INTERNATIONAL JOURNAL IN INFORMATION TECHNOLOGY IN GOVERNANCE, EDUCATION AND BUSINESS
Vol. 4, No. 1, 2022
ISSN 2686-0694 (Print)
e-ISSN 2721-0030 (Online)

Prototyping a Blended Physical Education Course on Mixed Volleyball

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Abstract: In the Philippines, the dearth of team-based physical education courses and student demand for blended classes in a prominent open university paved the way for the active exploration of inclusive team-based sports in blended mode. With this, a study was conducted involving the participatory design of a physical education (PE) course on mixed volleyball. The study aimed to identify challenges encountered in developing and prototyping this blended PE course, enumerate perceived benefits among participants during the prototyping stage, and investigate the initial impressions among participants regarding satisfaction and interest. The methodology involved prototyping lessons based on sound instructional design principles and iteratively improving them based on retrospective analysis. Data were collected through retrospective summaries, observation notes, participant interviews, and a post-program satisfaction survey. Observation notes, retrospective summaries, and participant interviews were analyzed through reflexive thematic analysis. The major themes revolved around *challenges* and *perceived benefits*. Moreover, survey data was analyzed quantitatively through descriptive statistics to quantify participant satisfaction. The challenges identified were technological, logistical, operational, pedagogical, and practical in nature. The perceived benefits encompassed friendship and camaraderie, discipline, self-confidence, happiness, teamwork, love for the sport, and feeling included in the group. Quantitative results showed generally high satisfaction, which increased at the end of the sixth week. In conclusion, a blended PE course on a team-based sport like mixed volleyball can be a good option among distance learners, provided they overcome logistical and digital limitations.

***Keywords*:** blended learning, physical education, Japanese mixed volleyball

INTRODUCTION

Prototyping a Blended Physical Education Course on Mixed Volleyball

The importance of physical education (PE) in Philippine tertiary education is recognized as Filipinos believe in the importance of exercise and sports for students' mental and physical well-being. Most PE courses in higher education institutions (HEIs) in the Philippines are either in-person or online. Residential universities offer many team-based sports like basketball, volleyball, and soccer as PE courses. However, for universities providing it online, individual PE courses or sports like Yoga and Chess are offered to enable students to participate asynchronously. In

the case of The University of the Philippines Open University (UPOU), students who would want to learn team-based sports would have to cross-register to another constituent university or campus.

Since UPOU is an open and distance e-Learning (ODeL) institution, it had to navigate the challenges of offering PE courses to its students who were all remotely located. Recently, exploring the possibility of providing team-based sports through blended learning was initiated because of the latest change in geographical composition among its undergraduate students, where many are clustered in nearby cities within the capital and near the headquarters in Laguna.

Furthermore, after the COVID-19 pandemic, many residential institutions tried online education as an approach to emergency remote teaching. After realizing the benefits of this mode of teaching and learning, many universities emerged from the lockdowns with the openness to offer courses in blended mode. In the case of ODeL institutions that traditionally offered courses online, proposals to offer courses in blended mode have also sprung up. Such is the case of PE to address the needs of students who want to learn and practice team-based sports. This prompted the researchers to look for one that could be prototyped for blended learning while promoting gender inclusion.

Japanese Mixed Volleyball

Volleyball was invented in the United States by William G. Morgan in 1895. Taking a cue from tennis, volleyball was created as a sport that did not require physical contact, unlike basketball, and as a sport that could be played by a large number of individuals, young and elderly, male and female (Schutz, 1999). Hyozo Omori, a graduate of Springfield College in the United States, introduced volleyball to the Tokyo YMCA in 1908, marking the sport's introduction to Japan. In 1946, the Japan Volleyball Association (JVA) was established, marking the official beginning of volleyball in the country. Japan won several gold medals in the sport, starting with the women's division at the 1964 Tokyo Olympics, followed by the men's division at the 1972 Munich Olympics. Volleyball was historically a prominent sport in Japan. In addition to its prominence in school extracurricular activities, many students are familiar with it. (Kiyokawa, 1992).

Like other sports, rule revisions and other modifications have been implemented to increase volleyball's appeal to a broader audience. The year 1996 saw the introduction of the rally point system. The previous side-out system was superseded in 1998 by introducing the "libero," a defensive position. The libero system was implemented for two reasons: first, to increase the appeal of volleyball as a competitive sport by strengthening the defense and prolonging rallies, and second, to encourage shorter players to be able to participate. Thus, by revising the standards, volleyball has moved in a direction that made the sport more appealing (Guttman & Thompson, 2001). In addition to 6-player volleyball and beach volleyball, both of which are officially recognized as Olympic sports, 9-player, soft, and mixed volleyball are also extremely popular in Japan. As the name suggests, 9-player volleyball is played by nine players on a slightly wider court without rotation. The range of defense is narrower than that of a six-player team, and because there is no rotation, it is easier to fix roles such as spiking and receiving (Nakamura & Donnelly, 2017). Four players play soft volleyball on a court approximately the size of a badminton court, which is smaller than the court used for six-player volleyball. What is significant about the ball is its softness, which prevents injuries caused by collisions with the ball. This could stem from the fact that many students who are not accustomed to playing with a regular volleyball avoid the sport because of the bruises that result from underhand passes (Fujiwara, 1987). In recent years, mixed-gender volleyball or mixed volleyball has also become popular. Mixed volleyball has a short history and is not officially recognized by the JVA. The rules differ somewhat among various organizers, but this paper features the rules of the Japan Mixed Volleyball Association (JMVA), which is known to be one of the most popular organizers of mixed volleyball tournaments in Japan. The rules have been devised to minimize gender bias in team compositions and provide more opportunities for women to attack.

Research Objectives

The researchers found the inclusive nature of mixed volleyball, highlighting teamwork among players of different genders, to be apt as a topic for a blended PE course that they prototyped through design-based research. Before embarking on the project, the following were identified as research objectives:

1. To identify challenges encountered in developing and prototyping the blended PE course;
2. To enumerate perceived benefits among participants when prototyping the blended PE course; and
3. To investigate the initial impressions among participants regarding satisfaction and interest.

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METHODOLOGY

Design-Based Research

In an effort to accomplish the research objectives, the design-based research (DBR) methodology was used to prototype the course. It required devising and implementing a blended lesson, receiving feedback, and conducting a retrospective analysis to inform the design and implementation of subsequent lessons. The process entailed iterative improvement through reflection. Each of the four phases of the prototyping project consisted of three weeks of blended learning activities. This study spanned the first six weeks of the project or the first two phases.

Tools for Blended Learning

The tools identified for blended learning were two pairs involving a social platform and a virtual learning environment. The first pair was Moodle and Discord, while the second was Google Classroom and Facebook Group. The second pair was eventually chosen because of learning curve issues encountered by participants when they tried using the first pair of technologies.

Lesson Design

The format of the blended lesson involved a post from the instructors at the beginning of the week containing a skill that participants needed to learn in preparation for the in-person session. In face-to-face sessions, the lessons were implemented through drills after a short review of the materials, followed by games. Whole sessions were recorded so that each participant could receive individualized feedback every week. This entire process is illustrated in Figure 1.

Figure 1. Lesson Design

Data Collection

This study used multiple data sources. Data collected included interviews and observation notes that served as input for retrospective analysis. Summaries from the retrospective analysis and the other two methods were combined with the data from the post-program survey in each phase.

Data Analysis and Interpretation

To answer the first two objectives, the textual data collected were analyzed in each phase using thematic analysis. The third objective was achieved by analyzing the answers to the 5-point Likert-type items that pertained to satisfaction and interest at the end of the 1st and 2nd phases.

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Participants

Five (5) males and six (6) females participated in the first phase's post-program survey. Many of them were either novices or participants with limited experience. Figures 2 and 3 depict the ratio of male to female participants and their length of experience in the sport.

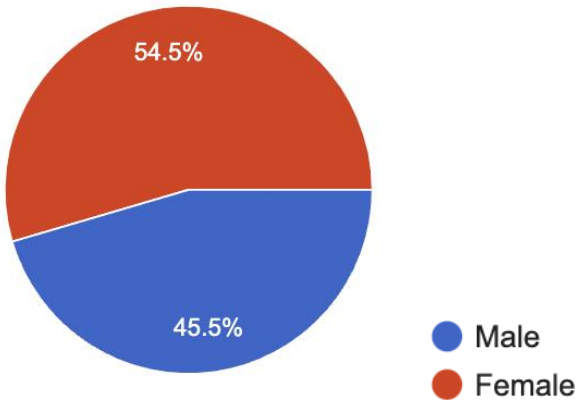

Figure 2. Participants' Gender (1st Phase)

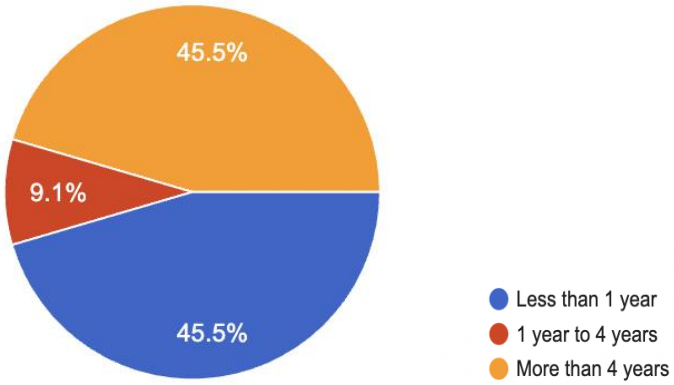

Figure 3. Participants' Length of Experience in Volleyball (1st Phase)

Eight males and six females comprised the 14 respondents to the second phase's post-program survey (Figure 4). More than half of the participants had attended five or more blended sessions by the conclusion of the sixth week (Figure 5).

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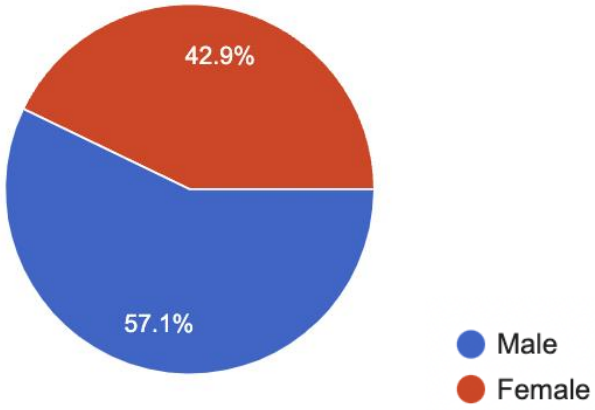

Figure 4. Participants' Gender (2nd Phase)

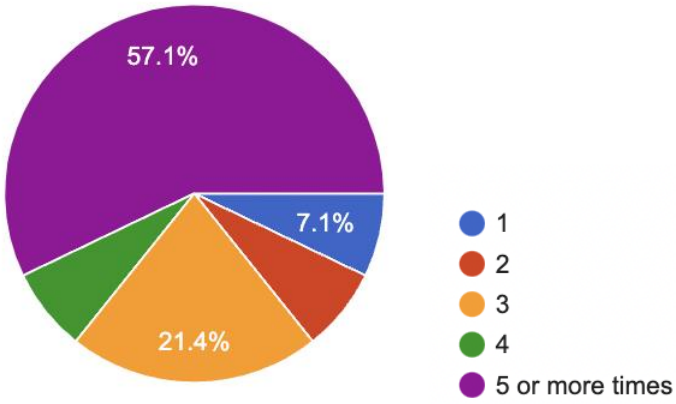

Figure 5. Participants' Attendance (2nd Phase)

RESULTS AND DISCUSSION

Challenges

Based on the thematic analysis performed, it was determined that the obstacles include technological, logistical, operational, pedagogical, and practical challenges. Participants indicated that the most significant barriers they faced were technology-related. Participants reported that the first set of platforms was challenging to use and comprehend. They also verified that logging in and registering on the first platform was difficult. However, these concerns arose from feedback after the initial few weeks, and they did not reappear when the platforms were altered.

Logistical and operational obstacles included expensive fees due to court rates, the venue's distance from their homes, injury, and time management. On the court, positioning and movement confusion dominated the pedagogical difficulties. In addition, the participants mentioned skill-specific issues such as underhand and overhand passing.

Perceived Benefits

Participants identified several benefits related to health, knowledge, and skills. Participants mentioned physical and mental health benefits such as motivation to maintain a healthy lifestyle, stress relief, cardiovascular

exercise, improved flexibility, enhanced mind and body coordination, and increased energy levels. Regarding social, emotional, and behavioral health, participants emphasized the positive impact on friendship and camaraderie, discipline, self-confidence, happiness, teamwork, love for the sport, and feeling included and valued in the group. Lastly, participants highlighted the acquisition of knowledge and skills, including skill improvement, learning proper form and technique, and gaining new knowledge.

Satisfaction and Interest

After the first phase, the average satisfaction ratings for the in-person and online sessions were 4.45 and 4.36, respectively, which are generally high ratings. At the conclusion of the sixth week, however, both groups' satisfaction ratings increased by 0.19 and 0.28 points, respectively. In addition, the collected data indicates that the mean interest ratings for mixed volleyball among participants rose by 0.27 after six sessions, which marked the conclusion of phase 2.

The researchers believe that these positive results can be attributed to the participatory nature of the project and the numerous opportunities provided to students to prepare online prior to in-person sessions and to reflect on their performance through video-based feedback in the virtual classroom. Motivation researchers presented comparable arguments (Harackiewicz et al., 2008; Latham & Seijts, 1999), and sports science researchers reported comparable results (O'Donoghue, 2006; Potdevin et al., 2018).

CONCLUSION

This paper described a study that sought to identify challenges encountered in developing and prototyping a blended PE course in mixed volleyball, enumerate perceived benefits among participants, and investigate the participants' initial satisfaction and interest levels.

Based on the findings of this study, technological, logistical, operational, pedagogical, and practical challenges were encountered in developing and prototyping the PE course. The participants' perceived benefits included friendship and camaraderie, discipline, self-confidence, contentment, teamwork, passion for the sport, and the feeling of being included.

The participants' satisfaction levels were relatively high, increasing by the end of the sixth week. While the preliminary results were promising, they are still very much inconclusive. The small participant size prevented the researchers from carrying out inferential statistics. However, the researchers have learned substantially from the qualitative data that were collected. Finally, the results of this study may guide similar proponents in designing and developing blended PE courses featuring team-based sports.

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