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Takahiro Sato

Justin A. Haegele
Old Dominion University, jhaegele@odu.edu

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Takahiro Sato
Kent State University

Justin A. Haegele
Old Dominion University

Abstract

The purpose of this study was to investigate kinesiology students' experiences in an undergraduate online life span motor development course. This study was based on a theory of transactional distance (Moore, 1997). Seven undergraduate kinesiology majors (5 females, 2 males) enrolled in an online course at a Midwestern public university in the US participated in this study. Data collection included face-to-face, open-ended interviews, bulletin board discussion logs, and online assessment projects. A constant comparative method was used to interpret the data, which allowed themes to emerge from the data as well as from the theoretical framework. Three interrelated themes emerged from the students' narratives: *rigors and flexibility in online course learning, peer feedback experiences,* and *video assessment analysis.* The results of this study demonstrate that undergraduate students can have independent learning styles and kinesthetic characteristics and concepts when enrolled in online life span motor development coursework. Online kinesiology courses should be centered on a set of student tasks (lectures, projects, and assignments) that constitute learning experiences that engage students, either independently and collaboratively, in order for them to master the objectives of the course (Carr-Chellman & Duchastel, 2001).

Keywords: Online education, kinesiology, undergraduate students, engagement, and assessments

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Online learning is a popular form of education for both undergraduate and graduate education, a point underscored by the fact that in the United States, 5.5 million students took at least one online course in 2012 (United States Department of Education [USDE], 2014). Moreover, online learning is acknowledged as a unique educational experience unlike face-to-face learning (Cavanaugh & Jacquemin, 2015). Therefore, effective online education is not simply a matter of adapting the structure and modes of interactions of a face-to-face classroom environment to an online platform. Rather, cognitive expectations, instructional choices, and supportive practices need to be carefully reconsidered with recognition of the complexity of issues (Peters, 2003). For example, part of the challenge of online education is for students and instructors to become comfortable in the virtual educational milieu. Based on their educational experiences in face-to-face courses, students and course instructors have a clear sense of the roles that both should play (Rice & Carter Jr, 2015). However, when the domain of the class moves online, course instructors and students are left to determine their new roles (e.g., online mentors or teachers; dependent or independent learners) and how to perform those roles within the online space (Rourke, Anderson, Garrison, & Archer, 2001).

Ideally, online courses are centered on a set of student tasks (e.g., lectures, projects, and assignments) that constitute student learning experiences, both independently and collaboratively, and that provide mastery of course objectives (Carr-Chellman & Duchastel, 2001). Despite a dramatic growth in online education in various academic areas in kinesiology (Bryan, 2014), there is a lack of research examining the effectiveness of online modalities, and guidelines are limited in terms of developing and implementing an appropriate educational experience for undergraduate students enrolled in online courses. Recently, adapted physical education (APE) scholars studied graduate students' and in-service physical educators' experiences (Sato, Haegele, & Foot, 2017a), engagement (Sato & Haegele, 2017), online course materials and content (Sato, Haegele, & Foot, 2017b), and graduate professional development (Sato & Haegele, 2018) through online APE graduate courses using andragogy (adult learning theory). In summary, the results of these studies demonstrated that in-service physical education teachers can have positive learning experiences when learning about teaching students with disabilities and that online APE courses can help participants store and access online reading materials and assessment tools that solve teaching issues and concerns (Sato & Haegele, 2017; 2018). The participants of these studies believed that online courses helped them to improve the quality of APE classes at their own school districts.

While research has begun to look at how graduate students and in-service teachers experience online coursework in some kinesiology areas (i.e., APE), these experiences may not be transferable to all undergraduate students or content areas. Thus, it is important to evaluate experiences in other content areas, such as motor development, to examine whether these content areas within kinesiology can be effectively and appropriately disseminated using online modalities. Furthermore, because of the popularity of online courses across student rank (e.g., undergraduate, graduate), it is important to broaden the research base to include undergraduate students' experiences. Therefore, the purpose of this study was to investigate undergraduate kinesiology students' experiences in an online life span motor development course. The research questions that guided the study were as follows: (1) How did the online life span motor development course influence undergraduate students' interpersonal interactions with other classmates and the instructor? (2) How did undergraduate students' academic and social experiences contribute to student learning outcome?

Theoretical Framework

This study was based on the theory of transactional distance (TTD) (Moore, 2013). This theory posits that the inherent physical distance between the teacher and students in distance learning "leads to a communication gap, a psychological space of potential misunderstandings between the instructors and the learners" (Moore & Kearsley, 2005, p. 224). It is then the obligation of the instructor to bridge this transactional distance by using special teaching techniques (Moore & Kearsley, 2005). According to Moore (1983; 2007), transactional distance is determined by three factors and three variables. The three factors are: the teacher, the learner, and a means of communication, without any of which there can be no educational transaction (Moore & Kearsley, 2005).

Moore (2013) also cited three important variables that distance learning teachers and students need to take into account: dialogue, structure, and learner autonomy. Dialogue refers to the interpersonal interaction aimed at the communication, construction of knowledge, skills, and dispositions between students and teachers (Moore, 2013). Online course components can accommodate or be responsive to each learner's individual needs (Moore & Kearsley, 2005). This requires a high range of thinking skills from the learner, including thought about the learning activity, or meta-cognition (Gokool-Ramdoo, 2008). The second factor is the structure of the course, described as the level of the course's rigidity and flexibility. This factor includes aspects such as the extent to which course goals and objectives are established, and how pedagogical practices are used in teaching the course (i.e., direct vs. indirect instructional method) (Moore & Kearsly, 2005). Structure should help to organize the teachers' and learners' reflective practices, enhance student participation (Deschenes & Maltais, 2006) and support teachers and students when negotiating teaching and learning processes. The third factor, autonomy, refers to the sense of both independence and interdependence perceived by learners as they engage in the course. Autonomy is intimately related to a learner's sense of self-direction and self-determination, which are significantly influenced by course dialogue (Giossos, Koutsouba, Lionarakis, & Skavantzos, 2009). Moore (1972) focused on the concept of the autonomous learner as being responsible for decreasing transactional distance, given their position in the structure and dialogue dichotomy.

According to transactional distance theory, teachers and learners both participate in the shared experience of exploring a common world (Keegan, 1993). Learning happens through mutual sharing and negotiations of meaning between the teacher and learners in a manner that constantly shifts the locus of control from one to others through the feedback process, which Saba (2007) refers to as the "feedback loop" (Gokool-Ramdoo, 2008). A strong locus of control is defined as learners who hold beliefs that the outcome of a situation is contingent on their own behaviors. Those with a strong locus of control appear to have higher rates of task completion than those with less strong locus of control (Parker, 2003). This is seen to be a determinant of learners' self-efficacy and can have strong links with self-directed learning. Because of the inherent relatedness of transactional distance theory to online learning, this was deemed an appropriate theoretical basis for the examination of undergraduate students' experiences in an online motor development course.

Method

Research Design

This study adopted a descriptive-qualitative methodology using an explanatory case study design (Yin, 2017). Qualitative studies typically focus in depth on relatively small samples, even a single case (n=1), selected purposefully (Patton, 2014). The main principle of the case study method is to better understand complex educational and/or social phenomena while retaining the holistic and meaningful particularities of real-life circumstances (Yin, 2017). Thus, an explanatory case study is appropriate for exploring undergraduate students' experiences in an online kinesiology course. This study may also be considered as action research (teacher research), as a "teacher as researcher" approach was utilized to develop and improve teaching and learning (Reason & Bradbury, 2008).

Participants and Setting

All participants were undergraduate students enrolled in a fully online life span motor development course at a Midwestern University (MU) in the US. This is a mandatory course for several campus programs of study, including physical education teacher education, physical activity and sport performance, exercise science, and athletic coaching. Five to six sections (25 students per section) of this online course are taught by five different online certified faculty members (who received subject matter training) each semester. This online life span motor development course was reviewed by online course designers for quality control purposes. This course focused on motor development across the life span and investigated the parameters of physical growth and development, motor skill acquisition, and correlates of motor development. Some examples of course content included fundamental movement concepts, locomotor skills, object control skills, manipulative skills, physical growth, and health-related fitness. Distance education designers periodically reviewed the online course syllabus, bulletin board assignments, course grades, exams, and other projects for quality control purposes. Typically, approximately 100 to 150 students are enrolled in life span and motor development courses each semester. In this study, participants were recruited from those enrolled in the lead researcher's (one) section of the course (a total of 28 students) during the spring semester of 2017. The study commenced once approval was granted from the lead researcher's Institutional Review Board (IRB). Individuals were contacted via electronic mail (e-mail), sent by the primary researcher, and asked to participate in this study. Potential participants were explicitly notified that participation in the study had neither influence over their course grade or evaluations, nor on the instructor's opinion of students. The lead researcher sought prospective participants who had not taken any previous kinesiology-related online courses. Ten prospective participants were successfully identified. In this study, seven (5 females, 2 males) (Katy, Nicki, Joan, Valerie, Kathleen, Jon, & Chuck) agreed to participate and completed two interview sessions with the lead researcher. All participants provided permission to use data from several assignments (e.g., online assessment project, bulletin board discussion questions) for this study. Further information about the participants can be found in Table 1.

Table 1.

Participants' Demographic Data

Pseudonym	Gender/Age	Status	Major	Previous Online Kinesiology Courses	Online General Required Course
Jon	Female/20	Sophomore	Physical Education	0	0
Chuck	Male/23	Senior	Exercise Science	0	1
Katy	Female/21	Sophomore	Exercise Science	0	2
Nicki	Female/18	Freshman	Exercise or Physical Education	0	0
Joan	Female/22	Senior	Exercise Science	0	6 (before transferring to MU)
Valerie	Female/19	Sophomore	Exercise Science or Physical Education	0	0
Kathleen	Female/22	Senior	Exercise Science and Health	0	2

Note: Pseudonyms were assigned to all participants to ensure anonymity.

Data Collection

Data were collected during the spring semester of 2017. Data collection included face-to-face interviews, bulletin board discussion logs, and an online assessment project. As supplemental material, this study used a demographic questionnaire which included questions pertaining to the participants' personal characteristics (e.g., race, age, gender), current academic progress, and program of study.

Data source 1: Face-to-face open-ended interview. According to Yin (2017), the researcher has two jobs in conducting interviews: (a) to follow the interview case study protocol, and (b) to ask the researcher's actual (conversational) questions. Using a face-to-face interview approach, the lead researcher asked participants factual questions as well as their opinions about online content, technology, learning tools, and academic experiences associated with their perception of the course (Yin, 2017). All interview questions are listed in Figure 1. Two face-to-face interviews were conducted for approximately 60–90 minutes with each participant during midterm and final exam weeks. The specific questions were carefully worded to ensure relevance to the current study (Yin, 2017).

1. As a kinesiology undergraduate student, how does your experience of online education courses compare with traditional course instruction? How do you like or dislike it?
2. In what ways, could online education courses serve your educational needs?
3. As a kinesiology undergraduate student, how do you feel about the communication between yourself and the instructor? Between you and other students?
4. As a kinesiology undergraduate student, do you think your learning outcomes could be achieved through online education courses? Why? How?
5. As a kinesiology undergraduate student, how do you view the feedback from the instructor? Is it in a timely manner? Constructive? Please give some examples.
6. As a student, how do you think the technical support provided from university? Do you receive any other type of support, such as enrolling in online education courses, electric data base, and written information about the kinesiology program? If you have any complain, is there anyone you can address to and solve your problem?
7. How do you view your online education environment (blackboard or flash line)? e.g., quality of graphica, layout, user friendly, and navigation etc?
8. How does the amount of course work in your online education courses compare with traditional in-class instruction?
9. As a student, what could you do to improve the quality of your online education courses?
10. What do you think are the important factors determining the quality of the online instruction you receive?
11. What factors would lead you to choose online educational courses rather than traditional in-class courses?
12. As a student, how would you rate the overall quality of the online education courses you receive? Very good, good, moderate, or not good? Why?

Figure 1. Interview questions

Data source 2: Bulletin board discussion log. Bi-weekly bulletin board discussion logs, which were developed by Yang and Cornelius (2004), Sato et al. (2017a), and Sato & Haegele (2017) and revised to focus on undergraduate student online course experiences, were adopted for this study. Each question included a two-paragraph maximum (100-150 words) and was submitted as a bulletin board discussion post in the course webpage. All participants were also required to post comments and feedback on classmates' posts. Examples of bi-weekly bulletin board discussion log questions included:

1. What types of feedback did you receive from the online course instructor? Did communication through *Blackboard Collaborate* and *Google. Docs* help your learning process? How did you analyze your learning experience?
2. What experiences were rewarding and/or problematic when engaging [collaborating] with peers in the online course? How did it make you feel?

3. What were your challenges when interacting with peers in the online course? Can you describe your experiences with the online bulletin board discussion with other students? Did peers in the course provide feedback, suggestions, or opinions you expected in the discussion?

Data source 3: Online assessment projects. This data source included a purposeful collection of undergraduate student work that demonstrated knowledge and skills of assessment and evaluation using the Test of Gross Motor Development - II (TGMD-II) (Ulrich, 2000). This included observations of a video analysis performance based on pre-specified performance criteria, assessment of student learning, analytical skills, and knowledge of evaluation (Barnstable, 2010). The course instructor used multimedia technology that allowed students to collect and organize artifacts (e.g., testing protocols, scoring rubrics, additional data) with hypermedia links connecting the evidence to the TGMD-II (Ulrich, 2000). The instructor read the reports, provided feedback, and allowed students to revise materials before they uploaded their assessment projects to the blackboard system. The reports of these assessment projects demonstrated students' learning progress during their course experiences.

Data Analysis

A constant comparative method (Boeije, 2010), which allowed themes to emerge, was used to interpret the data. Using this strategy, each potentially meaningful piece of data in the transcripts from the first set of interviews was coded independently by the first and second researcher and differences were discussed. The second set of interviews, as well as data from bulletin board discussion logs and TGMD-II assessment reports, were coded by the lead author and then checked by the second author. The researchers conducted a second round of coding key terms in the transcripts of data sources. Some codes were combined during this process, whereas others were split into subcategories (subthemes). In addition, two peer debriefers reviewed the codes to avoid potential researcher bias. Coded data from each participant were compared to identify similarities and differences. Further, after peer debriefing, the researchers conducted a second round of coding key terms (e.g., independence, self-direction, guided learning, and application) in the transcripts of data sources. Some codes were combined during this process (similar terms such as assessments and measurements), whereas others were split into subcategories (subthemes). Finally, the researchers examined the final codes to organize them into a hierarchical structure using individual and group coding percentage. Then, all data and definitions of key terms were sent back to all participants for a second round of member checking for final confirmation. The researchers grouped the codes into thematic categories, which were then refined into recurring themes (Boeije 2010).

Trustworthiness

After transcribing interview data, trustworthiness in this study was established through triangulation, member checking, and peer debriefing. Triangulation involves the use of multiple perspectives, such as data from interviews, online assessment projects assignments, and bulletin board discussion logs. The intention of triangulation is to evaluate the accuracy of the data, as opposed to seeking universal truth (Merriam, 1998). Member checking was used to reduce the impact of subjective bias (Patton, 2014). The researcher distributed copies of the analyzed themes from the assignments, online discussions, and the transcribed interview data to participants. The participants' acknowledgment of the accuracy of the data and of the researchers' interpretations of the data ensure that trustworthiness will be established (Merriam, 1998). Peer debriefing is a

process of exposing oneself to a distinguished peer in a manner that parallels an analytic session, with the purpose of exploring aspects of inquiry that might remain only implicit in the inquirer's mind (Patton, 2014).

Results

Explainable in the logic of the TTD (Moore, 2013), three interrelated themes emerged from the undergraduate students' narratives. The first theme, *rigors and flexibility in online course learning,* exposes the advantages and disadvantages the participants perceived regarding learning experiences while enrolled in the online life span motor development course. The second theme, *peer feedback experiences*, describes participants' experiences with peer feedback in the bulletin board posts in the discussion narratives in the forum. Lastly, the final theme, *video assessment analysis,* describes how the participants demonstrated their knowledge and skills of assessment and evaluation through a child's performance in the video clip in the blackboard system.

Theme I: Rigors and Flexibility in Online Course Learning

Overall, most participants expressed a belief that the instructor should understand what and how students learn and gain skills through rigorous and flexible assignments, lectures, and interactions (e.g., bulletin board assignments). They believed that their instructor needed to be competent in understanding students' interests, academic backgrounds, and habits before preparing rigorous and flexible course materials and assignments to motivate student learning. For example, all participants preferred that the instructor used a variety of assignments (e.g., quizzes, journal writing assignments, projects, exams, and discussion board posts) to evaluate performance rather than midterm and final exam grades only. Jon expressed his appreciation that the instructor spent tremendous effort and time preparing rigorous and flexible course materials, learning sessions, and assignments.

> I really enjoyed this online course. The online course format is different from face to face course. Maybe, I lose some motivation when the course materials are difficult to follow or assignment directions are not clear. In this course, my online course instructor prepared various supplemental materials and additional documents that enhanced my motivation for learning. For example, I liked the weekly and bi-weekly assignments, because they kept me motivated to meet my learning goals and objectives. (Jon, interviews).

Similarly, Katy explained that it was helpful that the level of assignment difficulty was identified in the syllabus at the beginning of the course. Therefore, she was mentally prepared to plan her assignment schedule throughout the semester. Katy said:

> I think when I saw the syllabus, the online course instructor described the level of difficulty of assignments. That was very helpful. He used the term moderate and high intense/time consuming to describe the weekly assignments. I believe online course instructors need to take extra care or attention to help student learning. He wrote weekly reports related to course goals and objectives and how we needed to study for the week. When I had rigorous assignment such as TGMD-II video analysis project, he was supportive. He sent us information on how to score and analyze the performance using Powerpoint, a 5 minutes video (he created), office hours availability, and offered to proofread feedback before submitting the final

> project report. I think that the online course instructor offered various supports that helped our learning (Katy, interview).

As Katy persisted from the beginning to the end of this life span motor development course, she felt that healthy interactions and communication with the instructor enhanced her learning experiences. Another participant, Chuck, mentioned that "when we had weekly assignments, the online course supported us to have good study routines and habits throughout the year. Plus, I think the online course instructor and students communicated better and we received weekly responses from the instructor about how well we did for our assignments." It was evident from the participants' narratives that as the semester progressed, their locus of control changed from the instructor to participants (external to internal control) (Deschenes & Maltais, 2006).

Theme II: Peer Feedback Experiences

All participants felt that bulletin board discussions using asynchronous (text-based) learning activities helped to increase social interactions with classmates. However, a number of positive and negative experiences were expressed regarding bulletin board discussion communication. Among the positive experiences, participants reported that learning was maximized through sharing resources and coaching opportunities. Importantly, however, two concerns were also evident. First, many participants struggled to reply to their classmates' bulletin board posts with critical feedback in a positive manner. Second, each participant could check the number of replies from classmates and compare their replies with those of their classmates' posts. All participants felt emotionally hurt when only a small number of classmates posted feedback to their posts. They felt that the quality of their posts did not stimulate classmates' learning interests. For example, Chuck shared his experiences:

> When I had the bulletin board assignment (focusing on stages of movement), I selected kicking…I posted how to kick soccer ball appropriately. I remember I wrote the four steps of movement. I did not mention one step (foot-eye coordination follow through). One of classmates mentioned that this is not how children kick and you need to add 'keep head down and follow through with kicking foot.' I know she was passionate about soccer as a part of her life, but I thought her comment was offensive and I did not like it. From my perspective, I thought she meant to be mean. I think we need to learn how to provide corrective feedback in positive manner (Chuck, interview).

Chuck suggested that it would be helpful for instructors to provide samples of feedback, comments, and narratives. He also said that "many undergraduate students tended to use humor to create a more attractive learning environment. In the online course, this could be interpreted as rude comments and feedback." Similarly, Joan said that she "saw some students become reactive rather than responsive about rude or offensive comments." Another participant, Nicki, shared her belief that bulletin board discussions unexpectedly created a competitive arena of intelligence among participants. She explained:

> I think the bulletin board discussion seemed to become a competition about who posted good responses. If their bulletin board posts stimulate our classmates' learning, they received positive comments from others. I remember that I posted my responses of advantages and disadvantages of health-related fitness, but I only had 4 comments and when I checked the others, there were a few students who had more than 15 replies. I felt that I did not do a good job for the assignment. I think the bulletin board discussion

> maximizes our learning experiences, but at the same time, it stimulated pressure and stress of who is doing good jobs (Nicki, interview).

Nicki explained that she was pleased with the many responses from classmates, which helped her feel engaged in the online course discussion. Her sense of engagement blossomed through her personal interaction with other classmates and course contents (Conrad, 2002).

Theme III: Video Assessment Analysis

One assignment required students to assess and evaluate a video of a female student (2nd grader) using the TGMD-II (Ulrich, 2000). Many study participants struggled to complete this assessment project, however, because they found it difficult to score and analyze the data using the performance criteria charts. Many participants repeatedly re-watched (5 to 10 times) and scored each locomotor and object control skill. After they completed data analysis, students were required to write a final report that identified scores given and answered seven questions about their experience with the assignment. All participants explained that they did not have the background experience when they assessed the girl using this assessment tool. Then, they shared concerns about their own biases, recall of performance criteria, and gaps between developmental/chronological age appropriate performance. They were unsure whether they evaluated student performances accurately. Valerie explained that:

> I think this assignment was a great experience for me. If I assessed a child in the gym space, I had only one time for observation and scoring. I think I would miss one or two components of performance criteria. But using the video, I could re-wind the video repeatedly and I could identify whether the girl met performance criteria or not. I reviewed 5-10 times for each skill to make sure I was scoring right. It was difficult, because each trial was completed between 3-10 seconds. I also think that when I scored her object control performance, I unconsciously brought my personal bias or subjective views, because I was softball player in high school, I know throwing and swinging are my expertise. When I scored these skills, I considered level of performance success in addition to presence or absence of performance criteria (Valerie, bulletin board discussion).

Valerie reported the success she felt because the course allowed her to conduct multiple observations and assessments. She stated that she felt she would have had a better understanding of the assessment technique (i.e., how to minimize personal biases) if this assessment project had been conducted in the gym space. However, she felt that the online course had advantages because it offered the opportunity for repeated observations of the same performance through video. Similarly, Katy also said that

> I overanalyzed the TGMD-II assessment scoring. I knew I needed to care about the presence or absence of her locomotor skills. But at the same time, I considered the level of success rates of each performance criteria for the locomotor and object control skills. I thought I scored in hard and tough ways. At the same time, she was 2nd grader. We may need to consider the level of performance success and developmental age appropriateness of her performance. When I checked the bulletin board discussion, I found that many classmates were concerned about this issue (Katy, interview).

Katy believed that when she assessed the child's performance, she should have considered a balance of developmental and chronological age appropriateness of performance, even though the test only required an evaluation of performance criteria. She found that many classmates had various results, rationale, and responses about scoring that were similar to hers. She felt that that was a limitation of online learning, in that it was difficult for all classmates to share understanding about assessment and evaluation process.

Kathleen explained that

> I asked my classmate if we could do our assessment projects together. But, we did not meet face to face. We opened our social media network (Facebook messenger) and once we completed each skill, we discussed our results. Then, there was the TGMD-II assessment project form. We opened the Google.docs system and wrote key points of observation of the locomotor and object control skills. Basically, how the girl met the performance criteria in the video clips. I feel that discussing this with my classmate helped me increase my self-confidence with administering the test in the future. There are a few skills that we disagreed on, but I think this disagreement helped us to open our conversation. Online communication made me feel that I had to be honest and tell what I thought about the assignment (Kathleen, interview).

Kathleen felt that peer evaluation of the assessment project contributed positively to student engagement, since both students were required to provide specific and effective feedback, opinions, and thoughts rather than only general assessment statements. She felt that the instructor should require all students to complete a peer evaluation process, because it was important to learn more about inter-rater reliability as well as new educational technology (e.g., Google.docs system).

Discussion

The purpose of this study was to investigate undergraduate kinesiology students' experiences in an online life span motor development course. The results demonstrated that participants had new learning experiences which helped them store unique knowledge and access online discussion and bulletin board and offered experiential learning that maximized their educational process. The content knowledge acquired during the online course facilitated their shift in orientation from dependent learners (e.g., memorizing motor development terminology) to independent learners (e.g., requesting proofreading checks by the instructor) (Moore, 2013). Although the online course has some limitations, such as the lack of an automatic and intimate connection inherent to physical presence in a classroom and the lack of real-time interactions, students believed that the online course successfully balanced learner-to-instructor, learner-to-content, and learner-to-learner interactions in the online platform. In TTD, Moore (2013) stated that success of distance education should be based on learner's autonomy which helps learners to improve independence and self-management relative to establishing goals, seek support when needed, manage time, implement learning strategies, evaluate course outcomes, and provide appropriate learning materials and opportunity for interaction.

The participants in this study realized that rigorous learning was necessary when course assignments and lecture contents required deep, critical, and inquiry-based learning (Schnee, 2008) and a higher level of quality of both the effort and outcome (Ainsworth, 2011). In this study, the

instructor assigned all students to answer bi-weekly discussion board questions (e.g., how do teachers and coaches respect children's' range of motor skills abilities and learning abilities in different rate?) (Robinson, Webster, Logan, Lucas, & Barber, 2012). This was perceived as a rigorous assignment among participants. This was meaningful, as it helped students define what rigorous learning meant to them (Duncan, Range, & Hvidston, 2013).

In addition to rigor, this study also demonstrated the importance of student flexibility in learning experiences. The term *"flexible learning"* means to place students' learning needs and choices at the center of educational decision making. This encourages students to become active participants with deeper approaches to learning (Nikolova & Collis, 1998). This study found that students were intrinsically motivated to learn new academic content through the access and use of web-based supplemental materials (i.e., perceived ease of use in flexibility learning) (Drennan, Kennedy, & Pisarski, 2005). For example, the instructor offered quizzes or short journal writing assignments in a variety of formats (e.g., PDF, Microsoft word documents, and Excel documents) as well as a choice of reading selections (research and practice-based reading). In TTD, the students with a strong locus of control are directly related to course satisfaction. This means that students become more successful in online courses when offered a wide range of materials and learning options for use as they deem suitable (Spector, 1982).

The students in this study viewed the online bulletin board discussion as a way to share ideas and resources with peers, reflect deeply on their academic learning experiences, and expand their thinking through exposure to various perspectives and opinions (Agee & Smith, 2011). Peer feedback helped each participant establish realistic and valid judgments about their own posts (Boud, Lawson, & Thompson, 2015: Sato, Haegele, & Foot, 2017b: Sato & Haegele, 2017). It is important that peer feedback and responses of artifacts using the discussion board provided all students with access to peer feedback and response opportunities for "a second look" and "a second think" about bulletin board discussion practices. All students reflected that this interactive learning experience made them think not only about "how to do it" but also "why it should be done" in the online course (Collett, 2007). However, in this study, students perceived that successful online bulletin board discussion did not seem to be easy because some students provided critical, judgmental, and controversial comments that caused misunderstandings, conflicts, competition, and hurt feelings during text communication (Jahng, Nielsen, & Chan, 2010). When students failed to negotiate meaning, they gave up on more sophisticated debates, the result of which may be that discussions remained at superficial levels and created poor quality of learning experiences (Francescato et al., 2006: Na Ubon & Kimble, 2004). TTD (Moore, 1984) explains that students in online learning environments should be provided an opportunity to decide on interactive learning strategies that best suit them. Therefore, the discussion board should be developed based on three well-rounded or balanced components of instructor-learner interaction, learner-learner interaction, and learner-content interaction. The discussion board should help all students acquire and learn new interactive and academic experiences that allow them to understand, synthesize, analyze, and apply the information they receive with the knowledge they already have (Moore, 1984: Ustati & Hassan, 2013). Online instructors must understand students' different learning styles and develop bulletin board discussions that stimulate students' knowledge and scaffolds students' learning process during the online course.

The students in this study found that the video assessment analysis assignment helped them improve their video-reflective practices and observational skill development. The objective of this practice was for the students to understand why they screen and monitor a child's gross motor

skills the way they do, how to shake off motor skill constraints and to produce new perspectives into students' learning experiences (Palloff & Pratt, 1999). All students believed that, as inexperienced in motor skill assessments, they were not confident enough to assess children with only trials of each motor skill in a gym space or playground, because they may not be able to capture performance criterion of locomotor or object control skill. Therefore, the use of video to review, analyze, and discuss critical aspects of locomotor and object control skills facilitated an expansion of professional (coaches, instructors, and therapists) vision and an improvement in instructional reasoning (Lewis, Moore, & Nang, 2015). The students understood that the video assessment analysis was critical in order to evaluate the child's current and future participation in movement-related experiences (Robinson et al., 2012). In addition, early detection of delayed or disordered gross motor development is of high importance and should involve primary medical care (Pusponegoro, Soebadi, & Surya, 2015).

Students also used the video assessment analysis as a useful assignment in facilitating peer feedback and self-reflection. For example, they used a Google.doc system and social media that allowed them to exchange constructive criticism as well as to reflect on their own assessment skills and evaluations. The constructive criticism helped all students explore whether they would reflect as openly if they knew they were going to be critiqued (Lewis et al., 2015). The Google.doc system helped students become motivated, persistent, independent, self-disciplined, self-confident and goal oriented through peer interactions that included the exchange of opinions and suggestions (Sato & Haegele, 2017). Social media (e.g., Facebook, Twitter) is another tool that can act as a communicative tool external to traditional education which can enhance professional learning (Goodyear, Casey, & Kirk 2014). Facebook and Twitter are virtual platforms that allow PE teachers to share and exchange information and assessment discussion related to movement (Goodyear et al. 2014). TTD explained that, in general, many students demonstrate external locus of control behaviors such as disinterest in developing critical thinking skills and lack of intrinsic motivation. Online course instructors must stimulate students' internal locus of control in which learners adopt a deep approach to learning, develop their own intrinsic motivation and curiosity, and reflect what they learn (Rose, Hall, Bolen, & Webster, 1996). Learners who demonstrated internal locus of control prefer learning environments that maximize their degree of control over their online learning (Ishiyama, McClure, Hart, & Amico, 1999).

Study Limitation

This study has two major limitations. First, participants were conveniently selected from one state public university in the Midwest (US) where the lead author received approval and permission to observe and interview his own undergraduate students. Clearly, the relationship between the course instructor and participants in this study may raise a range of bias concerns and the course instructor faced dilemmas such as respect for academic privacy, establishment of honest interaction, and avoiding misrepresentations (Waruszynski, 2002). Statistically speaking, therefore, the findings are not generalizable to all undergraduate students who complete online life span motor development or other kinesiology related course. From a qualitative perspective, however, the reader might consider transferability to the contexts of other online programs in higher education. Second, the number of participants was small and represented rather diverse backgrounds, experiences, and cultures. Nevertheless, qualitative inquiries, including case studies, typically use small samples and, in the logic of criterion sampling, the intent is to capture and describe central themes that represent the phenomena under study for a particular cohort of interest (Patton, 2014). Our intent in using this sampling approach was to uncover common themes in

undergraduate students' online course experiences with instructor—student, student—content, and student—student interactions.

Conclusions

The results of this study demonstrated that undergraduate students can have positive and meaningful experiences when enrolled in online life span motor development coursework. However, a number of concerns were raised. Based on those concerns, the following recommendations are intended to enhance the quality of online course experiences for undergraduate students.

First, when designing online bulletin board discussions, instructors need to take into account the characteristics of a student population, such as program focus, age of learners, and amount of prior online experience (Richardson & Newby, 2006). They may need to provide various samples of appropriate discussion feedback, comments, and responses that allow students to be exposed to strategies and motivations through online discussion. This issue becomes important to address, because the nature of the learning environment varies with the nature of social interactions, learning aids and tools, and even motivation (e.g., competitive, collaborative, or cooperative) levels necessary for completion of the course. Online course instructors can monitor student responses as resources and build cognitive engagement among students or interaction between instructors and students (Stoney & Oliver, 1999).

Second, all students received guidance about how to score, assess, and write in the key points after completing the video analysis assessment. However, some students requested further clarification and asked whether they could add supplemental evidence of video assessment (Iedema & Carroll, 2011) which was identified not only the absence or presence of performance criteria, but also discussed critical incidents of child's developmentally appropriate behaviors and demonstration. Through this video assessment analysis, students must experience a sense of professional vision, autonomy, peer feedback, social relatedness, and support from classmates and instructors. This practice potentially enhances depth of reflection, promotes lifelong learning, and develops confidence and self-evaluation in the online course.

Results and subsequent recommendations are intended to improve student online learning. In this study, we learned how course instructors can use their rigorous and flexible instructional format to stimulate students' internal locus of control and enhance teachers' engagement in online learning. The ideal online kinesiology course is centered on the set of student tasks (i.e., lectures, projects, and assignments) that constitute the learning experiences that the students engage in, either independently and collaboratively, in order for them to master the objectives of the course (Carr-Chellman & Duchastel, 2001). Although the suggestions presented in this paper are framed around life span motor development coursework, these recommendations are applicable across kinesiology areas and can be utilized by faculty members across content that design and implement online undergraduate courses.

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