homework Session but cannot access Blackboard Learn™/internet is down</td>
<td></td>
<td>Ask for computer lab assistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student arrives at any time in the post-class Homework Session and starts the homework but is unable to finish by the end of the session due to technical difficulties (resolved)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student arrives within 5 minutes of start time in the pre-class Homework Session and starts the homework but is unable to finish by the end of the session due to technical difficulties (resolved)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the event of</td>
<td>1st attempt to fix</td>
<td>2nd attempt to fix</td>
<td>3rd attempt to fix</td>
<td>First attempt during session</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Student arrives at any time in the post-class Homework Session and starts the homework but is unable to finish by the end of the session due to wait time to ask TA questions</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Student arrives within 5 minutes of start time in the pre-class Homework Session and starts the homework but is unable to finish by the end of the session due to wait time to ask TA questions</td>
<td></td>
<td></td>
<td></td>
<td>At discretion of TA</td>
</tr>
<tr>
<td>Student arrives 6-10 minutes after start time in the pre-class Homework Session and starts the homework but is unable to finish by the end of the session due to wait time to ask TA questions</td>
<td></td>
<td></td>
<td>NA</td>
<td>No</td>
</tr>
<tr>
<td>Student arrives later than 10 minutes after start time in the pre-class Homework Session and starts the homework but is unable to finish by the end of the session due to wait time to ask TA questions</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

**Attempt** is defined as opening the homework outside of Homework Session time and completing over 50% of the responses (correct or incorrect, but relevant to the subject matter — not nonsense/irrelevant words to fill in blanks)

**At the discretion of TA** should be based upon, in no particular order and not a complete list:

- approximation to completion (with the majority correct, for example, 43 questions complete with 3 incorrect),
- closeness to mastery of completed attempt (for example, 43 out of 50 correct),
- number of attempts outside of the Homework Session.
REFERENCES


