TABLETOP GAMES AND 21ST CENTURY SKILL PRACTICE IN THE UNDERGRADUATE CLASSROOM

Mark Hayse, Ph.D.

MidAmerica Nazarene University

Keywords: 21st century skills, collaboration, communication, critical thinking, debriefing, tabletop game studies

Abstract: In the undergraduate classroom, tabletop games can aid both teaching and learning—especially when accompanied by debriefing exercises following gameplay. In particular, tabletop games can enable undergraduate learners to practice the 21st century skills of collaboration, communication, and critical thinking. This qualitative study examines three cases from the disciplines of practical theology, systematic theology, and history, utilizing the methods of classroom video recordings, written assessments from students and professors, and student debriefing exercises. In this study, undergraduate students (*n* = 46) and undergraduate professors (*n* = 3) reflect upon and self-report their experience playing tabletop games in the classroom. Students and professors report that tabletop gameplay appears to intensify active learning, classroom engagement, and student motivation—a powerful blend for the retention of course content.

1. FROM VIDEO GAME STUDIES TO TABLETOP GAME STUDIES

James Paul Gee, a social linguist, watched with fascination as his four-year old son played video games[[1]](#footnote-1)[[2]](#footnote-2). Gee’s mind began to hypothesize about the theoretical links between his academic field and his son’s learning process throughout gameplay. His curiosity piqued, Gee purchased a video game of his own to play, launching his research journey into video games and learning. Ultimately, this journey led him to publish the first edition of *What Video Games Have to Teach Us about Learning and Literacy* (2003)—a popular, groundbreaking work in the field of video game studies. In this book, Gee argues that video games exemplify a wide range of best practices and principles of learning. For example, he writes, video game players practice along their way to mastery, motivated to learn from their mistakes. Frequent and immediate feedback guides their hypothesizing and problem-solving. Video game players learn in embodied and social ways—as opposed to narrowly cognitive and solitary ways—forming affinity groups that enable them to learn from other players. In these ways, Gee claims that video games enable players to learn by “situating” their own learning (c.f. Lave & Wenger 1991) not only within the cognitive domain, but also within the affective, physical, and social domains afforded by “communities of practice” (c.f. Wenger-Trayner & Wenger-Trayner 2015). Gee carefully qualifies his assertions, rejecting the notion that video games should replace traditional instruction (c.f. Gee 2009; Jenkins 2011). Since Gee’s publication, the field of video game studies has grown rapidly, dominated by young researchers across the humanities, social sciences, and technical disciplines, but still finding its footing in terms of method, rigor, and peer review (Aarseth 2015).[[3]](#footnote-3)

In 2015, the research on video games and learning motivated a group of professors at my university to investigate tabletop games[[4]](#footnote-4) and learning. We believed that tabletop games would prove simpler in their design than video games, easier to adapt for classroom use, and thus, easier to analyze. We also noticed gaps in the game studies literature. Tabletop games appeared to receive less attention from game researchers than video games, particularly within the postsecondary educational context. Further, Turkle’s (2011) analysis that digital technology paradoxically renders us “alone together” piqued our interest in tabletop gameplay. Specifically, we wondered if tabletop gameplay might facilitate social connection in a more immediate way than video game play. Finally, we speculated that tabletop gaming modalities might remove some potential barriers to classroom use in terms of (1) hardware and software costs, (2) the need for technology support, (3) and the complexity of tutorial instruction. All of these hypotheses motivated us to investigate the use of tabletop games in undergraduate education. Funded by a US Institute of Museum and Library Services (IMLS) grant (SP 02-14-0038-14), we piloted nine case studies of tabletop gameplay and classroom learning across nine undergraduate courses during the 2015 spring semester.

2. TABLETOP GAME STUDIES IN THE UNDERGRADUATE CLASSROOM

The case studies focused upon the practice of “21st century skills” during tabletop gameplay (Partnership for 21st Century Learning 2007; Institute of Museum and Library Services 2009) giving special attention to “Learning and Innovation Skills,” also known as the “4Cs”:

* Critical Thinking and Problem Solving
* Creativity and Innovation
* Communication and Collaboration

Proponents of 21st century skills do not argue that the 4Cs should replace instruction about discipline-specific content. Instead, they insist that the 4Cs are necessary in order to apply discipline-specific content in useful ways. Students need both knowledge and skills, not merely one or the other. Initially, our investigation aimed to track the development of 21st century skills through tabletop gameplay in the undergraduate classroom. After further discussion with our grant consultants, however, we determined that tracking 21st skill development would prove too difficult for our investigation. As a result, we narrowed our scope, deciding instead to investigate the practice of 21st century skills through tabletop gameplay in the undergraduate classroom. Our primary question was: “Does tabletop gameplay require the practice of 21st century skills?” Our secondary question was: “What initial links might be drawn between tabletop gameplay, 21st century skill practice, and undergraduate learning?” Our investigation was preliminary—able only to highlight possibilities for teaching and learning in the undergraduate classroom.

Nine professors across the university selected one or more class sessions for tabletop gameplay, along with a commercially produced tabletop game to play in the classroom.[[5]](#footnote-5) All professors hypothesized which 21st century skill would prove most critical for learning through tabletop gameplay. Throughout the investigation, professors met as a cohort for biweekly discussion about the use of tabletop games in the undergraduate classroom. The professors managed the teaching and learning process in three phases—tabletop game instruction, facilitation, and debriefing—most professors devoting three classroom hours to the investigation, from start to finish. A wide-angle lens video camera recorded each phase of instruction and debriefing, capturing the classroom activities of each professor and their students. During each gameplay phase, however, the video camera focused on only one group in each classroom.

This article summarizes findings from the debriefing phrase of the investigation, not the instruction and facilitation phases. Crookall (2014) argues for the necessity of debriefing, following the gameplay experience, if learning is to occur. The practice of debriefing allows for the processing of strong feelings—both positive and negative—generated during the gameplay experience. Negative emotions, left unaddressed, can impede or block student learning through gameplay. Crookall (2010) also locates debriefing within the flow of Kolb’s Experiential Learning Cycle—moving from Concrete Experience (event), to Reflective Observation (debrief), to Abstract Conceptualization (learning), to Active Experimentation (trying out the learning), and back again. In this way, debriefing “moves from the game experience to the learning (content, skills), to the broader, so-called real world, and even to the learning process itself” (Crookall 2014, 422). With this logic in mind, the professors in this investigation generally followed a shared debriefing protocol with their students (adapted from Thiagarajan 2004):

1. *Feelings* experienced during gameplay
2. Notable *events* during gameplay
3. *Skills* used during gameplay
4. *Connections* between gameplay and other life experiences
5. Suggested *rule changes* to the game, with rationale
6. Suggested *strategies for replay* in future sections of the course

Toward the conclusion of the investigation, each professor completed an 11-question, open-ended survey about their own experiences and insights. Those survey topics are summarized here, and discussed in the pages that follow:

1. *Feelings* experienced while instructing, facilitating, and debriefing gameplay
2. *Teaching and learning effectiveness* throughout all gameplay phases
3. *Time invested* in gameplay preparation
4. General *student response* to gameplay
5. *Corroboration* from formal assessment tools
6. *Student engagement* during gameplay
7. Gameplay effect on grasping *course content*
8. Change in *student behavior or participation* in the course, following gameplay
9. *21st century skills* used during gameplay
10. Likelihood of using gameplay again in *future courses*
11. *Further insights* or comments

This article features only three cases in the investigation, selected because of their greater relevance to theological and religious education: *Christian Leadership, Systematic Theology II,* and an Honors course entitled *Special Topics in History: Interpreting History through Games.*[[6]](#footnote-6) Each of the three cases is reviewed in the following order:

1. Course, participant, and tabletop game identification
2. Student debriefing responses
3. Professor survey responses

Following the review of all three cases, the article turns to a discussion of the primary and secondary research questions. Finally, the article acknowledges limitations, and offers suggestions for further research.

3. TABLETOP GAME STUDY IN AN UNDERGRADUATE *CHRISTIAN LEADERSHIP* CLASSROOM

3.1 Course, participant, and tabletop game identification in *Christian Leadership*

*Christian Leadership*, a junior-level course offered yearly in the spring, meets Monday, Wednesday, and Friday for 50 minutes each day. It explores the correspondence between Christian tradition on one hand, and leadership and management theories on the other hand. It aims to prepare students for pastoral leadership within the context of local faith communities. During the 2015 spring semester, 26 traditional undergraduates enrolled for the course. The classroom gameplay experience was required for the course, across three sequential one-hour sessions (Friday, Monday, and Wednesday), just prior to midterm. A few students opted out of the formal investigation, although they still participated in the required classroom sessions. Each phase of the investigation—game instruction, game facilitation, and game debriefing—occurred on a different day. The *Christian Leadership* professor was a male in his early 60s, with three decades of pastoral experience, and six years of experience in undergraduate instruction. The professor self-reported that he had played no tabletop games across the most recent four-week period. Interestingly, he also self-reported an aversion to tabletop gameplay, due to some negative tabletop gameplay experiences as a young adult. His interest in qualitative research led him to participate in the investigation.

The professor selected *Forbidden Island* (Leacock 2010) for classroom tabletop gameplay, hypothesizing that students would practice the 21st century skill of Collaboration. The game requires a team of players to navigate an island map of 24 tiles with pawns as the island tiles steadily sink beneath the waves. Players must cooperate in order to capture four island treasures before escaping together by helicopter. Players receive special roles that modify their abilities to navigate tiles, and to shore up sinking tiles. All players either win or lose together—*Forbidden Island* is a cooperative game in which no individual victories may be won. The game is intended for two to four players, ages 10 and up. It takes approximately 30 minutes to play. It may be played at four levels of difficulty, each level increasing the rate at which island tiles sink. Students in the *Christian Leadership* course played *Forbidden Island* at the lowest level of difficulty.

The professor also decided to modify *Forbidden Island* by pairing two players per role. Normally, *Forbidden Island* is played by one player per role, not two. In other words, two to four players normally work together in order to win the game, each with one role and pawn. For *Christian Leadership,* however, two players had to manage one role together, through discussion and negotiation. This kind of game modification can deliver multiple benefits. First, it creates the capacity for more player participation with less game copies. Second, it transforms passive players into active players, since agreement is required in order to move a pawn or shore up a tile. Third, it increases discussion at the game table, by doubling the player number to four to eight. Fourth, it makes game facilitation easier for the professor to manage, by reducing the number of active games played at once. By pairing two players per role, the professor intended to increase the need for Collaboration among players.

3.2 Student debriefing responses in *Christian Leadership*

We gathered data from the 50-minute gameplay debriefing phase in the *Christian Leadership* classroom. The professor compared that data to (1) the content of student discussion across the second half of the semester, and (2) a class-wide, formative writing assessment which asked students to correlate gameplay with the skills for effective teaming. During the gameplay debriefing phase, 21 students offered 68 comments in response to six questions asked by the professor. When analyzing the data, it seemed that the group consisted of three sub-groups of seven students each. *Verbalizers* participated in the gameplay debriefing phase with enthusiasm, each offering six to 10 remarks. *Commenters* participated on a more limited basis, each offering one to three remarks. *Voters* did not participate verbally at all—opting only to raise their hands when the professor asked all students to identify 21st century skills practiced during gameplay. With little exception, the *Commenters* and *Voters* actively affirmed the perspectives of the *Verbalizers*. Across the 50-minute gameplay debriefing phase, student participation remained steady. A thematic overview of the gameplay debriefing phase follows below:

* *Tension:* All *Verbalizers* remarked that gameplay generated feelings of “intensity,” “suspense,” “anxiety,” “stress,” and “overwhelmed” as they attempted to win *Forbidden Island.* They experienced this tension as a positive aspect of gameplay. At the end of the discussion, almost all *Verbalizers*—and about half of the *Commenters*—suggested game modifications that might generate further tension. Even a lone *Commenter* who had earlier complained about gameplay tension now suggested a way to generate more of it. No student suggested a game modification to make gameplay easier. Tension appeared to increase the students’ enjoyment of gameplay.
* *21st Century Skills:* Nearly all students identified the gameplay practice of Communication and Collaboration. They also identified the gameplay practice of Critical Thinking, Adaptability, and Creativity, although of lesser frequency and importance than Communication and Collaboration. The students suggested that, although they valued “thinking well,” they prioritized “thinking well together.”
* *Connections to Life:* All *Verbalizers* remarked that gameplay tension motivated them to work well together as a team. One *Verbalizer* and two *Commenters* remarked that gameplay illustrated the importance of remaining calm in a crisis, listening well to others, and practicing humility.
* *Representative Remarks:*
  + “Your idea is not always the best idea. Others may see things in a different way, and it might just be a better way.”
  + “Maybe one person doesn’t talk as much, but they have good things to say.”
  + “Your turn isn’t [only] *your* turn; it’s *our* turn to figure out what to do with your pawn.”
  + “You can’t win the whole game by yourself.”

3.3 Professor assessment of the investigation in *Christian Leadership*

The professor had hypothesized that Collaboration would prove most critical for learning through gameplay, but the students argued that Communication and Collaboration were equally critical. The professor spent seven hours preparing for gameplay, which helped to alleviate some of his initial “nervousness” about introducing gameplay into the classroom. In this case, he chose to introduce gameplay first, followed by research findings about teamwork. Normally, however, he introduces research prior to facilitating application exercises like gameplay. For two weeks following gameplay, class discussions on teamwork “did not seem to lose steam or interest with the students” because of frequently drawn connections between gameplay and research. The professor also perceived that, post-gameplay, students were “more engaged in offering ideas and sharing real-world experiences.” He noted that gameplay is a “creative tool for the application of theory and research. We all grasp better what we hear when coupled with doing.’” He concluded that the students “loved this addition to the course as a means to learn the skill of collaborative teamwork.” The professor now includes *Forbidden Island* in every section of *Christian Leadership,* as an application of the theory and research on leadership versus management behaviors.

4. TABLETOP GAMEPLAY IN AN UNDERGRADUATE *SYSTEMATIC THEOLOGY* CLASSROOM

4.1 Course, participant, and tabletop game identification in *Systematic Theology*

*Systematic Theology II,* a junior-level course offered yearly in the spring, meets Tuesday and Thursday for 75 minutes each day. It extends the scope and sequence of theological reflection and construction which begins in the fall semester. It aims to prepare students for pastoral leadership within the context of local faith communities. During the 2015 spring semester, 19 traditional undergraduates enrolled for the course. The classroom gameplay experience was elective—not required—with seven students choosing to participate. Each phase of the investigation—game instruction, game facilitation, and game debriefing—occurred during a three-hour evening session at the university library, in the last month of the semester. The *Systematic Theology* professor was a male in his late 20s, with three years of missional and pastoral experience, and two years of experience in undergraduate instruction. The professor self-reported that he had played tabletop games for seven hours across the most recent four-week period. His interest in tabletop gameplay led him to participate in the investigation.

The professor selected both *Clue* (Pratt 1949) and *Tobago* (Allen 2009) for classroom tabletop gameplay, hypothesizing that students would practice the 21st century skill of Critical Thinking. The first game—*Clue*—requires individual players to explore a mansion map in search of hidden information—murderer, weapon, and scene of the crime—narrowing down the possibilities throughout gameplay. The hidden information is determined randomly prior to gameplay, and placed in an envelope. Players receive a few clues to start the game. Only one player wins the game by being the first to correctly identify the hidden information. *Clue* is a competitive, racing game of deductive reasoning. The game is intended for three to six players, ages eight and up. It takes approximately 45 minutes to play. The second game—*Tobago*—requires individual players to explore an island map in search of multiple hidden treasure locations. Players receive a few clues to start the game. The hidden locations are constructed by the players as they combine their clues into treasure maps. When a treasure map is complete, and the location of the treasure identified, players race to claim the treasure before others arrive at the location. Like *Clue, Tobago* is a competitive, racing game of deductive reasoning. The game is intended for two to four players, ages 10 and up. It takes approximately 60 minutes to play.

4.2 Student debriefing responses in *Systematic Theology*

We gathered data from the 43-minute gameplay debriefing phase in the *Systematic Theology II* evening session at the university library. During the gameplay debriefing phase, seven students offered 74 comments in response to eight questions asked by the professor. When analyzing the data, it seemed that the group consisted of two sub-groups. Four *Verbalizers* answered almost every question asked by the professor—multiple times per question—each offering 11 to 20 remarks. Three *Commenters* participated on a more limited basis, each offering three to seven remarks. Without exception, the *Commenters* actively affirmed the perspectives of the *Verbalizers.* Due to this phenomenon, coupled with the small number of students in each sub-group, the following summary does not differentiate between *Verbalizers* and *Commenters.*  Across the 43-minute gameplay debriefing phase, student participation slowed. A thematic overview of the gameplay debriefing phase follows below:

* *Tension:* All but one student commented that gameplay generated feelings of tension as they attempted to win *Tobago.* To a slight degree, they experienced this tension as a positive aspect of gameplay (e.g. “fun,” “got better the longer we played,” “liked”). To a greater degree, they experienced this tension as a negative aspect of gameplay (e.g. “anxious,” “overwhelmed,” “flustering,” “dread,” “annoyed,” “don’t want to play”).
* *21st Century Skills:* Five students identified the gameplay practice of Critical Thinking. Four students also identified the gameplay practice of Adaptability.
* *Connections to Life:* All students enthusiastically participated in this section of the gameplay debriefing phase, which ranged broadly from theological reflection to pedagogical critique.
  + *Connections to Theology:* When asked to consider the games as models for thinking about the relationship between God and the world, all seven students seized the moment. The discussion ranged from process-openness theologies to predestination, and from human freedom to human limitations. Students also compared the interaction of divine revelation and human discernment to the gameplay methods of uncovering hidden information in *Clue* and *Tobago.*
  + *Connections to Teaching and Learning:* Four students suggested that learning through tabletop games might tend to occur implicitly unless rendered explicit through debriefing. The rest of the discussion ranged from the strengths and limitations of games as pedagogy, to the importance of knowing course content prior to gameplay, to the notion that shared concrete experiences can aid learners in retention. One student noted that gameplay failure motivated him to keep learning, rather than giving up.
* *Representative Remarks:*
  + “You have to be willing to look like you don’t know what you’re doing, and you have to be willing to make a mistake . . . willing to fail.”
  + “[The game] teaches us. It just teaches us in a different way.”
  + “Pure lecture . . . is becoming harder and harder . . . to retain.”
  + “Information is so accessible at our fingertips . . . [Games] create those memories and experiences [which] allow us to tie back to . . . information.”

4.3 Professor assessment of the investigation in *Systematic Theology*

The professor had hypothesized that Critical Thinking would prove most critical for learning through gameplay, and the students confirmed his hypothesis. The professor spent 10 hours preparing for gameplay. He initially felt “anxiety and stress” about introducing gameplay into the classroom. Those feelings dissipated when the debriefing phase began, as students demonstrated their proficiency in theological reflection upon the gameplay experience. The professor asserted that debriefing was “probably the most essential component to effective teaching and learning through gameplay.” In this case, the professor introduced course content first, followed by gameplay. He intended to use *Clue* and *Tobago* as models of divine action. He asserted that, although “traditional [pedagogical] methods are important to teach [students] the language and historical conversation . . . gameplay enabled [students] to understand the concepts and their complexity better.” Prior to gameplay, students expressed reluctance to participate in an extracurricular, three-hour, evening session. Following gameplay, the professor seemed to note an increase in “passion,” “enthusiasm,” and “engagement” among those who still chose to participate. Nevertheless, he remained “uncertain how [gameplay] fits into the classroom experience,” given the obligation to teach foundational course content within time constraints. A year later—and in-class—the professor repeated the gameplay of *Clue* and *Tobago* with a smaller class size. He stopped on the third year due to time constraints and a larger class size. He still asserts, however, that 21st century skills “are needed [in order] to be an effective pastor and scholar.”

5. TABLETOP GAMEPLAY IN AN UNDERGRADUATE HONORS HISTORY CLASSROOM

5.1 Course, participant, and tabletop game identification in *Special Topics in History*

*Special Topics in History: Intepreting History through Games,* a senior-level Honors elective course offered only once, met Tuesday and Thursday for 75 minutes each day. It provided History majors, History Education majors, and Honors students with three hours of elective credit toward major or program completion. It aimed to enrich the student learning experience above and beyond the prescribed curriculum. During the 2015 spring semester, 18 traditional undergraduates enrolled for the course. The classroom gameplay experience was required for all students, across the entire semester. Each phase of the investigation—instruction, gameplay, and debriefing—occurred sequentially and repeatedly. The *Special Topics in History* professor was a female in her early 30s, with 10 years of experience in undergraduate instruction, not all full-time. The professor self-reported that she already used tabletop games for undergraduate instruction, and that she played tabletop games for two hours across the most recent four-week period. Her interest in student engagement through experiential learning led her to participate in the investigation.

The professor paired 12 games and research topics (Table 1), hypothesizing that students would practice all 4Cs of the 21st century Learning and Innovation skills—Critical Thinking, Creativity, Communication, and Collaboration. Occasionally, she paired two or more students as one player. The most involved game throughout the course was *Reacting to the Past (RTTP): Defining a Nation: India on the Eve of Independence, 1945* (Embry and Carnes 2014)*.* *RTTP* gameplay began on the second week of March, continuing until the third week of April. The first two weeks consisted of assigning roles to students from the factions of British colonialism, Hindu castes, Mohandas Gandhi’s nonviolence movement, Indian nationalism, the Muslim League, Sikhism, Hinduism, and Communism. Students read many primary sources, including Hindu literature, the Koran, the literature of Islamic nationalism, and the writings of Ambekar, Nehru, Jinnah, and Gandhi. The final three weeks consisted of iterative speech writing, speech delivery, caucusing, consensus building, and calling the question in order to resolve the crisis of India’s independence.

|  |  |  |
| --- | --- | --- |
| Table 1 | | |
|  | | |
| *Games and Research Questions throughout the Special Topics in History course* | | |
| Game | Description | Research Questions |
| *Timeline: Inventions* (Henry 2010) | Players cooperatively use cards to build a timeline of human inventions, checking dates after card placement | What relationships might exist between play and learning? |
| *Timeline: American History* (Henry 2014) | Players cooperatively use cards to build a timeline of historical events in the United States of America, checking dates after card placement | What relationships might exist between games and learning? |
| *Diplomacy* (Calhamer 1959) | Players negotiate, form, and break alliances among the seven “Great Powers of Europe”, prior to World War I, striving for dominance | How did alliances contribute to the causes of World War I? |
| *Roll Through the Ages: The Bronze Age* (Leacock 2008) | Players roll dice to build and sustain an ancient civilization, using workers, commodities, and technologies, striving for dominance | What factors contribute to population growth, either positively or negatively? |
| *Pit* (Cayce 1903) | Players trade commodities in real time through open-outcry, hoping to corner the market | How did commodities trading work, prior to the advent of electronic trading? |
| *Monopoly* (Magie and Darrow 1933) | Players purchase and develop properties, charging rent to other players, hoping to bankrupt them | What were the impacts of Henry George’s single-tax program, within a capitalist context? |
| *Assassin’s Creed Unity* (Pedneault 2014) | Players explore Paris during the French Revolution, hoping to defeat enemy factions (video game) | What challenges face commercial video games when modeling history? |
| *Chess* (Uncredited c. 1475) | Players move pieces in an abstract simulation of medieval warfare on an 8x8 board, striving to defeat the opponent | How do game rules implicitly communicate values and ideologies? |
| World War II Miniatures: Historical Simulation (Uncredited n.d.) | Teams of players move pieces in a technical simulation of World War II warfare on a large tabletop, hoping to achieve an historical victory | How do tabletop miniature war games perform as historical simulations? |
| *The Oregon Trail* (Rawitsch, Heinemann, and Dillenberger 1974) | Single players manage a party of settlers and its resources along the Oregon Trail (video game) | How closely does *The Oregon Trail* model the actual historical experiences of travelers? |
| *TWINE* (Kilmas 2009) | Single players use an open-source utility to write interactive fiction with hypertext narratives (video game) | How can a game design tell an historical story? |
| *Reacting to the Past: Defining a Nation: India on the Eve of Independence, 1945* (Embree and Carnes 2014) | For weeks, players assume historical roles in a simulation of India’s break from British rule, researching primary sources, writing and delivering persuasive speeches, and negotiating alliances | How can gameplay motivate students to read and respond to primary historical sources? |

5.2 Student debriefing responses in *Special Topics in History*

We gathered data from the 50-minute, final, course debriefing in the *Special Topics in History: Intepreting History through Games* classroom. The professor compared that data to a class-wide, final writing assessment which asked students to evaluate the usefulness of games to teach 21st century skills. During the course debriefing, 17 students offered 45 comments in response to three questions asked by the professor. When analyzing the data, it seemed that the group consisted of two sub-groups. Seven *Verbalizers* responded to multiple questions, offering three to seven remarks. Most of the time, 10 *Commenters* responded to only one question, offering only one remark. Almost all of the time, the *Commenters* actively affirmed the perspectives of the *Verbalizers.* Across the 50-minute debriefing, *Verbalizers* carried the majority of the conversation until the final question in which the professor directly solicited responses from each student. A thematic overview of the course debriefing follows below:

* *21st Century Skills:* Six *Verbalizers* and two *Commenters* identified the gameplay practice of both Communication and Collaboration across the semester, assigning equal importance to both.
* *Connections to Life:* These student remarks reflected a sustained, semester-long conversation about games, learning, and 21st century skills. In general, students identified a positive correlation between experiential learning, face-to-face social interaction, and the motivation to learn. All students affirmed the value of 21st century skills for classroom learning, in preparation for the demands of work and life. Five *Verbalizers* and seven *Commenters* affirmed the value of both content mastery and 21st skill development. Four *Verbalizers* and two *Commenters* asserted the priority of content mastery before gameplay.
* *Representative Remarks:*
  + “It’s like you do one group project, once a semester, and you get all stressed out about it because you’re not used to using all of the 4Cs.”
  + “In a typical college class, you kind of sit in the same spot and you never really talk to anybody.”
  + “Things that spark an interest, they don’t teach much in and of themselves, but they get you to do your own learning, which is sometimes better than . . . a lecture.”
  + “I learned more from the games that I had background knowledge for.”
  + “It’s important to have that background knowledge before jumping into the game . . . because then you’re going in with your thinking cap on.”

5.3 Professor assessment of the investigation in *Special Topics in History*

The professor had hypothesized that Collaboration would prove most critical for learning through gameplay; students confirmed her hypothesis, adding that Communication seemed of equal importance. The professor spent 6 hours preparing for the gameplay of *Roll through the Ages: The Bronze Age*. She initially felt “nervous” and “excited” about introducing gameplay into the classroom. In this case, the professor typically required students to complete course readings before gameplay. For example, she required students to read an excerpt from Malthus’ ([1789] 2012) *First Essay on Population* before playing *Roll through the Ages: The Bronze Age* in order to analyze Malthus through the lens of the tabletop game. The professor noted that gameplay helped students to “actively engage” with concepts from the reading, remarking that “The students were interested and energized by the game. They felt confused about how to play it, but also really enjoyed figuring it out.” She asserted that “Students enjoyed having a specific, shared experience” of classroom gameplay, but also observed that gameplay “usually won’t accomplish learning goals [for unwilling students], unless they open up.” She concluded that she was “more likely to use games, but use them strategically.” The professor continues to use tabletop games for general education and upper division history courses, from the relatively light *Timeline* series, to the weighty *Reacting to the Past* series.

6. DISCUSSION

Our investigation allowed us to explore the practice of 21st century skills through gameplay in the undergraduate classroom. We were able to answer our primary question, “Does tabletop gameplay require the practice of 21st century skills?” We were also able to answer our secondary question: “What initial links might be drawn between tabletop gameplay, 21st century skill practice, and undergraduate learning?” Our investigation was preliminary—able only to suggest possibilities for teaching and learning in the undergraduate classroom.

6.1 Does tabletop gameplay require the practice of 21st century skills?

Across the three featured cases of this investigation, the short answer is “yes.” All students acknowledged the necessity or usefulness of Communication, Collaboration, or Critical Thinking for tabletop gameplay. Most often, students argued that a combination of these proved necessary. However, these findings do not exclude the possibility of practicing other 21st century skills for tabletop gameplay. Different kinds of tabletop games target different kinds of intellectual processes, evoke different kinds of moods and attitudes, and motivate different kinds of behaviors.[[7]](#footnote-7) *Forbidden Island,* for example, targets Communication and Collaboration in order to accomplish Critical Thinking, striking an even balance among these three 21st century skills. Furthermore, the professor adapted the gameplay of *Forbidden Island* by pairing two students to one role, intensifying the need for Communication and Collaboration throughout gameplay. In contrast, *Tobago* and *Roll through the Ages: The Bronze Age* both target Critical Thinking within the context of competition, while the team-based skills of Communication and Collaboration take a back seat. A few students also noted that tabletop gameplay required the use of two other 21st century skills—Creativity and Adaptability—as they drafted novel, tactical responses to unanticipated contingencies. Professors agreed with their students at all of these points.

6.2 What initial links might be drawn between tabletop gameplay, 21st century skill practice, and undergraduate learning?

6.2.1. Classroom engagement and faculty-student interaction through tabletop gameplay

In their survey responses, all three professors mentioned a combined 10 times that tabletop gameplay helped students to move from classroom passivity to classroom “engagement.” According to Kim and Lundberg (2016), classroom engagement positively correlates with frequent student-faculty interaction, operationally understood as “talking together about course material outside of class, communicating by email or in person, interacting during class, and working together on an activity other than coursework” (p. 303). Kim and Lundberg further recognize a positive correlation between student-faculty interaction, and other desirable student outcomes such as “academic self-challenge” (doing more than required), “sense of belonging” (institutional affinity), and cognitive skill development (critical reasoning skills). Across our investigation, tabletop gameplay corresponded to Kim and Lundberg’s criteria for student-faculty interaction. First, tabletop gameplay provided a platform for the *Systematic Theology II* professor to discuss course material with students outside of class. Second, tabletop gameplay contributed to intensified interactions during class among professors and students, as opposed to the relative passivity of lecture note-taking. Third, tabletop gameplay provided an activity—other than coursework—which students worked on with professors. Even though tabletop gameplay technically was coursework in this investigation, the non-traditional nature of it seemed to render it as play more than work. In summary, as professors went “above and beyond” the level of normal faculty-student interaction, students followed. Tabletop gameplay provided professors with a capable platform for student-faculty interaction.

6.2.2. The “flow” of tabletop gameplay in the undergraduate classroom

In *Christian Leadership* and *Systematic Theology II,* students identified an element of tension in the midst of their tabletop gameplay experiences, as evidenced by comments such as those below:

* “There were those intense suspense moments, but there was also this ‘Oh yeah, we got this’ when we were strategizing [together]” (comment from *Forbidden Island*).
* “Adversity was a big part of [gameplay] . . . so it just made it more fun, more rewarding” (comment from *Forbidden Island*).
* “We would feel overwhelmed like ‘Oh, we’re gonna lose!’ And then, somebody would say ‘Here’s what we’re gonna do.’ And we’d be like, ‘Oh! You’re a genius!’ It was good to know that someone else had your back” (comment from *Forbidden Island*).
* “I felt anxious, probably, due to the fact that it was my first time playing . . . my first time hearing the rules, and I wanted to improve” (comment from *Tabago*).
* “I felt anxious the entire time we played” (comment from *Tabago*).
* “I was flustered trying to figure out how to be strategic . . . but once I did figure it out, I was like ‘Yes!’” (comment from *Tobago*).
* “I had a lot of fun at first, but the more I started losing, the more I started getting really mad” (comment from *Tobago*).

These comments illustrate that tension in tabletop gameplay can feel both energizing and discouraging. It can arise through both competition and cooperation. It can feel both energizing and discouraging. It emerges from the possibility of winning and the threat of losing. It accompanies the process of learning how to do something new. It allows for a sense of relief and joy once resolved.

Csikszentmihalyi (1990) developed a “theory of optimal experience based on the concept of *flow*” (p. 4). Flow occurs when persons set clear goals, taking on challenges at the threshold of their skill levels, neither bored by ease nor overwhelmed by anxiety. Regular feedback helps to sustain the flow experience. Flow can be undermined through the repetition of tasks already mastered, as well as the demand to accomplish tasks beyond one’s ability. When challenges and skill levels increase in a balanced way, time fades into the background as flow generates intense concentration on the task at hand. Flow is also linked to a sense of control, and to the hope of success. Csikszentmihalyi, Abuhamdeh, and Nakamura (2005) believe that flow is a “powerful motivating force” (p. 602) that can help people to “enjoy challenges and then master them” (p. 606).

During tabletop gameplay, the element of tension seemed to inhibit flow for several *Systematic Theology II* students playing *Tobago*, while tension seemed increase flow for many *Christian Leadership* students playing *Forbidden Island*. In some ways, the tension of tabletop gameplay was the same for both sets of students. At first, all students had to learn unfamiliar rule sets. Next, they all had to draft potentially winning strategies for an unfamiliar challenge. Finally, they all had to execute those strategies as obstacles emerged and tension mounted. However, *Forbidden Island* requires collaborative play against a shared threat (i.e. the sinking island), while *Tobago* requires competitive play against individual threats (i.e. other players at the table). *Forbidden Island* players also helped each other to learn the rules, draft strategies, and overcome obstacles. Those with prior gameplay experience shared their expertise in a helpful way. In contrast, *Tobago* players kept more to themselves in order to retain a competitive edge. In these two cases, collaborative play seemed to show a positive correlation with flow, while competitive play seemed to show a negative correlation with flow.

6.2.3. The relevance of 21st century skill practice for the undergraduate classroom

Students in *Special Topics in History* unanimously agreed upon the importance of practicing 21st century skills in the undergraduate classroom. Their agreement carries weight, since these students participated in the investigation across the entire semester, having played and debriefed nine tabletop games, along with reading course assignments on games, learning, and 21st century skills. The composite statement below represents a synthesis of the students’ perspectives:

We need to practice 21st century skills in the classroom—in particular, the 4Cs. Those skills can enable us to work effectively with others on group projects—at school, in the workplace, and throughout life. We can’t get through life just by knowing a bunch of facts. Nevertheless, the 4Cs do help us to remember the facts that we learn, by linking our learning to experiences shared with others. At the same time, we also recognize the limitations of the 4Cs. We will accomplish little through interacting with others, unless we first understand course content. We need to learn the content, and then put it straight to use. Content needs to pair with application. That is how the 4Cs can and do supplement traditional teaching methods. We want teachers who not only understand how to explain content, but also know how to guide our growth as social learners.

These students valued the practice of 21st century skills in the undergraduate classroom, but they were not enamored with 21st century skills. Some of the students—but not all—argued for learning content knowledge first, and then putting that knowledge to work through the exercise of 21st century skills. The unanimity of these students is meaningful because of its summative nature. It stands as a corporate, capstone response to the semester, and to the investigation.

8. LIMITATIONS

While this investigation raises several provocative issues and questions, it is limited in several ways. This investigation was preliminary. It is not generalizable. It did not intend to utilize a control group for the comparison of its findings. It did not compare its findings with a student focus group, which might have been drawn from the undergraduates participating in the investigation. It relied upon the self-reporting of affective experience through a debriefing process, as opposed to empirically determining measures of learning. Although the investigating professors reviewed this article, the participating undergraduate students did not, thus limiting the potential contributions of member checking. This investigation can only observe and report correlational findings—no causality may be inferred.

8. FUTURE RESEARCH

For the study of practicing 21st century skills through tabletop gameplay in undergraduate classrooms, future research might examine the following:

* Some tabletop games are remediated as video games, to be played by multiple players on networked, mobile devices. This remediation may alter the practice of some 21st century skills during gameplay. This alteration could be observed by comparing the gameplay experiences of multiple groups—one-half of the groups playing a tabletop game, and the other one-half of the groups playing the same game on mobile devices.
* This investigation observed that debriefing seemed to assist undergraduates with the identification of their own learning through tabletop gameplay. A future study could compare the learning outcomes of multiple groups—one-half of the groups playing tabletop games without debriefing, the other one-half of the groups playing tabletop games with debriefing.
* This investigation focused its attention on skill practice through tabletop gameplay, but not content mastery through tabletop gameplay. Future studies could investigate the strengths and limitations of using of tabletop gameplay in order to effectively teach content mastery—for example, the essential knowledge of a religious tradition. To this end, Bado-Fralick and Sachs Norris (2010) have already compiled an initial catalog of various games that teach the essential knowledge of religious traditions.
* Kumar and Lightner (2007) found that corporate trainers and college instructions opted in or out of active teaching strategies such as classroom gameplay, based upon their own temperaments. Kumar and Lightner suggest that further study could examine “the root of hesitancies” (p. 58) toward the use of active teaching strategies. They hypothesize that the hesitancies of some professors could be driven by temperament, by lack of exposure to methods, by lack of ability with methods, or by discipline-specific norms.

REFERENCE LIST

Aarseth, E. (2015, July). Meta-game studies. *Game Studies, 15*(1). Retrieved from http://gamestudies.org/1501/articles/editorial

Allen, B. (2009). *Tobago* [Board game]. Munich, Germany: Zoch Verlag.

Bado-Fralick, N., and Sachs Norris, R. (2010). *Toying with God: The world of religious games and dolls.* Waco, TX: Baylor University Press.

Calhamer, A. B. (1959). *Diplomacy* [Board game]. Baltimore, MD: Avalon Hill.

Cayce, E. (1903). *Pit* [Board game]. Pawtucket, RI: Hasbro.

Costikyan, G. (2011). Introduction. In G. Costikyan and D. Davidson (Eds.), *Tabletop: Analog game design,* 13-14. Pittsburg, PA: Carnegie Mellon University, ETC Press. http://repository.cmu.edu/etcpress/64

Costikyan, G., and Davidson, D. (Eds.) (2011.) *Tabletop: Analog game design.* Pittsburg, PA: Carnegie Mellon University, ETC Press.

Crookall, D. (2014). Engaging (in) gameplay and (in) debriefing. *Simulation & Gaming, 45*(4-5), 416-427.

\_\_\_\_\_\_\_\_\_\_. (2010). Serious games, debriefing, and simulation/gaming as a discipline. *Simulation & Gaming, 41*(6), 898-920.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: Harper and Row.

Csikszentmihalyi, M., Abuhmdeh, S, & Nakamura, J. (2005). Flow. In A. J. Elliot and C. S. Dweck (Eds.), *Handbook of competence and motivation,* 598-608. New York: The Guilford Press.

Elliot, A. J., and Dweck, C. S. (Eds.) (2005). *Handbook of competence and motivation.* New York: The Guilford Press.

Embree, A. T., and Carnes, M. C. (2014). *Defining a nation: India on the eve of independence.* New York: Barnard College.

Gee, J. P. (2011). Reflections on empirical evidence on games and learning. In S. Tobias and J. D. Fletcher (Eds.), *Computer games and instruction,* 223-232. Charlotte, NC: Information Age Publishing.

\_\_\_\_\_\_\_\_\_\_. (Interviewee). (2009). *Frontline interview with James Paul Gee* [Interview transcript]. Retrieved from https://www.pbs.org/wgbh/pages/frontline/digitalnation/extras/interviews/gee.html

\_\_\_\_\_\_\_\_\_\_. (2003). What video games have to teach us about learning and literacy. New York: Palgrave Macmillan.

Grundey, A. (2017, Jul 25). Board games are back in Saudi Arabia, the UAE. *Arab News*. Retrieved from http://www.arabnews.com/node/1134501/offbeat

Henry, F. (2014). *Timeline: American History* [Board game]. Guyancourt, France: Asmodee.

\_\_\_\_\_\_\_\_\_\_. (2010). *Timeline: Inventions* [Board game]. Guyancourt, France: Asmodee.

Institute of Museum and Library Services. (2009). *Museums, libraries, and 21st Century Skills* (IMLS-2009-NAI-01). Washington, D.C. Retrieved from https://www.imls.gov/assets/1/AssetManager/21stCenturySkills.pdf

Jenkins, H. (2011, March 21). How learners can be on top of their game: An interview with James Paul Gee (Part One) [Web log interview]. Retrieved from http://henryjenkins.org/blog/2011/03/how\_learners\_can\_be\_on\_top\_of.html

Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education.* San Francisco: Pfeiffer.

Kim, Y. K., and Lundberg, C. A. (2015). A structural model of the relationship between student-faculty interaction and cognitive skills development among college students. *Research in Higher Education, 57*(3), 288-309.

Klimas, C. (2009). *Twine* [Computer software]. Accessed at http://twinery.org/

Kowert, E., and Quandt, T. (Eds.). (2015). *The video game debate: Unravelling the physical, social, and psychological effects of video games.* New York: Routledge.

Kruzman, D. (2017 Jul 31). Bored with digital games? Join the board game renaissance. *USA Today.* Retrieved from https://www.usatoday.com/story/life/2017/07/31/bored-digital-games-join-board-game-renaissance/476986001/

Kumar, R. and Lightner, R. (2007). Games as an interactive classroom technique: perceptions of corporate trainers, college instructors, and students. *International Journal of Teaching and Learning in Higher Education, 19*(1), 53-63.

Lave, J., and Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, England: The Press Syndicate of the University of Cambridge.

Leacock, M. (2010). *Forbidden Island* [Board game]*.* Newton, MA: Gamewright.

\_\_\_\_\_\_\_\_\_\_. (2008). *Roll through the ages: The Bronze Age* [Board game]. Leitchfield, KY: Eagle-Gryphon Games.

Malthus, T. R. ([1789] 2012). On the principle of population. In M. Perry (Ed.), *Sources of the Western tradition* (Volume 2, 8th edition), 139-141. Hampshire, England: Cengage.

Magie, E. J., and Darrow, C. (1933). *Monopoly* [Board game]. Pawtucket, RI: Hasbro.

Nicholson, S. (2010). *Everyone plays at the library: Creating great gaming experiences for all ages.* Medford, NJ: Information Today.

Partnership for 21st Century Learning. (2007). *Learning for the 21st century: A report and mile guide for 21st century skills.* Retrieved from http://www.p21.org/storage/documents/P21\_Report.pdf

Pedneault, A. (2014). *Assassin’s creed unity* [Computer software]. Montreuil, France: Ubisoft.

Perry, M. (Ed.). (2012). *Sources of the Western tradition* (Volume 2, 8th edition). Hampshire, England: Cengage.

Pratt, A. E. (1949) *Clue* [Board game]. Pawtucket, RI: Hasbro.

Rawitsch, D., Heinemann, B., and Dillenberger, P. (1974). *The Oregon trail* [Computer software]. Brooklyn Center, MN: Minnesota Educational Computing Consortium.

Salen, K., and Zimmerman, E. (2004). *Rules of play: Game design fundamentals.* Cambridge, MA: The MIT Press.

Sherry, J. L. (2014). Debating how to learn from video games. In E. Kowert and T. Quandt (Eds.), *The video game debate,* 116-130. New York: Routledge.

Thiagarajan, S. (2004). *Six phases of debriefing for performance.* Retrieved from http://www.thiagi.net/archive/www/pfp/IE4H/february2004.html#Debriefing

Tobias, S., and Fletcher, J. D. (Eds.). (2011). *Computer games and instruction,* 223-232. Charlotte, NC: Information Age Publishing.

Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other.* New York: Basic Books.

Wenger-Trayner, E., and Wenger-Trayer, B. (2015). *Introduction to communities of practice: A brief overview of the concept and its uses.* http://wenger-trayner.com/introduction-to-communities-of-practice/

Wittgenstein, L. ([1953] 2009). *Philosophical investigations.* Oxford, England: Blackwell Publishing Ltd.

Wolf, M. J. P., and Perron, B. (Eds.). (2003). *The video game theory reader.* New York: Routledge.

Wolf, M. J. P., and Perron, B. (2003). Introduction. In M. J. P. Wolf and B. Perron (Eds.), *The video game theory reader,* 1-24. New York: Routledge.

1. Grateful acknowledgement must go to Dr. Lauren Hays, my research partner in the case studies which undergird the writing of this article. [↑](#footnote-ref-1)
2. All games—including video games and tabletop games—bear a “family resemblance” across a field of overlapping similarities (Wittgenstein [1953] 2009, 64) which include, but are not limited to:

   *Systems of rules* which create conditions for gameplay,

   C*onflicts or contests* among game players,

   G*oal-directed outcomes* toward which players aim, and

   *Meaningful choices* for players to make (Salen and Zimmerman 2004, 71-83).

   More narrowly, the term *video games* is sufficient to identify that family resemblance shared by *computer games, digital games,* and *electronic games* (Wolf and Perron 2003, 2). All members of this family are governed by *digital algorithms—*computer programs which manage player activity through rules, procedures, interfaces, graphics, and text (p. 14-15)—and, played upon television, computer, arcade, or mobile screens. [↑](#footnote-ref-2)
3. Both Gee (2011) and Sherry (2016) critique the research on video games and learning. Gee calls for more “robust empirical projects” to test the hypothesis that “Video games are good for learning”—beginning with the careful delimitation of those terms (p. 223-224). Sherry adds that researchers give insufficient attention to “formal game features [and] game mechanics” for particular learning outcomes (p. 118-119). For support, Sherry turns to the “traditional scientific” approach of the Children’s Television Workshop (CTW) when designing *Sesame Street.* CTW researchers “divided the learning process into a series of variables” spanning a wide range of learning modalities, social contexts, and video production qualities (p. 122). This enabled CTW researchers to design best practices for educational television that are still in use today. Video games prove more difficult to research, Sherry notes, because their “numerous visual, auditory, and interaction techniques” are not easily isolated, and thus, tend to be “tested as a whole” (p. 120). [↑](#footnote-ref-3)
4. *Tabletop games* bear a close family resemblance to video games, with one essential difference—tabletop games are *analog* instead of digitally automated. Players—not computers—govern the rules of tabletop gameplay. Tabletop game rules and procedures reside within “systems (that) are exposed to the player, not hidden in code . . . explicit and immediately graspable” (Costikyan 2011, p. 14). Despite the apparent ubiquity of video games, observers note a rising “board game renaissance” that spans both Western and Eastern cultures (Kruzman 2017, Jul 31; Grundey 2017, Jul 25). According to BoardGameGeek (www.boardgamegeek.com), the number of tabletop games has grown exponentially from 26,992 in 1970 to 100,210 by August 2018. [↑](#footnote-ref-4)
5. The nine cases included two exceptions to tabletop game play. A Teacher Education professor used a live, digital simulation for her students in *Classroom Management.* An English professor paired a gamification method with team-based learning in *Composition I.* According to Kapp (2012, 10), “Gamification is (the practice of) using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems.” In short, gamification is not the use of commercial tabletop games in education, but rather the adaptive use of game qualities in education. [↑](#footnote-ref-5)
6. The complete case study list includes *Christian Leadership, Classroom Management, Composition I, Foundations of Physics and Chemistry, Making Information Work for You, Principles of Microeconomics, Special Topics in History: Interpreting History through Games, Student Teaching Seminar,* and *Systematic Theology II.* Cases omitted from this article reflect a more technical and professional orientation with less salience for theological and religious education. [↑](#footnote-ref-6)
7. Nicholson, for example, organizes tabletop games according to “gaming experience archetypes” (2010, 27-30). *Social games* bring about verbal and emotional engagement among players, often through persuasion and bluffing. *Narrative games* facilitate storytelling as players respond to unfolding events. *Action games* require tactical decision-making, often through hands-on manipulation of game pieces. *Knowledge games* hinge on quizzing and the rapid recall of particular facts. *Strategy games* require systems analysis and long-term resource management. [↑](#footnote-ref-7)