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Online Learning Checkpoints: Exploring the Role of Mandatory Student and TA Interaction and Perceptions of Satisfaction and Usefulness

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Perceptions of Satisfaction and Usefulness

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Abstract

Keywords: student satisfaction, T.A., online learning, interaction, autonomy

With the rapid growth of online learning, there is considerable attention focused on student interaction and satisfaction in online courses. Instructors are instrumental in orchestrating interaction. When interaction is dissected, three distinct functions are identified. Researchers have identified T.A.'s as capable of fulfilling some of these instructor functions. TA's from Brigham Young University's online program conduct 3 predetermined checkpoints with each of their students. Checkpoints are used to monitor the progress and to ensure its timely advancement. The purpose of this study is to understand the nature and effectiveness of T.A. - student checkpoint interactions. Specifically, this research seeks to understand how students and T.A.'s perceive the value of these interactions. Findings suggest that students who participate in learning checkpoints find them useful. However, TA's do not rate learning checkpoints as useful as students. Further research is needed to determine this disparity.

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Online learning is growing in popularity with both students and at the postsecondary level. Growth rate of online course enrollment is 9.3 percent with 32 percent of all students taking at least one course online. That equates to 6.7 million students (Allen & Seaman, 2013; U.S. Department of Education, 2014). According to Means, Toyama, Murphy, Bakia, and Jones (2010) this popularity is due to the potential for increased flexibility particularly for non-traditional students.

With this virtual explosion, online learning has come under increased scrutiny. There has been considerable attention focused on student interaction in online courses. Interaction with content, instructor and peers in an online course differs from a traditional face-to-face format. Online courses physically distance students from the instructor and peers. This can contribute to students feeling isolated in the absence of interaction.   On the other hand, traditional face-to-face courses have built-in physical proximity and thus increases the likelihood for students to experience feelings of inclusion.

Undoubtedly, a plethora of studies suggest that interaction is a major contributing factor to student satisfaction (Anderson, 2003; Moore & Kearsley, 1996; Picciano, 2002). Furthermore, researchers have identified student satisfaction as a key indicator of student success (Chang & Smith, 2008; Noel-Levitz, 2011). Of course, there are other elements used to define a successful student experience (Ke & Kwak, 2013). For example, researchers indicate that satisfaction and success may increase when instructors communicate clear objectives and course requirements (Morris, Xu, & Finnegan, 2005; Rothman, Romero, Brennan, & Mitchell, 2011), provide prompt, meaningful feedback to students (Bangert, 2004; Eom, Wen, & Ashill, 2006), create a collaborative learning environment that promote critical thinking and reflection (Arbaugh, 2000;

Rovai, 2007) and offer high levels of student-instructor interaction (Swan, 2001). However, upon closer look, a common thread intertwining these success indicators is interaction.

Traditionally in online distance education the three common types of interaction have been identified as interaction with student-content, student-teacher, and student-student (Moore, 1989). These interactions were expanded to include teacher-teacher, teacher-content and content-content (Anderson, 2003). Interaction is motivationally and educationally valuable (Borup, Graham, & Davies, 2013) and is a vital component of online learning.

Instructors are instrumental in orchestrating interaction. When interaction is dissected, three distinct functions are identified. Introduced by Heinemann (2005) are intellectual/instructional, organizational/procedural and social interactions (Hawkins, Graham, Sudweeks, & Barbour, 2013).

Researchers have identified T.A.'s as capable of fulfilling some instructor functions (Paulson, 2002). T.A.'s may be able to fill some roles of interaction more efficiently leaving the instructor to be able to interact in ways for which he/she is most qualified (related to challenging content)

 Other distance learning institutions (for example, Western Governor's University and University of Phoenix) have tried creating roles that regularly interact with students to facilitate the instructor in helping students be successful (Paulson, 2002). It is unclear whether T.A.'s are successful in fulfilling some of the traditional instructor roles. More research is needed to establish this.

The purpose of this study is to understand the nature and effectiveness of T.A. - student checkpoint interactions. Specifically, this research seeks to understand how students and T.A.'s perceive the value of these interactions. An in-depth understanding could facilitate the

development of guidelines to govern checkpoint interactions that may lead to more productive use of T.A. and student resources.

<div align="center">**Literature Review**</div>

Growth of Online Learning

Due to the vast terminologies used for online learning, there are many definitions of online learning. Some definitions are vaguely defined as learning and/or teaching in any form that takes place via computer network (Kearsley, 1998). Ko and Rossen (2001) define online learning in very general terms. They reference online learning as the act of conducting a course partially or totally through the Internet. Consequently, it is difficult to gain consensus for one generally agreed upon definition beyond the underlying assumption that the student is at a distance. As a result of a lack of an agreed upon definition, for the purpose of this paper, online learning will be defined as "the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience." (Ally, 2004, p. 7). Additionally, online is operationalized as 80% or more of content delivered online (Allen & Seaman, 2007).

Despite the lack of commonly accepted definition, online learning remains one the fastest growing trends and has become strategic in Higher Education. In 2012, close to 70 percent of institutions of higher education report that online learning is a significant part of their strategic plan with 6.7 million students taking at least one online course (Allen & Seaman, 2013). Given the tremendous growth and constant effort to improve, it is important to continually look for ways to increase interaction.

Interaction as a Key Indicator of Student Satisfaction

As one of its metaphoric pillars, the Sloan-Consortium established student satisfaction with online learning (Lorenzo & Moore, 2002). Student satisfaction is vital to their educational experience. A wealth of studies indicate that interaction is a key factor contributing to student satisfaction (Anderson, 2003; Moore & Kearsley, 1996; Picciano, 2002) with both quantity and quality of those interactions correlating highly (Dziuban, et al., 2015).

Much like online learning, no universally accepted definition of interaction exists (Anderson, 2003; Soo & Bonk, 1998). Researcher Thurmond (2003) defined interaction as:

…the learner's engagement with the course content, other learners, the instructor, and the technological medium used in the course. True interactions with other learners, the instructor, and the technology results in a reciprocal exchange of information. The exchange of information is intended to enhance knowledge development in the learning environment. Depending on the nature of the course content, the reciprocal exchange may be absent – such as in the case of paper printed content. Ultimately, the goal of interaction is to increase understanding of the course content or mastery of the defined goals. (p. 4)

Moore identified three categories of interaction as student-student; student-content; and student-teacher (Moore, 1989). Student-student interactions include collaborative learning that help to develop interpersonal skills, investigate knowledge (Seely Brown & Hagel, 2005), and develop communities of learners (Lave & Wenger, 1991). Learner-learner interaction involves collaborative learning. For many disciplines, peer interaction is an essential component of the learning process (Friesen & Kuskis, 2013)

Student-content includes lectures, textbooks, library and internet research which historically content has been the foundation for education. Student-content interaction is the

learner interacting with content that results in "changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind" (Moore, 1989, p.2).

Student-teacher interactions include communication via text, audio and video communications and can be asynchronous or synchronous (Anderson, 2003). Student-teacher interaction is bidirectional communication with a subject matter expert to gain support, including motivation, self-direction, presentation of information, and evaluation. Hawkins and her group of researchers, dissected teacher interaction to identify its functions. They found three functions: intellectual, organizational and social that can be categorized as content, procedural and social (Hawkins et al., 2013).

Anderson and Garrison (1998) extended Moore's categories to include three additional categories of interaction: teacher-teacher; teacher-content; and content-content. Teacher-teacher interactions include professional development opportunities and supportive roles. Teacher-content interaction focuses on the development of content. Content-content interaction occurs when content is built to interact with automated information. For example, current weather may be updated from the national weather service in a course on meteorology.

However, there may be a misconception to assume instructors as faculty. Increasingly, institutions of higher education are unbundling the traditional faculty role to include specialist para-academics (Macfarlane, 2011). Researchers Neely and Tucker (2010) compare a traditional faculty model where a faculty member instructs, develops courses, assess learning outcomes, advises students and conducts research to an unbundled faculty model. An unbundled faculty model is one in which core faculty responsibilities are separated and allows faculty to focus on their areas of expertise. Macfarlane (2011) refers to this practice of disaggregating roles as academic subcontracting. In fact, Twigg (2003) contends that not all course activities require a

highly trained individual. By subcontracting logistical tasks to para-academics, faculty are able to focus on those content related academic tasks.

Paulson (2002) discussed the concept of unbundling faculty instructional role to include T.A.'s as lecturers of smaller groups and graders. These T.A.'s act as "peer instructors" (p.133). They can act as the first line of defense to categorize the inquiries of the learners from simple requests that the T.A. can respond to more complex inquiries requiring faculty attention.

For clarity, and due to the multiplicity of terms used for teaching assistant, the term teaching assistant (T.A.) refers to undergraduate or graduate students employed to assist the faculty member in providing support to students. The functions that a T.A. provides varies per faculty and student needs, however, in large part represent procedural and social functions with less emphasis on content.

Transactional Distance Theory as a Framework

The theory of transactional distance explains students' perceived transactional distance is impacted by two sets of variables, dialog and structure (Moore, 1980). Dialog and structure are continuous variables and how they interact determines the transactional distance. Moore (1993) defines dialog as "purposeful, constructive and valued by each party. Each party in a dialogue is a respectful and active listener; each is a contributor, and builds on the contributions of the other party or parties...the direction of a dialogue in an educational relationship is towards the improved understanding of the student" (p. 24). Whereas structure is defined as "...the extent to which the objectives, implementation procedures, and evaluation procedures of a teaching program are prepared, or can be adapted, to meet specific objectives, implementation plans, and evaluation methods of individual students. Structure is a measure of the educational program's responsiveness to the learner's individual needs" (Moore, 1980, p. 21). Therefore, as structure

increases, transactional distance increases. Further, as dialog decreases, transactional distance increases.

According to the theory of transactional distance theory, learner autonomy is a three-dimensional concept defined by Moore (1984) as "the extent to which in the teaching/learning relationship it is the learner rather than the teacher who determines the goals, the learning experiences, and the evaluation decisions of the learning programme" (p. 85). The greater transactional distance (more structure, less dialog) influences the increasing level of autonomy learners must exercise. Therefore, as programs move away from dialog and structure autonomy increases.

The purpose of this research study is to understand how students and T.A.'s perceive the value of checkpoint interactions. This will be done by focusing on the quantity and quality of the learner-instructor interaction that BYU Online students receive from their course T.A. during three checkpoints throughout the semester to determine its influence on achieving course outcomes and student satisfaction. This study will provide BYU Online with a data-driven way to evaluate checkpoints and ultimately influence policy and practice.

Method

Research Questions

There are four questions I am interested in investigating in this study.

1. What do online learning checkpoints look like and how are students experiencing them?
    a. What activities/interactions are occurring in the different checkpoints?
    b. What activities/interactions are most frequently used?
    c. How do the students rate the quality of activities/interactions with the TAs?

2. How do learner characteristics correlate with student perception of checkpoint usefulness and quality of TA interaction?

3. How does student satisfaction with the checkpoint correlate with final grade?

4. How does student perception of interaction quality in the checkpoint correlate with final grade?

Context

Participants for this study will be matriculated Brigham Young University students that have voluntarily enrolled in BYU Online, an online pilot program that has had 8 successful semesters. BYU Online attracts students from all class standings, a diverse number of majors, and an equal number of male and female students. It is estimated that 250 participants will be recruited for this study.

The following 11 BYU Online courses will be used in this study:

- COMMS 300: Media Ethics, Law, and Responsibility (2 sections)
- HLTH 335: Health Behavior and Change
- IHUM 202: Western Humanities
- NDFS 100: Essentials of Nutrition
- PDBIO 210: Human Anatomy
- PSYCH 111: General Psychology
- REL A 212: The New Testament
- REL C 324: The Doctrine & Covenants
- REL C 333: The Living Prophets
- SFL 160: Introduction to Family Processes
- SOC 111: Introductory Sociology

The online courses selected are a mix of 8 General Education, 1 core Communications course, and 1 required Physiology and Developmental Biology course. This mix of courses attracts a diverse population. Eight courses are 3 credit hours each (COMMS 300, HLTH 335, IHUM 202, NDFS 100, PDBIO 210, PSYCH 111, SFL 160, and SOC 111) and 3 courses are 2 credit hours each (REL A 212, REL C 324, and REL C 333). Number of students enrolled in each course varies from a low of 8 to a high of 77 with an average of 34 students enrolled in each course.

Each course has at least one dedicated Teaching Assistant (TA). TA responsibilities include:

- o   Assisting the instructor and students in the course

- o   Providing support to struggling students

- o   Maintaining a consistent 24-hour service-level agreement for email response

- o   Planning and conducting course meetings, including the in-person orientation meeting

- o   Planning and conducting learning checkpoints with students

- o   Critiquing student assignments and providing constructive criticism and praise

- o   Documenting course processes and identifying areas to enhance efficiency

- o   Motivating students to keep up with strict course deadlines

- o   Developing course content and new assignments in tandem with the instructor and instructional designers

- o   Meeting with students individually on an as-needed basis

Each TA has been trained how to conduct a checkpoint and how to use Adobe Connect technology to help ensure successful checkpoint meetings. Frequently used in project

management, the term checkpoint refers to a scheduled meeting at predetermined milestones or intervals. They are used to monitor the progress of the project and to ensure its timely advancement. Project Management checkpoints are structured with specific questions to be answered. Designed after this model, structure has been built into the BYU Online program. Required student checkpoints consist of:

- o Checkpoint 1: Become acquainted with the student, understand student's goals and educational background, and discuss how to succeed in course.
- o Checkpoint 2: Review progress, provide constructive feedback on submissions, answer questions, and ask challenging questions to reinforce student learning.
- o Checkpoint 3: Same as Checkpoint 2

It is anticipated that additional Checkpoints or follow-up appointments will be scheduled as needed.

Data Collection

Participants for this study will be recruited from the 11 BYU Online courses where checkpoints are currently implemented. It is anticipated that full study will begin Winter semester 2016.

Self-report questionnaires that include Likert-type scales, prompts and open-ended questions will be used in this study. For a detailed description of the survey including the name, purpose, types of questions and timetable for the first data collection technique see Appendix A.

When students enter their course for the first time, they will be required to take a learner readiness survey (LRS). Students must complete the survey before they are permitted to access their online course.

At three separate points in time during the semester, students will complete a checkpoint with their course TA. After each checkpoint, a short pulse will be administered separately to the TA (PCP-T) and the student (PCP-S) to report their perceptions of the checkpoint. The TA will report the student grade at time of checkpoint, the length of the checkpoint, and the TA's overall satisfaction with the usefulness of the experience. Additionally, the pulse will include a prompt for the TA to identify specific social, content and procedural activities that occurred during the checkpoint and the percentage of time spent in each of these activities. The TA will report their perception of the quality of interaction with the student and identify ways the checkpoint could have been more beneficial. The student pulse will require the student to rate their overall satisfaction with the checkpoint, the quality of the interaction and identify ways the checkpoint could have been more beneficial.

All TA and student participants will complete an end of course survey. The end of course survey will consist of four Likert-type scale questions and one open-ended question. TA's will complete the (ECS-T) survey for each student participant indicating the usefulness of the checkpoints for that student. Student participants will complete the (ECS-S) survey indicating their perception of the usefulness of the checkpoints.

Demographic variables such as overall GPA, class standing, age, gender and prior distance education experiences will be gathered from university records.

Data Analysis

Table 1 outlines the research questions and the specific data and analysis procedures planned to address each question.

Table 1

Data Analysis

RESEARCH QUESTION	DATA TO COLLECT/INSTRUMENTS	DATA ANALYSIS METHOD
1.What do online learning checkpoints look like and how are students experiencing them?		
a. What activities/interactions are occurring in the different checkpoints?	**Instrument:** TA Post Checkpoint Pulses x3 - Q5 a-c Open Ended	Activities during checkpoint data collected from 3 TA Post Checkpoint Pulses will be coded based on developed coding categories and subcategories. Each response will be labeled and tallied. Patterns and trends will be identified.
b. What activities/interactions are most frequently used?	**Instrument:** TA Post Checkpoint Pulses x3 - Q5 Slider bars	A frequency distribution will be created using the reported percentage of time spent in the 3 TA Post Checkpoint Pulses from question 5.
c. How do the students rate the quality of activities/interactions with the TAs?	**Instrument:** Student Post Checkpoint Pulses x3 - Q2 a-c Likert Scale	An analysis of quality interaction ratings based on data from question 2 responses found in 3 Student Post Checkpoint Pulses will be performed using descriptive statistics. Data will be charted and compared.
2. How do learner characteristics correlate with student perception of checkpoint usefulness and quality of TA interaction?	**Instrument:** Learner Readiness Survey 5 variables – 1 score for each variable Likert scale Student Post Checkpoint Pulses x3 - Q1, Q2 Likert scale Student End of Course Survey - Q1	Strength of the relationship between learner characteristics, checkpoint usefulness and quality of TA interaction will be correlated. Each of the five variables in the learner readiness survey will be correlated with the overall satisfaction with the checkpoint (Student Post Checkpoint Pulse question 1, Student End of Course Survey question 1) and

		the quality of the interaction with TA (Student Post Checkpoint Pulse question 2).
3. How does student satisfaction with the checkpoint correlate with grade improvement across checkpoints?	**Instrument:** Student Post Checkpoint Pulses x3 Q1 Likert scale TA Post Checkpoint Pulses x3 Q2 TA End of Course Survey Q2	Data from question 1 of all 3 Student Post Checkpoint Pulses will be correlated with the student performance outcome data found in TA Post Checkpoint Pulse (question 2) and TA End of Course Survey (question 2).
4. How does student perception of interaction quality in the checkpoint correlate with grade improvement across checkpoints?	**Instrument:** Student Post Checkpoint Pulses x3 Q2 Likert scale TA Post Checkpoint Pulses x3 Q2 TA End of Course Survey Q2	Quality of interaction data found in question 2 from 3 Student Post Checkpoint Pulses will be correlated with performance data (grade) collected from question 2 on 3 TA Post Checkpoint Pulses and question 2 from TA End of Course Survey.

Results

This study evaluated the checkpoints between students and TA's for satisfaction and usefulness.

The following questions were answered: (a) what are the characteristics of checkpoint

interactions between TA and student, (b) how do learner characteristics correlate with student

perceived checkpoint usefulness, (c) how does student satisfaction with the checkpoints correlate

with final grade, and (d) how does student perception of interaction quality in the checkpoint

correlate with final grade?

Research Question 1

To understand the function of a checkpoint, question one was broken down into the following three parts: (a) activities/interactions occurring in the different checkpoints, (b) activities/interactions most frequently used, and (c) the quality of the activities/interactions with TA's.

What activities/interactions are occurring in the different checkpoints? At the end of each checkpoint, students and TAs were asked to classify activities in the checkpoint that built a relationship, facilitated student learning, and answered questions about course logistics. Based on research conducted by Heineman (2005) and Hawkins, et al., (2012), quality of interaction constructs was separated into three global themes. Based on those themes a coding scheme was developed and interactions were determined to be: (a) social, (b) content, or (c) procedural related. This scheme, presented in Table 2, was based on common themes that emerged during the checkpoints.

Table 2

Checkpoint Coding Scheme

		Theme	Sample Quote
1. Social	1.1	Interest/hobby	"I also had the student introduce herself and she told me that she use to fence"
	1.2	School (major, career, classes)	"We got to know each other better by asking questions about school, career options, etc.."
	1.3	Family	"I learned a lot about his schooling, his family, and his wife and how they met"
	1.4	Goals	"We talked about our academic goals and turns out we are both going into dentistry. We were able to talk about the application process and prereqs"
	1.5	Hometown	"Spent a lot of time getting to know her and reminiscing about where she's from in Canada"
	1.6	LDS Mission	"He told me about speaking Chinese on his mission and he has a Chinese minor now"
	1.7	Job	"Talked about her current job working for Campus Relations (the people driving the golf carts around campus)"
	1.8	Health/wellbeing	"She explained that she is taking the course because she has a chronic illness"
2. Content	2.1	Assignment help	"We discussed the first submission and how to do well on the writing assignments."
	2.2	Exam help	"I talked about what type of questions to expect on exam 1"
	2.3	Quizzes	"We talked about ways to improve her quiz scores"
	2.4	Content Questions	"I answered questions on how to write a Reading Response"
	2.5	Study Plan	"I recommended focusing on the learning outcomes and she said that she would do that in her studies"
3. Procedural	3.1	Assignment logistics	"We also talked about how the future checkpoints were going to be held through Adobe Connect as well"
	3.2	Technical issues	"We worked through some technical issues with Adobe Connect"
	3.3	Exam logistics	"I talked about scheduling his midterm"
	3.4	Scheduling/Course Progress	"She had questions about dates and tests, and how early this course can be completed"
	3.5	Navigating Course	"We talked about how to navigate Brainhoney"
	3.6	Procedural Questions	"I answered a few questions about due dates and how grades work in this class"

In the review of the classified checkpoint activities, Figure 1 reveals that procedural (42%) and

social (38%) interactions are predominant in checkpoint 1. Content interactions (19%) are

considerably lower. By checkpoint 2, social interactions (17%) are lower while procedural

(46%) and content (37%) interactions are predominant. Although fewer students completed

checkpoint 3, results are consistent with checkpoint 2 findings. Predominant interactions are

procedural (48%) followed closely by content (40%). Social interactions (13%) are notably

lower.
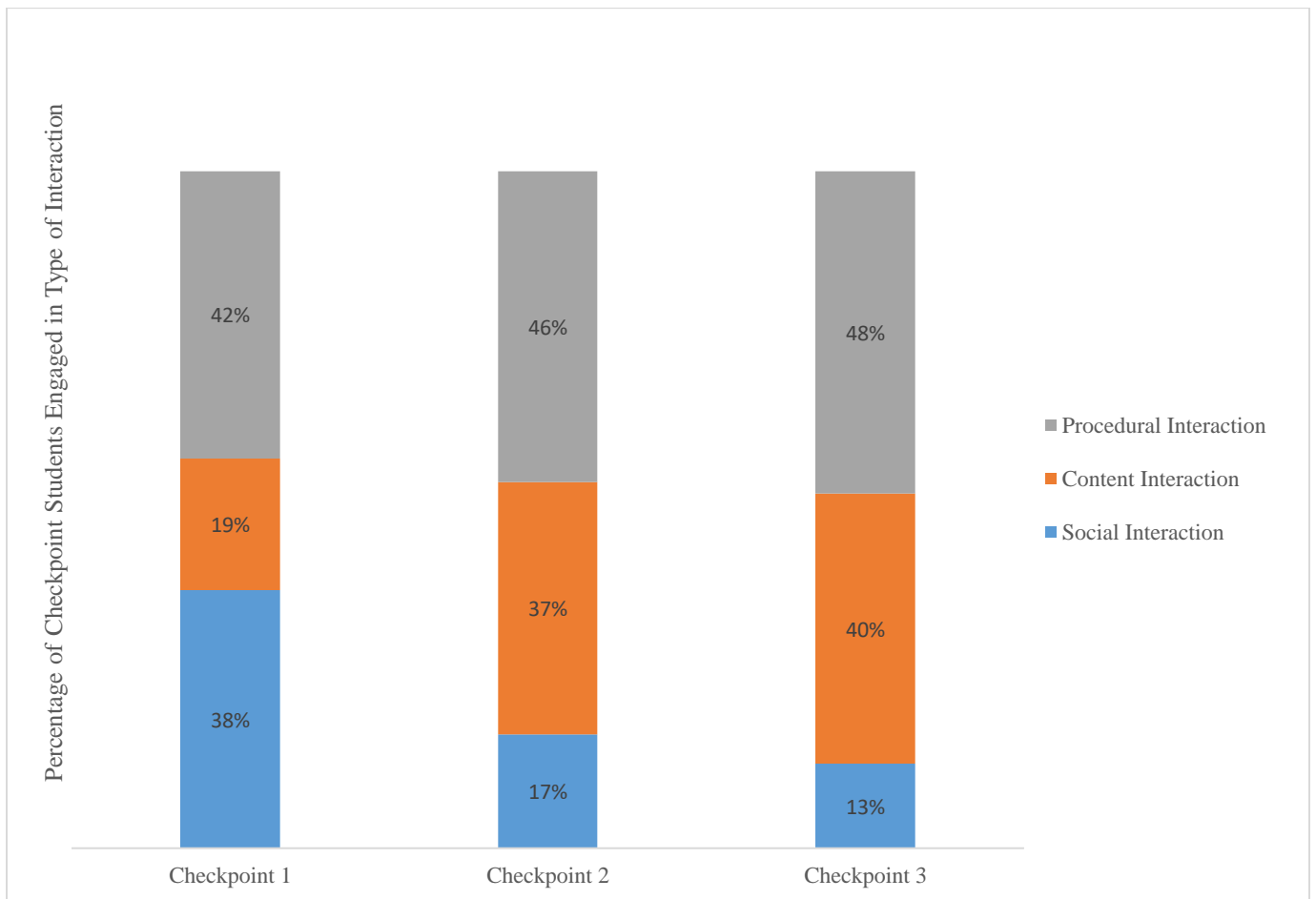
Figure 1. Comparison of Percentage of Student Social, Content and Procedural Interactions Across

Three Checkpoints Checkpoint 1 (N=159), Checkpoint 2 (N=123), and Checkpoint 3 (N=31)

Social Interaction.

What are students and TA's talking during these social interactions? And how does it vary

across checkpoints? Social interaction occurrence across three checkpoints has been

summarized in Figure 2. In review of these interactions, 8 major themes emerged. As expected,

social interactions decreased as the number of checkpoints increased. This is due to the nature of

checkpoints. They are intended to help a student succeed in the course. Once initial

acquaintances are made in checkpoint 1, it is unnecessary to repeat these in subsequent

checkpoints. For example, while "interest/hobby" was an interaction during checkpoint 1 (35%),

checkpoint 2 (7%) and checkpoint 3 (3%) revealed that this interaction did not persist.

This was the case for most of the 8 social interaction themes with two exceptions, "school" and

"health/wellbeing". Both "school" and "health/wellbeing" interactions persisted over

checkpoints but with a slightly different pattern. For example, "school" was an interaction in

checkpoint 1 (67%), checkpoint 2 (20%) and checkpoint 3 (23%), that decreased but did not

disappear. It is speculated that the theme persisted because the student is in school and the

student and TA are discussing school related topics. "Health/wellbeing" revealed a different

pattern across checkpoints. For example, checkpoint 1 (6%) was low with an uptick at

checkpoint 2 (28%) and decline at checkpoint 3 (16%). It is speculated that at the beginning of

the semester when checkpoint 1 occurs, students are generally healthy and not as stressed and

they could be at midterms when checkpoint 2 occurs. At the point in time checkpoint 3 occurs, it

is close to finals and although an expected stressful time for students, it is a means to an end.
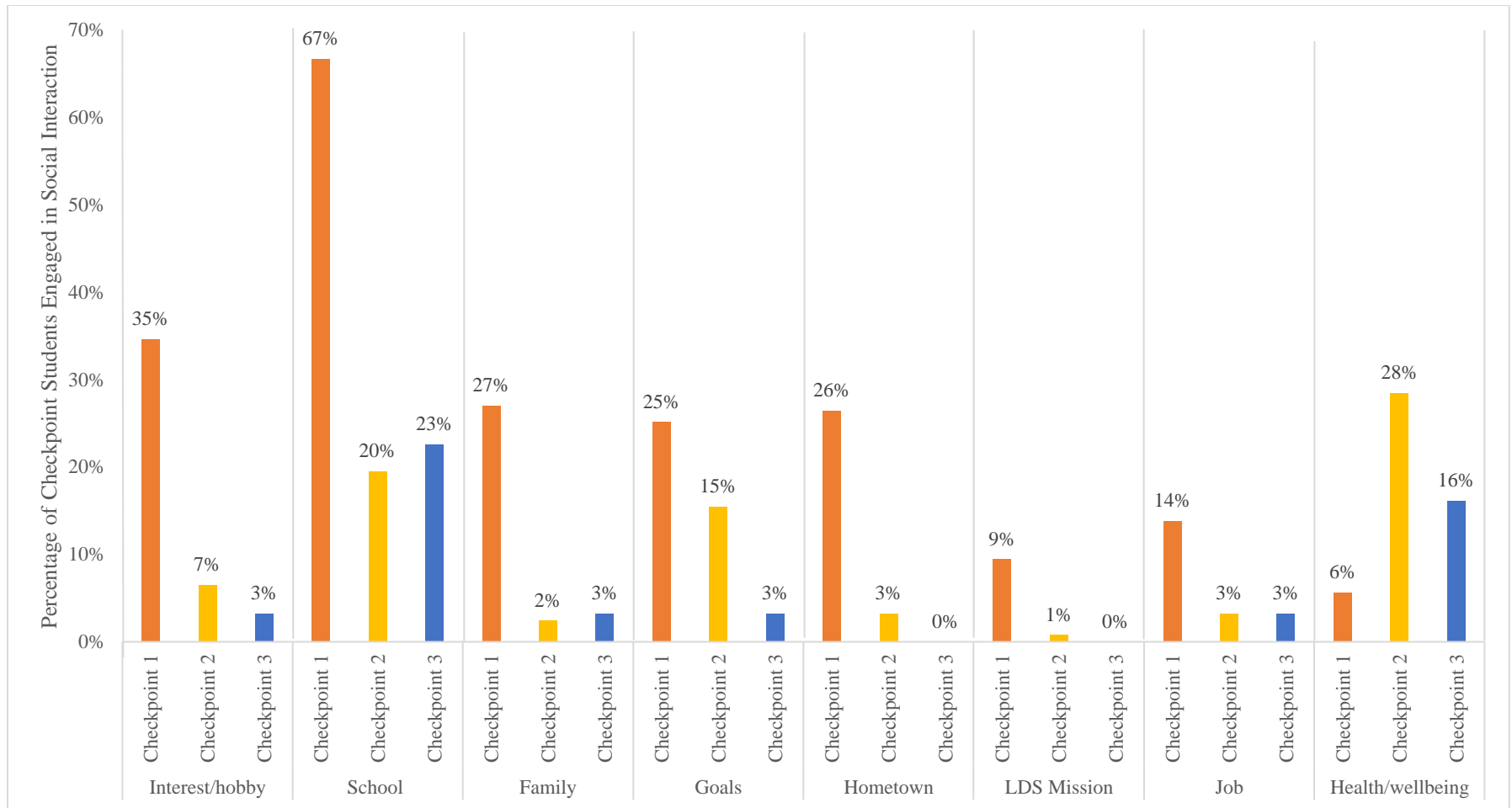
Figure 2. Social Interaction Occurrence Across Three Checkpoints Checkpoint 1 (N=159), Checkpoint 2 (N=123), and Checkpoint 3 (N=31) Note: Numbers for each checkpoint can add up to more than 100% because social interaction may have occurred around multiple themes.

Content Interaction.

Content interaction occurrence across three checkpoints has been summarized in Figure 3. In

review of these interactions, five major themes emerged. It was speculated that content

interactions would increase as the number of checkpoints increased. However, this pattern did

not emerge across all five themes. While there are many reasons why this could have happened

perhaps it was the result of well-designed courses or simply that students emailed their TA's as

content related issues emerged. It seems reasonable to expect specific themes to ebb and flow

with the point in time the checkpoint occurred in the semester. For example, it would be

expected that "exam" interactions would be less prevalent during checkpoint 1 (9%) and surge

particularly at checkpoint 2 (41%) with much more emphasis at checkpoint 3 (81%). This

rationale is consistent with "study plan" (24%, 34%, and 39%) as it follows an upward trend.

Results in the other three themes (Assignments, Quizzes, and Content Questions) each followed

their own pattern. "Assignments" (32%, 63%, and 32%) surged at checkpoint 2. It is logical to

surmise that due to the point in time checkpoint 2 occurred "Assignments" would be a

reasonable topic to discuss. "Quizzes" had a gradual decline (10%, 7%, and 0%) as would be

expected. "Content Questions" (31%, 32%, and 13%) had a sharp drop in checkpoint 3 as

expected. It is plausible that at this point in time the decline in an indication of student content
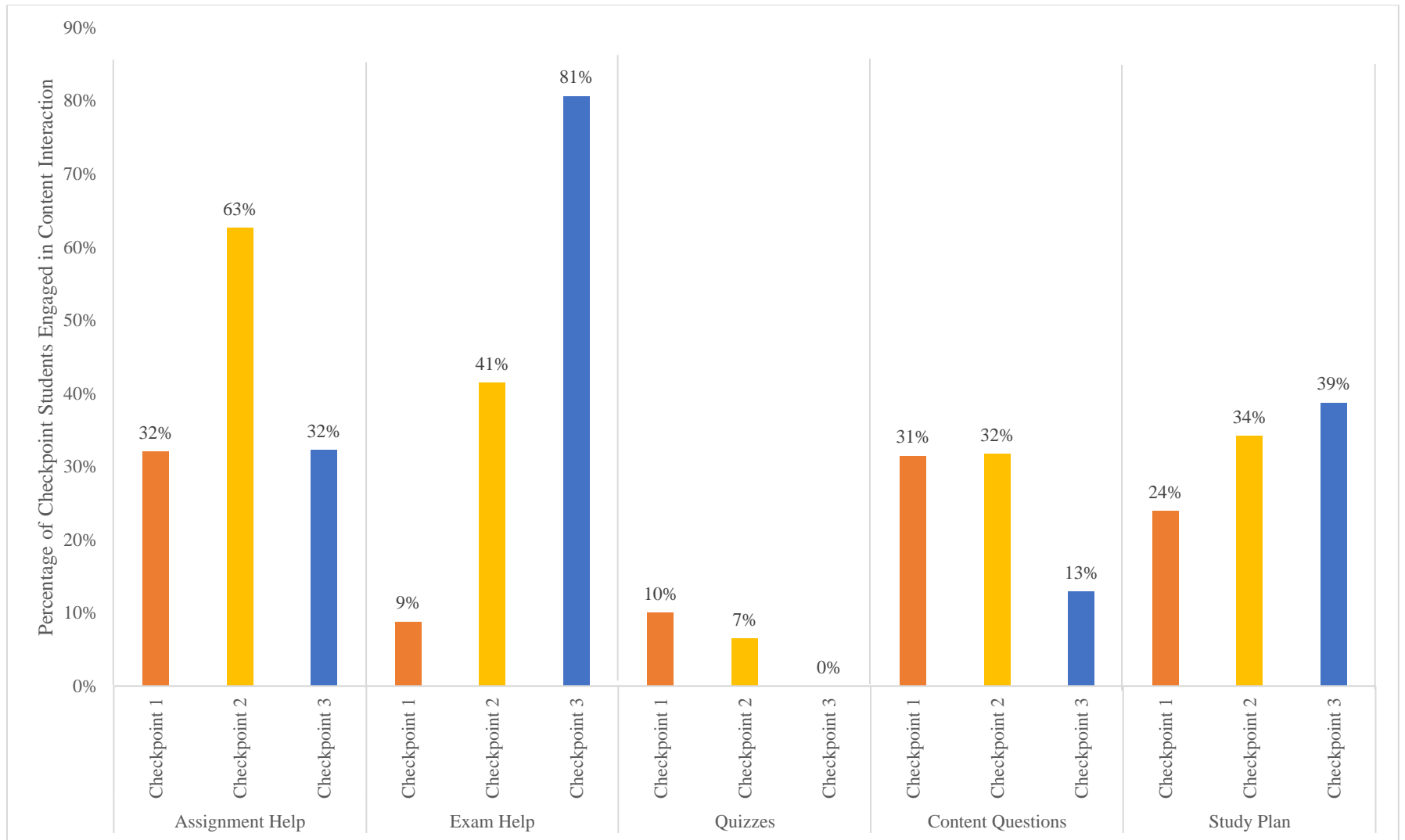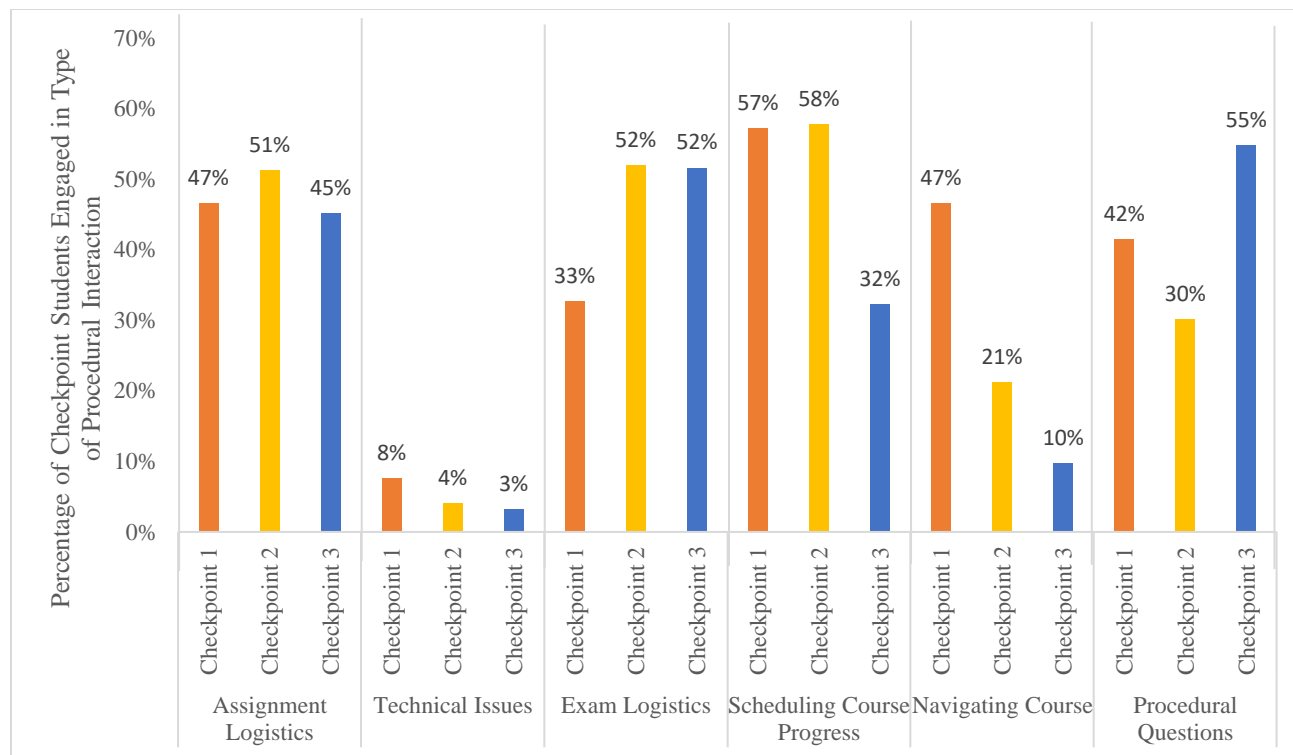
mastery.

Figure 3. Content Interaction Occurrence Across Three Checkpoints Checkpoint 1 (N=159), Checkpoint 2 (N=123), and Checkpoint 3 (N=31)

Note: Numbers for each checkpoint can add up to more than 100% because content interaction may have occurred around multiple themes.

Procedural Interaction.

Similarly, procedural interaction occurrence appears to ebb and flow with the semester. Procedural interactions across three checkpoints has been summarized in Figure 4. In review of these interactions, 6 major themes emerged. "Assignments" maintained consistency across three checkpoints (47%, 51%, 45%). Students are generally motivated to ask procedural questions relating to an assignment. "Technical issues" declined over time (8%, 4%, 3%) as would be expected. Once students are familiarized with the technology utilized in their course, they can maneuver the technology with greater ease. "Exams" was consistent (33%, 52%, 52%) with checkpoint 1 being the lowest. This seems reasonable to speculate that the increase from checkpoint 1 (33%) to checkpoint 2 (52%) may be due to the point in the semester checkpoint 2 occurs, just prior to midterm. A student new to online learning at the university may seek to clarify the required steps to take a midterm exam. "Scheduling/Course Progress" (57%, 58%, 32%) was consistent for the first two checkpoints with a drop for the third. From a logistical standpoint, students would be interested in discussing the schedule for future checkpoints as well as timing of upcoming assignments, tests and quizzes. By the third checkpoint, students do not have many of those lingering concerns. It stands to reason that "Navigating Course" (47%, 21%, 10%) would experience a gradual decline. Again, students new to online learning would have these types of questions that would quickly be resolved over the course of a few weeks. Due to its general nature, "General Procedural Questions" (42%, 30%, 55%) seems likely to remain consistent throughout the semester as students strive to make use of the personal time they have with their TA in a checkpoint. Often these questions were more clarification in nature, meaning students were confirming what they already knew just to be certain they were on track.

Figure 4. Procedural Interaction Occurrence Across Three Checkpoints Checkpoint 1 (N=159),

Checkpoint 2 (N=123), and Checkpoint 3 (N=31) Note: Numbers for each checkpoint can add

up to more than 100% because procedural interaction may have occurred around multiple

themes.

What activities/interactions are most frequently used? At the end of each checkpoint,

students and TAs were asked to report the percentage of time spent engaged in activities that

built a relationship, facilitated student learning, and answered questions about course logistics.

Patterns and trends of time spent in checkpoints are described in terms of percentage of time

spent in social, content and procedural interaction in Table 3.

As expected, the average percentage of time spent in procedural interaction is steady across three

checkpoints (24%, 29%, and 27%). Further, the average percentage of time facilitating student

learning goes up across three checkpoints (26%, 60%, and 66%). Finally, the average percentage

of time used to build a relationship decreased across three checkpoints (50%, 10%, and 7%).

These finding are consistent with the classified checkpoint activities found in Figure 1. Standard

deviation for percentage of time spent in social, content and procedural activities are all normally

distributed. On a 5-point scale, the average quality of interaction consistently decreases over

checkpoints (4.25, 4.14, and 4.03). Of interest is the average number of minutes across

checkpoints. Checkpoint 2 (11 minutes) is shorter in duration than checkpoint 1 (14 minutes)

and checkpoint 3 (13 minutes).

Table 3
Patterns and trends in checkpoints.

Measure	Checkpoint1 n=159	Checkpoint2 n=123	Checkpoint3 n=31
	Averages (SD)		
Average percentage of time spent in procedural interaction	23.7 (17.8)	28.8 (17.2)	26.5 (16.9)
Average percentage of time facilitating student learning	25.5 (20.9)	59.8 (20.8)	65.7 (21.5)
Average percentage of time used to build a relationship	49.62 (20.3)	10.42 (8.7)	7.16 (9.7)
Average quality of interaction rated by the TA	4.24	4.14	4.03
Average number of minutes	13.7	10.64	13.45

How do the students rate the quality of activities/interactions with the TAs? At the end of

each checkpoint, students were asked to rate the perceived quality of activities/interaction

engaged with their TA. Results summarized in Table 4 indicate that students consistently across

three checkpoints rated the quality of interaction with their TA (4.5, 4.5, and 4.6) higher than

their TA rated the quality of interaction, presented in Table 2, with their students (4.2, 4.1, and

4.0). Interestingly, students' ratings of quality interactions at checkpoint 3 (4.63) is at its highest

while TA ratings of quality in checkpoint 3 (4.03) is at its lowest of the three checkpoints. These

results underscore that students place more value in checkpoints than their TA's.

Table 4

Student Perception of Quality of activities/interactions with TA

Measure	Quality of Interaction With TA Checkpoint 1	Quality of Interaction With TA Checkpoint 2	Quality of Interaction With TA Checkpoint 3
Mean	4.54	4.51	4.63
Median	5	5	5
Minimum	1	1	3
Maximum	5	5	5
Standard Deviation	0.74	0.76	0.66
N Valid	309	296	82
N Missing	107	120	334

Research Question 2

To understand if learner characteristics correlated with student perception of checkpoint

usefulness and quality of TA interaction, each of the five variables in the LRS were correlated

with course grade, the overall satisfaction and usefulness with the checkpoint. Results in Table 5

indicate that course grade was correlated with self-directed learning variable from the LRS (.199,

p>.01). It seems clear that LRS is not a good predictor of course grade or the degree to which a

student is satisfied with checkpoints. However, student perception of checkpoint usefulness was

correlated with student perception of quality of interaction with their TA (.433, p>.01). Further,

student report of checkpoints keeping them on track correlated with both student perception of

quality of interaction with their TA (.325, p>.01) and student perception of checkpoint usefulness

(.815, p>.01). Data seems clear that students perceive quality and usefulness in checkpoints and

are satisfied with the experience.

Table 5

Learner characteristics correlated with student perception of checkpoint usefulness and quality of TA interaction

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Course Grade	-														
2	Computer Self-efficacy	-0.021	-													
3	Online Communication Self-efficacy	-0.001	.392**	-												
4	Learner control in an online context	0.065	.134*	.192**	-											
5	Motivation for learning in an online context	-0.053	.324**	.415**	.302**	-										
6	Self-directed Learning	.199**	0.082	.244**	.491**	.407**	-									
7	Average TA quality of interaction with student	-0.075	-0.14	0.026	0.097	0.159	0.048	-								
8	Average student quality of interaction with TA	.121*	0.039	0.013	-0.069	.153*	0.073	.194**	-							
9	Checkpoints were useful for me.	0.096	0.081	-0.004	-0.012	0.043	0.081	0.078	.433**	-						
10	Checkpoints helped me to stay on track in the course.	0.016	0.04	-0.07	-0.002	-0.002	0.046	0.002	.325**	.815**	-					
11	I utilized the checkpoints to succeed in the course.	0.083	0.079	0.032	0.099	0.129	0.131	0.096	.387**	.802**	.769**	-				
12	I would have liked _____ checkpoints during the semester.	.189**	-0.072	0.001	0.05	-0.051	0.136	0.087	.314**	.551**	.480**	.472**	-			
13	Average of: My Ta seemed interested in me as an individual	.275**	0.013	-0.017	.238**	.154*	.162*	-0.07	.668**	.401**	.402**	.373**	.239**	-		
14	Average of: My TA gave helpful feedback to me	.276**	0.044	0.01	.235**	.165*	.178**	-0.046	.698**	.412**	.435**	.364**	.303**	.979**	-	
15	Average of: My TA clearly communicated what I am expected to do on class assignments.	.262**	0.062	-0.009	.256**	.166*	.193**	-0.061	.631**	.403**	.438**	.362**	.262**	.971**	.980**	-

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Research Question 3

To understand if student satisfaction with the checkpoint correlates with the students' final grade

student satisfaction student performance outcome data was correlated with perceived student

satisfaction. Table 6 has the descriptive statistics and correlations of the variables of interest. Of

note, the quality of interaction is not statistically significant to the outcome of grade (-0.075, p >

.1). However, total cumulative credits are statistically significant to the outcome of grade (0.176,

p>.01). Further, student satisfaction is statistically significant with TA perception of quality of

interaction (0.179, p>.05). While age and marital status is statistically significant (0.358, p>.01),

both marital status (0.223, p>.01) and age (0.220, p>.01) are statistically significant with total

cumulative credits. Results seem to point to older, married, more seasoned students find

satisfaction with checkpoints regardless of outcome of grade.

Table 6

Correlation table and descriptive statistics of student final grade, student satisfaction and student performance outcome data

Measure	1	2	3	4	5	6
1. Grade the student earned in their course Winter 2016	1					
2. Average TA Post-Checkpoint Pulse Quality of Interaction With Student	-0.075	1				
3. Student Average Satisfaction (Scale from 1 to 5)	0.049	0.179*	1			
4. Total Cumulative Credits	0.176**	-0.007	-0.004	1		
5. Marital Status (Zero is single, one is married, two is divorced)	0.07	0.048	-0.039	0.223**	1	
6. Age During Semester	0.059	0.135	0.057	0.220**	0.358**	1
Mean	3.395	4.228	4.415	106.611	0.410	22.760
Std. Deviation	0.820	0.498	0.762	35.682	0.502	3.164
Minimum	0	2.5	1	3	0	18
Maximum	4	5	5	194	2	55
n	416	182	351	416	416	416

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Research Question 4

To understand if student satisfaction with the checkpoint correlates with the students' final grade multiple regression analysis were performed and results are found on Table 7. Of main interest the student average satisfaction is not a significant predictor of end of course grade (B = 0.016, β = 0.015, p = 0.767). However, total cumulative GPA was statistically significant (B = 0.833, β = 0.454, p = 0.000). This means that for every one standard deviation increase in GPA the final grade increases by 0.454 standard deviations. Also of significance was age during semester (B = 0.017, β = 0.069, p = 0.006), number of checkpoints students completed (B = 0.123, β = 0.139, p = 0.000), average social across 3 checkpoints (B = 0.006, β = 0.158, p = 0.006). Unexpectedly, the average content across 3 checkpoints was negatively predictive (B = -0.009, β = 0.454, p = 0.006). LRS items (computer self-efficacy, online communication self-efficacy, learner control in an online context, motivation for learning in an online context, and self-directed learning) were not predictive of satisfaction on course grade.

Table 7

Multiple regression results of satisfaction on course grade (n = 416 students, 12 classes, R^2 = 0.330). Nesting controlled for by TYPE = COMPLEX in Mplus 8.0

Variables	Unstandardized Beta (B)	S.E.	Standardized Beta (β) [a]
Student average satisfaction out of five	0.016	0.053	0.015
Total cumulative GPA	0.833**	0.106	0.454
Female	0.172~	0.097	0.105
Number of credit hours taken that semester	0.010	0.010	0.046
Marital Status	0.041	0.085	0.025
Age During Semester	0.017**	0.006	0.069
Total cumulative credits	0.002	0.002	0.076
Student completed how many checkpoints	0.123**	0.024	0.139
Average Procedural across 3 checkpoints	-0.003	0.004	-0.075
Average Social across 3 checkpoints	0.006**	0.002	0.158
Average Content across 3 checkpoints	-0.009**	0.003	-0.164
Average Post-checkpoint Pulse TA Quality of Interaction With Student	-0.053	0.127	-0.033
Learner Readiness: Computer self-efficacy sub score	-0.258	0.358	-0.042
Learner Readiness: Online communication self-efficacy sub score	0.050	0.401	0.009
Learner Readiness: Learner Control Sub score	-0.376	0.474	-0.058
Learner Readiness: Motivation sub score	-0.575	0.480	-0.075
Learner Readiness: Self-directed Learning sub score	0.731~	0.416	0.102

** Significant at $p<0.01$, *Significant at $p<0.05$, ~ Significant at $p<0.10$.   [a] Standardized betas as produced by Mplus.

To understand if student perception of interaction quality with the checkpoint correlates with the students' final grade multiple regression analysis were performed and results are found on Table 8. Of interest is that average post-checkpoint pulse student quality of interaction with TA was marginally significant (B = 0.116, β = 0.097, p = 0.061). Of significance was total cumulative GPA (B = 0.824, β = 0.450, p = 0.000), age during semester (B = 0.016, β = 0.062, p = 0.010), number of checkpoints students completed (B = 0.119, β = 0.135, p = 0.000). Unexpectedly, the average content across 3 checkpoints was negatively predictive (B = -0.009, β = -0.163, p = 0.005). While the majority of LRS items (computer self-efficacy, online communication self-efficacy, learner control in an online context, and motivation for learning in an online context) were not predictive of quality on course grade, surprisingly self-directed learning sub score was found to be marginally significant with course grade (B = 0.711, β = 0.099, p = 0.084).

Table 8

Multiple Regression results of quality on course grade (n = 416 students, 12 classes, R^2 = 0.331). Nesting controlled for by TYPE = COMPLEX in Mplus 8.0

Variables	Unstandardized Beta (B)	S.E.	Standardized Beta (β)
Average Post-checkpoint Pulse Student quality of interaction with TA	0.116~	0.062	0.097
Total cumulative GPA	0.824**	0.104	0.450
Female	0.158	0.099	0.097
Number of credit hours taken that semester	0.010	0.010	0.049
Marital Status	0.039	0.084	0.024
Age During Semester	0.016**	0.006	0.062
Total cumulative credits	0.002	0.002	0.081
Student completed how many checkpoints	0.119**	0.023	0.135
Average Procedural across 3 checkpoints	-0.004	0.003	-0.094
Average Social across 3 checkpoints	0.005*	0.002	0.137
Average Content across 3 checkpoints	-0.009**	0.003	-0.163
Average Post-checkpoint Pulse TA Quality of Interaction With Student	-0.089	0.134	-0.056
Learner Readiness: Computer self-efficacy sub score	-0.259	0.357	-0.042
Learner Readiness: Online communication self-efficacy sub score	0.063	0.393	0.011
Learner Readiness: Learner Control sub score	-0.296	0.468	-0.046
Learner Readiness: Motivation sub score	-0.634	0.467	-0.083
Learner Readiness: Self-directed Learning sub score	0.711~	0.412	0.099

** Significant at $p<0.01$, *Significant at $p<0.05$, ~ Significant at $p<0.10$. [a] Standardized betas as produced by Mplus.

In conclusion, checkpoint quality and student satisfaction with checkpoints do not correlate with final grade.

Discussion and Critique

The purpose of this study was to understand the nature and effectiveness of T.A. - student checkpoint interactions. Specifically, this research sought to understand how students and T.A.'s perceive the value of these interactions. Further, an in-depth understanding would facilitate the development of guidelines to govern checkpoint interactions that may lead to productive use of T.A. and student resources.

Despite the strong research design and strong theoretical connection, the main limitation was implementation. The implementation had several challenges. Results of the study seemed to indicate that students who participated in all checkpoints tended to value them. However, there was a lot of attrition in this study. Therefore, we experienced lower than anticipated sample size. Although complex and multifaceted, it appeared there were two main contributing factors for the attrition in this study, lack of faculty and TA support. As the semester progressed, some faculty were not as supportive of the time investment and either did not enforce the checkpoints or simply cancelled them. This could have been because they did not understand the study or see the value of the interaction. This is definitely an area I could have improved. I did not involve the faculty enough in the study. I needed faculty buy-in. I could have updated them periodically with preliminary findings. Perhaps they would have seen the value of these interactions and been more supportive and not considered them a disruption to student learning.

The other main contributing factor was the TA's themselves. Conducting checkpoints required organization and time management skills on the part of the TA. TA's were responsible to schedule the checkpoints with the students in their class. As was evident with the very low sample size in Checkpoint 3 data, some TA's reported that they were just concluding Checkpoint 2 shortly before the end of the semester and did not have time to complete Checkpoint 3. Greater

training may have helped to mitigate this problem. TA's were also responsible to fill out a checkpoint survey at the conclusion of each checkpoint. Some TA's chose to procrastinate completing the survey and either did not end up completing the survey or did not complete it thoroughly, which contributed to the missing data. We do not know about the contributing factors that influenced non-participating students. Speculating, those students who did not participate at all or who only completed one or two checkpoints may have been valuing their time over participation. Some students sign up for online classes with the assumption and intent on being autonomous. Perhaps these students did not see the value of the checkpoint or they may have even been discouraged from participating by their TA or instructor. Sometimes students need to be encouraged to do things that are valuable for them. Further research is needed to determine student contributing factors.

Dealing with the missing data was extremely challenging and quickly escalated to well above my statistical abilities. After significant consultation with Dr. Ross Larsen, a plan was devised to treat the missing data appropriately. In the end, it was determined that publishing the research would not be possible due to the significant factors mentioned above.

Regardless of the challenges, there were some valuable insights. The initial set of research questions examined the anatomy of an online learning checkpoint. Particular interest focused on what checkpoints look like and how students experience them. More specifically, what activities/interactions occurred in the different checkpoints, what activities/interactions were most frequently used and how students rated the quality of activities/interactions with their TA's.

As expected, procedural and social interactions were most predominant during the first checkpoint. From a practical standpoint, it seems reasonable that at the beginning of a

semester students and TA's would focus primarily on relationship building followed by procedural issues pertaining to successful navigation through the course and very little focus on content interaction like facilitating student learning activities such as assignment or exam help or content related questions. As this was an introductory meeting, it was the longest checkpoint indicative of more types of interactions to cover.

The second and third checkpoint results indicated the inverse with most time spent on facilitating students learning activities, followed by procedural issues and lastly, relationship building. Again, this pattern was expected due to the time in the semester with midterms.

Interestingly, fewer students completed the third (final) checkpoint. Typically, this last checkpoint should be conducted just prior to final exams. At first glance, perhaps this feedback is implying checkpoints lack quality or value. However, further analysis indicated that students rated the quality of the TA interaction 4.5 or higher out of 5. It is important to note that the quality of interaction was not statistically significant to the final grade. Older, married, more seasoned students found satisfaction with checkpoints regardless of grade. This could be chalked-up to student maturity. It may be that older students find value in bonus help. These online classes had a higher percentage of seniors followed by juniors, as these students are able to register for classes first. By the time sophomores and freshmen are able to register most of the online classes were already full.

Interestingly, TA's perceptions of quality with the students were always lower than students' perceptions. In fact, TA's quality ratings decreased each checkpoint. This leads us to wonder if TA's increasingly underestimate the perceived value of the checkpoint. This positively correlates with the decreased time spent in building a relationship (approx. 7

minutes time 1 and only 1 min time 2 and 3) and TA rated quality of interaction with

student. Though student rated quality is consistently higher than TA's across all three

checkpoints – this could be an indication that students value different things at different

points in the semester and are satisfied with checkpoints. Based on reported TA

perceptions, it is possible that TA's did not allow enough time to conduct checkpoints at the

end of the semester.

Another point considered in this study was the value of administering a learner readiness survey.

Results from this study indicated that the learner readiness survey was not a good predictor of

course grades. This could be that the particular learner readiness survey administered is not a

good predictor of success in an online course. It could also mean that TA's in the online class

were able to fill in the gaps where students would typically stumble. Further research needs to

be done to find out what indicators are predictive of online learner readiness.

Conclusion

The initial overarching aim of this study was to understand how students and TA's

perceive the value of checkpoint interactions. While recognizing the limitations of our analysis,

we believe that there are areas to follow-up on. For example, checkpoints may be an effective

strategy for keeping students on track. We learned that with faculty support, TA's are successful

in facilitating interactions with students.

With additional training, TA's can come to understand the important role they have in the

online class. Students are satisfied and find these interactions useful. Student checkpoints with

TA's increases interaction in an online class. Students get to know their TA and are satisfied

with the opportunity to ask clarifying questions related to procedural matters or issues with

content in their online class. While checkpoints may not correlate with final grade, students are

satisfied with the value and quality they are receiving which can result in higher course completions. It may be that only certain students are required to do checkpoints until they meet a certain threshold. Further research is needed in identifying students who will benefit from these strategies.

There are interventions that can be handled at the program level. For example, automated emails could be sent to students reminding them to sign up for their checkpoint at three regular intervals. This would help to keep TA's on track for conducting all three checkpoints. This is an area for future research particularly as it pertains to the cost of human interaction. There may be more cost effective interventions to accomplish the same goal. For example, can parts of the checkpoint be automated? Could students fill out a required survey identifying areas they are struggling with. TA's could follow-up on these requests making efficient use of the checkpoint time allotted.

Like anything else in life there are challenges in research. As human agents, we choose how to respond. This study provided many learning opportunities. Choosing to learn from the challenges and mistakes increases the chance that I will never repeat them. If I never repeat them then this study was a success.

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APPENDIX A: **Instruments**

SURVEY NAME	PURPOSE	TYPES OF QUESTIONS	WHEN ADMINISTERED
Learner Readiness Survey (LRS)	To determine online learner readiness.	Likert scale: Sample questions: I carry out my own study plan. I seek assistance when facing learning problems. (See Appendix A)	Beginning of semester
Post Checkpoint Pulse - TA (PCP-T)	To identify the student, grade at time, length of checkpoint. To identify T.A.s perception of the satisfaction/ usefulness of the current checkpoint. To identify the type of interaction (procedural, content and/or social)	Student name, current grade in class, checkpoint start and finish time. Likert scale Sample questions: This checkpoint was useful in helping the student to be successful. Open-ended/slider bar: Identify activities to build social. Slider scale for percentage of checkpoint. Identify activities to facilitate learning content. Slider scale for percentage of checkpoint.	Immediately after each checkpoint

		Identify activities to help with course logistics. Slider scale for percentage of checkpoint.

Likert scale Perceived Quality of interaction:

I was interested in the student as an individual.

I gave helpful feedback to the student.

I clearly communicated what the student is expected to do on class assignments.

Open ended: In what ways could this checkpoint have been more beneficial for the student? | |
| **Post Checkpoint Pulse - Student (PCP-S)** | To identify students' perception of the usefulness (quality) of the current checkpoint.

To identify the type of interaction (procedural, content and/or social) and ways to improve. | Likert scale (5 point)

Sample question:

How helpful was this checkpoint?

Statement related to procedural, content, social.

My TA seemed interested in me as an individual. | Immediately after each checkpoint |

		My TA gave helpful feedback to me. My TA clearly communicated what I was expected to do on class assignments Open ended: In what ways could this checkpoint have been more beneficial for you?	
End of Course Survey - TA (ECS-T)	To identify T.A.s <u>overall</u> perception of the usefulness of the checkpoints <u>for each student</u>.	Student name and final grade in the course. Likert scale Sample questions: Checkpoints were useful for this student. This student stayed on track in the course. This student utilized the checkpoints to succeed in the course. Opened Question: In what ways could checkpoints have been more beneficial for this student?	End of semester

End of Course Survey - Student (ECS-S)	To identify students' <u>overall</u> perception of the usefulness (quality) of the three checkpoints.	Likert scale: Sample question: Checkpoints were useful for me. Checkpoints helped me to stay on track in the course. I utilized the checkpoints to succeed in the course. I would have liked (#) of checkpoints during the semester. Opened Question: In what ways could checkpoints have been more beneficial for you?	End of semester

APPENDIX B: Sample Surveys

Learner Readiness Survey (LRS)

Computer/Internet self-efficacy
1. I feel confident in performing the basic functions of Microsoft Office programs (MS Word, MS Excel, and MS PowerPoint).
2. I feel confident in my knowledge and skills of how to manage software for online learning.
3. I feel confident in using the Internet (Google, Yahoo) to find or gather information for online learning.

Self-directed learning
1. I carry out my own study plan.
2. I seek assistance when facing learning problems.
3. I manage time well.
4. I set up my learning goals
5. I have higher expectations for my learning performance.

Learner control (in an online context)
1. I can direct my own learning progress.
2. I am not distracted by other online activities when learning online (instant messages, Internet surfing).
3. I repeated the online instructional materials on the basis of my needs.

Motivation for learning (in an online context)
1. I am open to new ideas.
2. I have motivation to learn.
3. I improve from my mistakes.
4. I like to share my ideas with others.

Online communication self-efficacy
1. I feel confident in using online tools (email, discussion) to effectively communicate with others.
2. I feel confident in expressing myself (emotions and humor) through text.
3. I feel confident in posting questions in online discussions.

Additional Questions:
1. I like the flexibility of accessing the class content anytime online
2. I prefer technology in classes
3. I choose based on the instructor, not the modality
4. Online courses "fit" in my schedule
5. I have no choice because some are only online courses
6. I like the convenience of not coming to campus as much
7. Other (please explain):

Six subscales:

- Computer/Internet self-efficacy

- Self-directed learning

- Learner control (in an online context)

- Motivation for learning (in an online context)

- Online communication self-efficacy

- Reason for taking an online class

Items are rated on a five point Likert scale 1 (very unlike me) to 5 (very like me) with higher scores indicating greater levels of readiness, more independence and more positive attitudes to learning.

Post Checkpoint Pulse – Student (PCP-S)
[after EACH checkpoint]
[3 questions]

1.   Overall satisfaction with checkpoint experience: [5 point Likert scale]

This checkpoint was useful in helping me to be successful.

2.   Quality of interaction with TA (How student feels) [5 point likert scale]

A. Social:

My TA seemed interested in me as an individual.

B. Content:

My TA gave helpful feedback to me.

C. Procedural:

My TA clearly communicated what I am expected to do on class assignments.

3.   Open ended Question:

In what ways could this checkpoint have been more beneficial for you?

Post Checkpoint Pulse – TA (PCP-TA)
[after EACH checkpoint]
[7 Questions]

1.   Student Name:

2.   Student Grade (at time of this checkpoint):

3.   Start time:
          Finish time:

4.   TA's overall satisfaction/usefulness with checkpoint experience: [5 point Likert scale]

This checkpoint was useful in helping the student to be successful.

5.   Activities during checkpoint: (based on Heinemann) Open ended/slider bar

A.   Social Interaction
*Identify what you did during the checkpoint to build a relationship with the student
(e.g., found out about goals, became acquainted with an aspect of the student's life, shared
something about my life . . .) Be specific.*

*Approximately what percentage of your checkpoint time was spent in these types of social
interactions?*
percentage slider.

B.   Intellectual Interaction (Content)
*Identify what you did during the checkpoint to facilitate student learning
(e.g., answered questions about the content, gave feedback on submissions, explained course
concepts, asked questions about student understanding, . . .) Be specific.*

*Approximately what percentage of your checkpoint time was spent in these types of content
interactions?*
percentage slider.

C.   Organizational Interaction (Procedural)

Identify what you did during the checkpoint to answer questions about course logistics (e.g., answer questions about due dates and grades, help with technical problems, help with how to use LMS for accessing content, taking exams, communication, etc.,) Be specific.

Approximately what percentage of your checkpoint time was spent in these types of procedural interactions?
percentage slider.

6.   Quality of interaction with student [5 point Likert scale]

A. Social:

I was interested in the student as an individual.

B. Content:

I gave helpful feedback to the student.

C. Procedural:

I clearly communicated what the student is expected to do on class assignments.

7.   Open ended Question:

In what ways could this checkpoint have been more beneficial for the student?

End Of Course Survey – TA (ECS-T)
[end of semester]
[6 Questions]

1.   Student Name:

2.   Student Final Grade:

3.   Overall perception of usefulness (quality) of checkpoints [5 point Likert scale]

   A. Checkpoints were useful for this student.
   B. This student stayed on track in the course.
   C. This student utilized the checkpoints to succeed in the course.

4.   Open ended question:
       In what ways could checkpoints have been more beneficial for this student?

End Of Course Survey - Student (ECS-S)
[end of semester]
[5 Questions]

1.   Overall perception of usefulness of checkpoints [5 point Likert scale]

      A.   Checkpoints were useful for me.
      B.   Checkpoints helped me to stay on track in the course.
      C.   I utilized the checkpoints to succeed in the course.
      D.   I would have liked (#) of checkpoints during the semester.

2.   Open ended question:
      In what ways could checkpoints have been more beneficial for you?

APPENDIX C: Budget and Timeline

Budget

Who	Total Estimated Hours	Total Dollar Amount
Carolyn Andrews, PhD candidate, BYU Online Program Administrator	200	$7,200
Charles Graham, IP&T Department Chair and Project Chair	100	$5,000
Ross Larsen, IP&T Faculty and Lead Statistician	25	$1,250
Kyle Martin, BYU Online Student Employee	100	$1,500
Total	425	$14,950

Timeline

Topic Selection	12/14
Research & Project Writing	1/15-4/15
Prepare step-by-step methodology and instrument design	7/15-10/15
Institutional Review Board (IRB) Paperwork	12/15
Data Collection	1/16-4/16
Data Analysis	9/16-12/16; 4/17-8/17
Writing Results	4/17-8/17
Discussion and Conclusion	11/18-12/18