BLENDED INSTRUCTION DESIGN FOR SWIMMING EDUCATION IN A COUNTRYSIDE SETTING

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Major in Music, Arts, and Physical Education

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DONITA B. MABONGA

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APPROVAL SHEET

In partial fulfilment of the requirements for the degree, **MASTER OF ARTS IN EDUCATION**, this thesis entitled **"BLENDED INSTRUCTION DESIGN FOR SWIMMING EDUCATION IN A COUNTRYSIDE SETTING"** has been prepared and submitted by **DONITA B. MABONGA** who, having passed the comprehensive examination and pre-oral defense, is hereby recommended for final oral examination.

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I am also grateful to have my family by my side while dealing with my struggles in conducting this study. I am so thankful for their love and support.

DEDICATION

This study is humbly dedicated to teachers and students who wants to apply the use of flipped classroom blended instruction for swimming education. This is also dedicated to swimming coaches aiming for an enhancement of their swimming training. Also, to my students in the College of Fisheries and Marine Sciences where swimming is a valuable physical activity when it comes to engagement with fresh and marine waters especially when conducting activities related to their field of specialization like fish capture or exploration with different marine species. I hope this study would be useful for those who are aiming to explore and improve their teaching approaches towards swimming.

Donita B. Mabonga

ABSTRACT

This study assessed the effectiveness of blended instruction design for swimming education in a countryside setting for the S.Y. 2019-2020. This study employed a quantitative approach with the use of comparative research design. The independent variables of the study were flipped classroom design and the flex blended learning design while the dependent variables will be the result of the students' performance in terms of their written and practicum test scores. This research design was used for gathering data and statistical findings in order to evaluate the effectiveness of flipped classroom design and the flex blended learning design for swimming education. The overall result of the study showed that Flipped Classroom instructional design is effective than Flex Blended instructional design for swimming education as it showed higher scores in Practicum and Written assessments than in Flex Blended instructional design. The internet connectivity, technology literacy, engagement to instructional design and pretest scores are the factors with a significant relationship to scores for written evaluation in flex blended instructional design except for reading materials/videos. However, the engagement of the students towards flex blended instructional design and pre-test scores have a significant relationship for practicum performance evaluation in flex blended instructional design. The average practicum and written posts-test scores for flipped design is significantly higher than the flex instructional design. Overall, the study concluded that flipped classroom is an effective blended instruction for swimming compared to flex blended.

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Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

In 21st century, learners are empowered with the use of technology and have an easy access to internet which makes teaching – learning nowadays more challenging. So with the use of blended learning instructions, the quality of the teaching and learning process improved and the students' capabilities and advanced skills towards the use of technology would be maximized for learning purposes instead. Blended learning is very helpful for the teaching and learning process for enhancing the performance of the students (Murphy & Stewart, 2015).

Blended learning instruction is known for its combination of traditional classroom approach, online setting approach and a self-paced learning approach or modular approach. Mostly, it basically provides learning experiences which are both internet based and face to face based. This approach helps better understand the lessons to be discussed to the learners (Waldron, 2014).

There are many benefits or advantages using blended learning instruction, to name a few is the flexibility of the learning process which enables the learners to access learning materials online. Also, it helps improved the learners' professional development as well as having more

opportunities in engaging a collaborative learning with other students and with the teacher. In addition, it also provides the learners an autonomy which teaches them to set their own learning goals and be able to assess their own strengths and weaknesses in learning particularly in terms of the acquisition of knowledge and skills (Giarla, 2019). However, guidance from a teacher should still be there as well (Waldron, 2014).

The blended approach provides an opportunity for every student wherein while at home they can still share ideas and showcase a skill through the use technology and utilization of videos which may not be sometimes delivered during face to face sessions, but still the learning would take place (Tucker, 2012). However, most blended approach makes the actual setting as an avenue for the application of the knowledge and skills they have acquires during the online sessions or self-paced or modular sessions (Vernadakis, Antoniou & Derri, 2014). According to Morales (2012), blended instruction addresses the disadvantages of the traditional classroom setting which helps address the individual needs of the students as it obtains learning from the mentors and peers. Thus, through the use of blended learning instruction mentors would be able to raise globally competitive learners since blended learning helps improve the mindset of the learners including their media or technological literacy, critical thinking, communication as well as their skills in terms of information, technology and innovation.

Rabacal (2018) stated that using the blended learning instruction significantly increases the performance of the students compared to what is

commonly used instructions like the traditional instructions. Moreover, in the Lyceum of the Philippines University, blended instruction is also believed to be redefining the instruction in the classroom as well as the learning process of the students. It also emphasizes that the goal of the blended learning instruction is not to replace the original setting which is the face-to-face setting but to enhance the quality of the teaching instructions in the classroom using blended approaches (Catapang, 2018). According to Killian et al., (2019), blended learning instruction could be an appropriate solution in addressing the limited learning opportunities of the learners for a quality learning in physical education which seemed to contribute a positive learning experiences to students.

Though blended learning seemed to contribute more learning opportunities, still there is a lack of study on how a specific blended learning instructional design would benefit the students towards swimming education. And even it offers varied learning opportunities to students, the limitation on gadgets and poor internet connection in some areas could be a big challenge in adapting blended instruction for swimming in a countryside setting. However, a countryside setting especially near coastal areas can probably provide an advantage for swimming skill performance since it offers huge space for multiple activities like swimming (Konwar, 2019).

The blended learning approach has its various models but the present study opted to employ and develop two blended designs intended for swimming education namely the flipped classroom and flex blended learning. It is

because most of the literature review shows that there is a lack of studies with regards to Flipped Classroom instructional design particularly in the field of Physical Education (Lucena et al., 2018) and while the Flex or Flexible Blended learning seemed to be unexplored in terms of the students' engagement towards the modes of learning they choose, the physical setting and the way they interact with peers and teachers in the field of physical education (Kariippanon et al., 2019).

With this, the present study aimed to develop and evaluate the two blended instructional designs whether which among the two designs would be an effective blended learning instructional design for swimming education in a countryside setting.

Statement of the Problem

This study assessed the effectiveness of blended instruction design for swimming education in a countryside setting for the S.Y. 2019-2020. Specifically, it sought to answer the following questions:

1. What is the characteristic of the learning environment in terms of the following variables:

    1.1 ownership of gadgets;

    1.2 internet connectivity;

    1.3 technology literacy; and

    1.4 engagement to instructional designs?

2. Formulate the following blended instructional design for swimming education:

      2.1 Flipped classroom design, and

      2.2 Flex blended learning design?

3. What is the result of the pre-test and post-test of the written and practicum performance of the students in flipped classroom and flex blended instructional design for swimming?

4. Is there a significant difference between effectiveness of the flipped classroom design and flex blended learning design on the psychomotor performance of the students in swimming education?

5. Is there a significant relationship between the characteristics of the learning environment and the performance of students in flipped classroom design and flex blended learning design for swimming education?

Hypotheses

The following hypotheses were tested in the study:

1. There is no significant difference between the psychomotor performance of the students in flipped classroom design and flex blended learning instructional design for swimming education.

2. There is no significant relationship between the learning environment and performance of the students in flipped classroom design and flex blended learning instructional design for swimming education.

Theoretical Framework

This study is anchored on Situated Cognition learning theory. This is one of the emerging theories that supports blended learning which helps improve the quality of learning by promoting a more authentic learning environment to students. The theory believes that learners would take an active role in the community. Thus, evolving learners as participative and interactive within the given situation by the use of technology as part of the learning instruction.

Another theory also that anchored the study is the Transactional Distance theory. This theory supports the study which refers to an interaction between a teacher and a learner within an equidistant situation where learning can still take place even without the actual classroom setting with the help of technology as a means of a blended learning instruction. This theory helps promote learning and interaction between student to student and teacher to student via online learning since blended instruction do not only use traditional approach instead a combination of two. Moreover, the Online Collaborative Learning (OCL) theory also anchored the study which focuses on providing a new learning environment to learners with the use of internet facilities that are able to foster collaborative learning. On the other hand, Connectivism theory also supports the study which discusses learning as the connection of the sets of information in an online learning which enables learners to learn more complex ideas and concepts and be able to relate it into reality. The mentioned theories emphasized the continuous learning activities

in relation to authentic situations which also aims an adaptation of the learners towards changing circumstances. Hence, the learning would take place through interaction with the use of blended instruction since it motivates and assesses learning development among learners.

Conceptual Framework

The conceptualization of this study is shown in the Figure 1. The first box at the bottom is about the participants coming from Samar State University – Mercedes Campus, Catbalogan City S.Y. 2019-2020.The arrow facing upward to the middle frame, pointing out the variables needed for the study. The middle frame is all about the variables of the study and the first box at the top is about the formulation of the two blended instructional designs. The two slanting arrows from the first box pointing down to the developed blended instructional designs: Flipped Classroom and Flex Blended Instructional Design. The line between the two developed designs with a pointing arrow down to the second box at the center, indicate the difference of the learning environment of the two developed designs in terms of the ownership of gadgets, internet connectivity, technology literacy and engagement to reading materials and instructional designs.

While the arrows on the side of the two developed designs pointing down to the third and fourth boxes, which indicate the written and practicum results. The arrow above the middle frame, points out towards the possible result of the study. The lines in between the imaginary box go down to the

first box at the bottom indicate the feedback about the result from the student

participants in Samar State University – Mercedes Campus in the school year

2019-2020. The arrow above the results, points out towards the improved

performance of the participants.
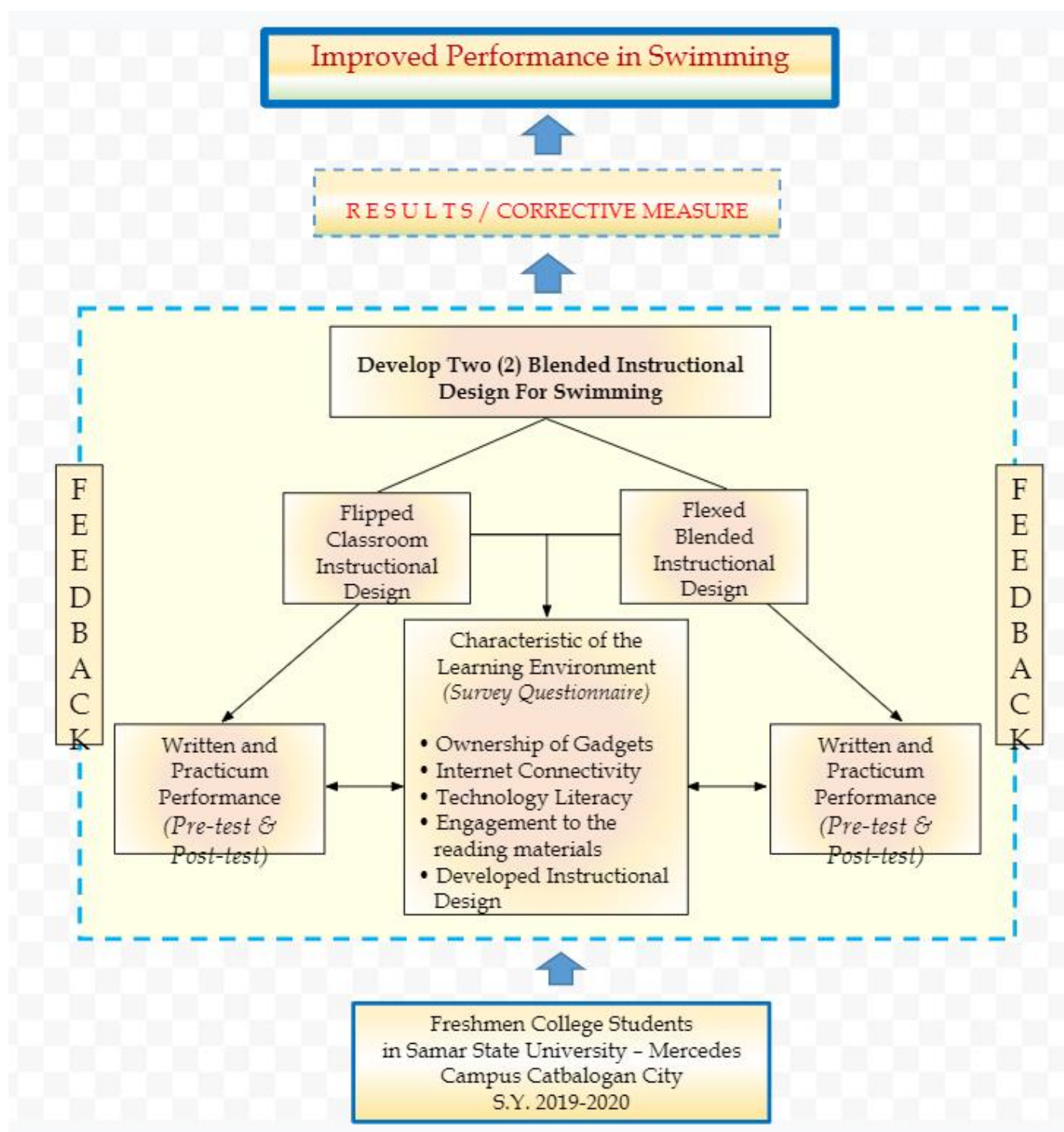
Figure 1. Conceptual Framework of the Study

The framework on Figure 2 flipped classroom design showed the flow of the teaching and learning process towards swimming using the developed design. The design was adapted from Gerstein's illustration of flipped classroom. However, the design in this study has been modified for swimming education together with its topics and various types of activities.

On the online setting, the students explore the contents by their own through accessing online materials like the module for swimming. In this stage the students engage in a self-paced approach wherein they learn at their own pace by reading the topics and watching video tutorials. They can also have chat sessions or discussions with their peers and teacher. In the "meaning making stage", the student participants would go for various online activities like taking online tests, creating reflective pods and other collaborative activities which would help them retain what they have learned.

While the face to face setting served as an actual presentation or demonstration of the lessons they have learned during the online setting. It focuses more on experiential learning where students engage in an actual practicum activity, either by group or individual. Basically, face to face setting in flipped classroom design served as an avenue for the application of knowledge and skills acquired by the students. Flipped classroom instructional design have its fixed rotation schedule with a cycle of online learning to actual learning which made this design enable to provide permanent active participation from students.
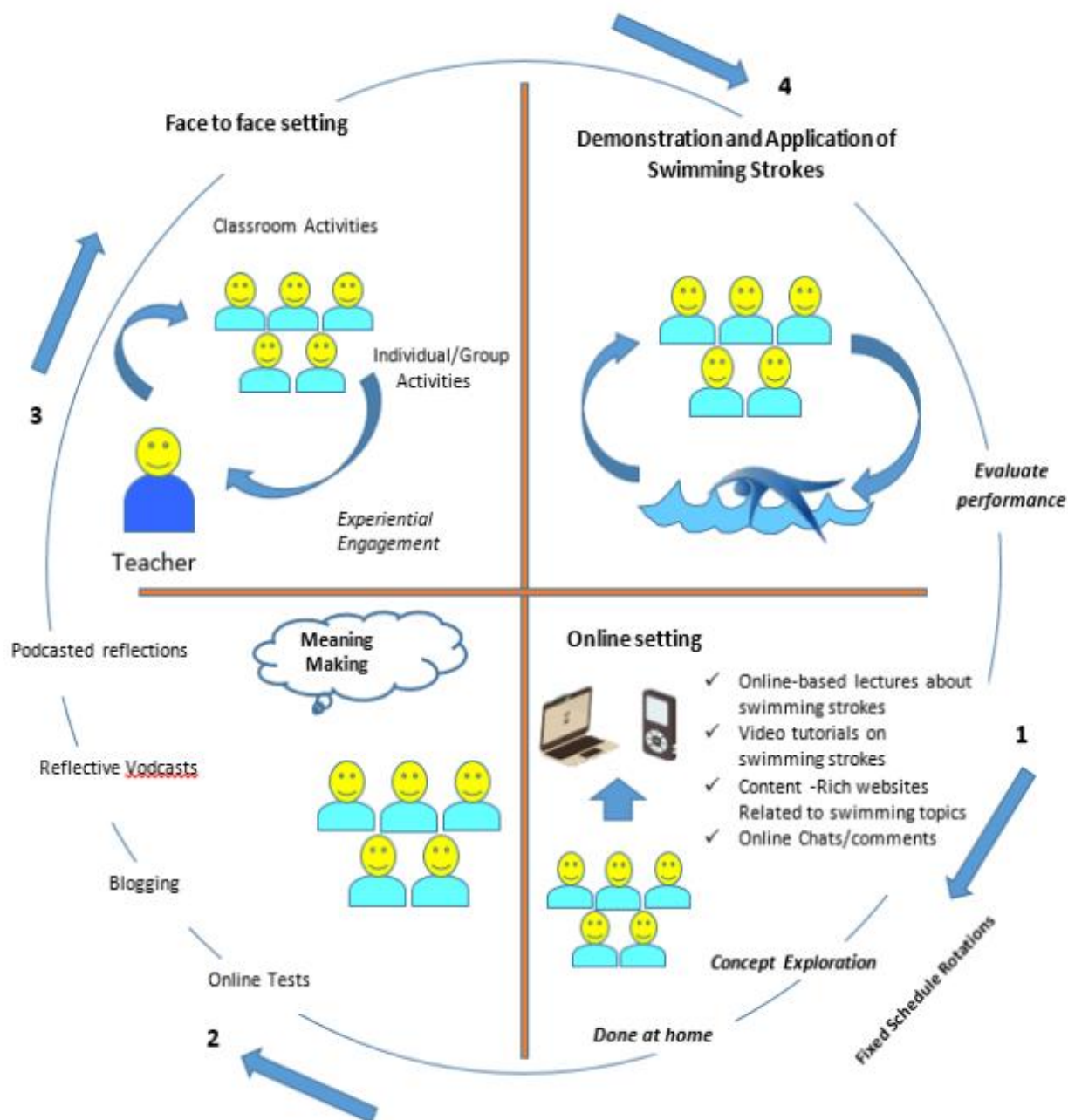
Figure 2. Flipped Classroom Design for Swimming

The framework on Figure 3 flex blended design showed the flow of the teaching and learning process towards swimming using the developed design. The design was adapted from Maxwell's (2016) flex model. However, the design in this study has been modified for swimming education together with its topics and activities.

The design was done mainly online even during actual setting or in class setting. Students learn collaboratively and independently in this approach, it is either in a small group or in an individualized learning while teachers facilitate. In an out-class setting, students practice more a flexible kind of learning compared to flipped classroom wherein the students can still do their activities anytime and anywhere they want. With this instructional design, students were motivated to become more responsible with their own learning. However, guidance of the teacher was still there to monitor the progress of the students' learning on the subject.

Although flex blended can be done mainly online and face-to-face may not be necessary sometimes, but in the case of swimming education, hands on activities were needed in order to assess the psychomotor skills. However, small groupings and individual activities of students in flex blended were done for practicum breakout sessions. The only difference of flex design is that it does not require fixed transition or rotation compared to flipped classroom were actual setting is necessary part of the rotation. Flex Blended promotes a more flexible learning which made students indulge to learn independently but scaffolding by a teacher is needed.
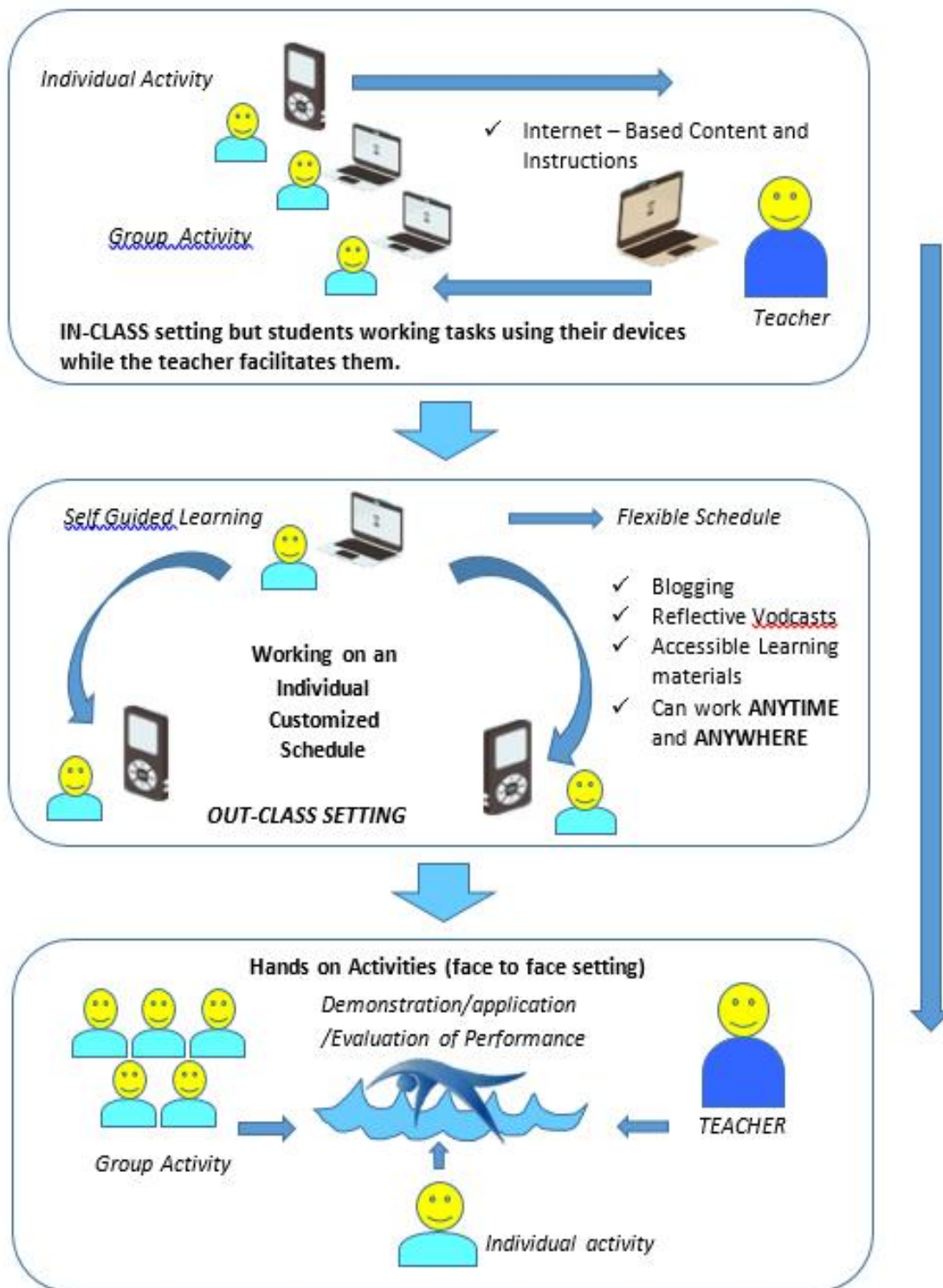
Figure 3. Flex Blended Learning Design for Swimming

Scope and Delimitation

The study focused on developing two blended instructional designs for swimming namely the flipped classroom design and the flex blended learning design. After that, the two developed blended learning designs was evaluated by its effectiveness based on the result of the performance of the students and their engagement towards the characteristics of the learning environment such as the ownership of gadgets of the students, technology literacy, engagement to reading/video materials and engagement towards the developed designs for swimming.

In addition to this, the study also assessed the significant difference between the performances of the students and its relationship to the characteristics of the learning environment in flipped and flex blended design. The study consisted of 60 freshmen-student participants: 30 students for Flipped Classroom Design and 30 students for Flex Blended learning. Before the conduct of the study there was an orientation regarding with the tasks to be done. Every before the start of the lessons in the modules developed the students was given pre-test and post-test for every written and practicum activity. The time duration was held four weeks. After that, the results of the performances were analyzed and interpreted.

The setting of the study was in Samar specifically in Catbalogan City, Samar State University – Mercedes Campus. The participants were first year college students in the school year 2019-2020 coming from Mercedes Campus as well. The study site has been selected due to its available coastal location near the

campus which made an advantage for assessing the psychomotor skills of the students in swimming.

Significance of the Study

The purpose of this study is to provide a more exciting and meaningful learning to students in swimming through the use of blended instruction. Also, to help improve the teaching strategies for Physical education specifically in swimming. This study is also useful for swimming coaches who aimed to explore a blended instruction for swimming training.

This study is significant to the following groups:

PE Teachers. Through this study, PE teachers would be also able to integrate technology with blended learning. It would also enable them to promote and provide a meaningful learning to students which would be applicable in the global world.

Administration. With this study, the administration would be encouraged to support the needs of the teachers and students by providing enough learning materials in order to prepare the learners to become globally competitive individuals

Future Educators. The findings in study would motivate the future educators to apply and utilize blended learning instruction as it is a demand in enhancing knowledge and global skills of the 21st century learners.

Students. With this study, the students would become motivated to learn in a more authentic and self-paced learning tasks which would help them set their

own learning goals, be able to regulate their own learning and be able develop a sense of accountability and responsibility. They would also be encouraged to acquire a new mindset of knowledge and global skills in preparation for their future work.

Community. Through this study, the community would be encouraged to support the needs of the education system for the betterment of the learners. They would also be indulged to help as stakeholders for the holistic development of learners in order to become an asset to the community in the future.

Researchers. The researchers would be able to utilize the data results that will be gathered by this study as basis for further studies especially in the field of physical education.

Definition of Terms

The following terms are defined in order to give clear understanding to the readers on how these terms used in the study.

Flexible Blended Learning. This refers to a learner-centered approach which encourage independence and responsibility on the learners. It aims to enhance learners' sense of autonomy and be able to have a more self-directed learning (Mayo, 20). This term is being used in the study because this is one of the attributes that would help learners develop accountability and responsibility towards learning.

Flipped Classroom. This term refers to a learning model with the use of online learning and traditional lectures (UniThrive, 2012). This term is being used in this study because it helped learners engage in a various types of learning environment and be able to have a meaningful learning.

Gadget. This refers to technological devices which has its distinctive functions and commonly used for recreation, information dissemination and communications (Mamatha, 2016). This term is being used in the study because it serves as the main tool for the learners to be able to participate and interact with the technology.

Internet. This refers to network connection of all digitals all over the world (Kahn). This term is being used in the study because upon the conduct of the study, it would be a great instrument in order to realize the evaluation of the two developed designs in the study.

Instructional Design. This term refers to the formulation of the lesson structures or instructional materials. It consists of various process in order to ensure the quality of the structured lessons (Kurt, 2017). This term is used in this study because of its aim to construct and develop a particular instructional design intended for swimming as part of the objective of the study.

Performance level. This term refers to the description of levels of the quality attainment from the clearly defined task. It particularly identifies the levels such as poor, good, very good (Perie, Hess & Gong, 2008). This term is being

used in this study to determine whether the utilization of video instruction would help enhance the performance level of the students.

Psychomotor Skill. This term refers to the ability of a person or a learner to demonstrate physical movements related to the cognitive process from the acquired knowledge or experiences (Pam, 2013). This term is being used in the study because it is one of the skill to be developed by the participants as they go along with swimming activities.

Swimming Education. This term refers to teaching and learning water activities which evolved to be recreational, competitive and therapeutic. This term is being used in the study because it is the lesson that would be incorporated in the developed blended learning designs.

Technology Literacy. This term refers to the ability of an individual to use effectively, creatively, safely and responsibly the emerging technologies (Hasse & Wallace). This term is being used in the study to determine the level of literacy of the students regarding with the use of technology most especially when it comes to technology integrated learning.

Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presented the related literature and related studies that will be used in conducting this study. It would help obtain information relevant to this study. Books, unpublished/published thesis, research articles, journals, and other reading materials both international and local were reviewed.

Related Literature

Physical Education does not only limit to face to face learning instruction but also it can be integrated with technology in order to provide better and meaningful learning experiences to students (Varol, 2014). Thus, the use of blended learning can be very useful in physical education as it can provide a remote learning where physical education activities are concerned which can be done through the help of online learning (Dwiyogo & Cholifah, 2016). However, effective assessment for the students' works should always be evaluated by the teacher with the use of blended learning. This relates to the present study in a sense that it aims to apply blended learning instruction in the case of delivering a quality instruction to physical education subjects.

It has a potential to meet the student's diverse learning needs using different modes of instruction. It does not only provide a constant learning

environment for the learners but also provide various types of learning using online – based or electronic learning (Vernadakis et al., 2012). It has also been stated that the implementation of the blended learning instructions helps improve the learning achievement of the students in the subject Physical Education (Vernadakis et al., 2014). This relates to the present study by emphasizing the possible attributes on learning that will be acquired by the learners through using blended instruction in the teaching-learning process. Blended instructions contributes a lot towards the learning satisfaction of the students most especially with their acquisition of knowledge and skills. It also provides an intense learning environment for students not only to improve their knowledge but also their practical or psychomotor skills (Back et al., 2014). Also, it has been proved that by using blended learning, the students' outcomes are significantly higher than by using the traditional approach alone – both their performance on exams and classroom performances. Also blended learning is overwhelmed preferable by students due to its blended learning components which makes them learn interestingly (Kiviniemi, 2014).

In relation to the present study, it provides an outlook regarding with the performance of the learners that in using blended instruction, the learners will be able to develop their knowledge and skills. Also, it emphasizes the use blended learning instruction which makes the lessons more exciting and interesting for the learners to learn more effectively.

Moreover, teachers who teaches physical education must have an online communication to their students in order to yield an improved

performance. However, blended physical education should only be applied to secondary and tertiary students because the primary one would not be able to do so since that main goal of physical education subject is to develop motor skills (SHAPE, 2014). In relation to the present study, this serves as the basis upon the application of blended learning instruction to physical education. It will serve as a guide as well in which teachers should have a keen monitoring schedule on the students' performance most especially when it involves an online learning. It is because students will be performing a skill with the use of internet and the performance.

In yielding students' performance requires a better online communication between teachers and students in order for them to come up clear understanding on what the students should do with all the tasks given to them. It has also a possibility for teachers to view a student's performed skill at home via internet, with that the teacher will still be able to assess the performance of the students (Daum & Buschner, 2016). However, blended physical education should only be applied to secondary and tertiary students because the primary one would not be able to do so since that main goal of physical education subject is to develop motor skills (SHAPE, 2014). This relates to the study because the use of blended learning instruction would really require a good communication between teachers and peers as well as peers to peers. Since the students can perform a skill at home it is advised that a careful monitoring on the students' tasks should always there.

In a classroom setting, videos and online interactions are considered as innovative teaching tool in blended learning formats that usually enhances student motivation in order for them to learn more effectively (Bravo et al., 2011).

It also makes their lessons more enjoyable and interesting to learn. Through using technology, the students became more motivated and engaged through learning by doing which contributes to a meaningful learning (Baytak et al., 2011). This relates the present study in a sense that in blended learning instructions, the use of videos and online interactions are obviously an inevitable because blended learning is not solely a traditional approach but a combination of both technology learning and a traditional learning approach.

In the article of Horn (2012) on "Physical Activity and Digital Learning: Two Peas in a Pod", he stated that blended learning instruction in Physical   education involves monitoring   of the teacher on the daily fitness of students   using online based instruction. Its purpose is to teach the students to become   more responsible for their own learning and be able to realize his or her own   fitness goal and live a healthy lifestyle. The students learned also to work   collaboratively while having   peer tutoring with other learners. It also stated in   the article that social interactions with the use of blended learning instructions   tend to be healthier. It relates the present study because blended learning   instruction can also be used in

physical education subjects in which it helps develop the skills of the learners and be able to help them become more responsible with their own learning and be able also to apply living a healthy lifestyle.

Another article on "Blended Physical Education: How Technology can be used in Physical Education to Personalize Student Learning" by Edington (2018), states that the use of digital technology supports the teaching strategy of instructors when it comes to personalizing learning approach. Mobile devices are used as an aid for the instruction of body movement skills. It is simply used to record the movements performed by the students and be able to review and assess their own performance. It has been stated as well that it would help improve the students' engagement in Physical Education and would serve as a foundation for having a healthy lifestyle. It can also help the instructors to assess the students' performance individually It also provides support for the enhancement of coaching skills through the use of videos in the mobile devices. In relation to the present study, it emphasizes the use of mobile devices with blended learning instruction. With that, mentors would be able to assess the students' performances including the tasks assigned to them.

Bansal (2014) states that blended learning offers a flexible and effective learning environment for the learners. It also helps choose what kind of instruction will be used depending on the objectives of the study. In other

words, teachers would be able to use variety of instructional techniques in the delivery of his/her lessons. Blended learning do not only provide a direct method of instruction but also a computer-based technology learning which involves online and self-paced learning. This includes video tutorials online, reading articles, self-testing exercises, and other online tasks. This relates the study because blended learning instruction also provide a self-paced learning through requiring the learners to become more responsible with their own exploration, discovery and construction of knowledge. It also helps the learners to learn to validate all the acquired knowledge that they get from their collaboration with peers and teachers.

Moreover, in the Lyceum of the Philippines University's article about blended instruction stated that it redefines the instructions in the classroom as well as the learning process of the students. It also emphasizes that the goal of the blended learning instruction is not to replace the original setting which is the face-to-face setting but to enhance the quality of the teaching instructions in the classroom (Catapang, 2018). However, there are some poor educational contexts in the country which have not embraced the use of blended instruction due to some reason regarding with the use of gadgets and internet (San Buenaventura, 2017).

Related Studies

In the study conducted by Sahin (2010) on Blended learning in vocational education: An experimental study, it states that the use of blended instruction

possibly increases the performance of the students. It affects student's performance that yields into a successful rate for students. The findings of the study shown that blended learning is much effective than the traditional one which is the face-to-face teaching instruction. It optimizes both online and face to face classroom setting. In relation to the present study, it emphasizes also that with the use of blended learning instruction, the students' performance will be improved and that it is more effective that a traditional approach alone.

In the study conducted by Giannous et al., (2012) on "The Impact of Blended and Traditional Instruction in Students' Performance", they stated that blended learning instruction is an integral part most especially in physical education in higher educational context. It helps the learners to become engaged more in an active learning setting wherein they would be able to develop a sense of responsibility for their own learning within their own pace of time. While the interaction in a traditional setting would serve as an avenue for the application of what they have learned during online learning instruction. This relates the present study, in which blended learning instruction is not only for other field of disciplines but also it can be used in physical education as it serve as an integral part with the quality of instruction in physical education. However, the use of traditional approach would remain and would serve as a time for the actual performances of the students.

Another study by Kyriakidis & Papadakis (2016) on Blended learning in K-12 Education: A case study for teaching Athletics in Physical Education, they stated that with the use of blended learning instruction has something to do with the subject Physical Education. They even asserted as well that through blended learning, learner would be able to get better results in learning. However, they suggested further study on the psychomotor and social aspect of the learners. But some studies have shown that there is an improvement in learning physical education regarding with the psychomotor movement of the learners (Dwiyogo & Cholifah, 2016). In relation to the study, it proves that blended learning instruction also help improve the psychomotor movement of the learners as they have an advanced instructions compared to traditional instruction alone.

The study on the Role of Blended Learning on Student Performance in Biotechnology Course by Sarabadani & Berenjian (2017), states that students under the use of the blended learning approach scored higher in the examination and more active than those with traditional learning approach. However, blended learning approach is only complementary to traditional classroom discussion not a replacement. It just reinforces the learning of the students so they can connect more and understand more the complex concepts of a certain subject. Students also have claimed that with the use of blended approach enhances their engagement towards one another and makes them feel motivated to learn the contents. This relates the present study in a sense that through the use of blended learning instruction, students

would be able to connect effectively and would be able to understand complex concepts of the lessons.

Other studies also claimed that blended learning is an effective tool on improving students' learning performances. It is because blended learning instruction utilizes various types of methods. According to Shimizu et al., (2019), blended learning helps improve the self-efficacy skills of the students and helps them become motivated as well. It also shown that students achieved better scores on their tests with the use of blended approach. Also, it gives opportunities to teachers to use various methods that would help students to become active when it comes to engaging in the learning process, thus improving the academic performance of the students (Mclaughlin, Gharkholonarehe & Rodgers, 2015). In relation to the study, it emphasizes that blended learning uses various types of methods which makes it more effective and efficient as of according to some previous studies that have been conducted.

De Jong et al., (2014), in her study entitled "Blended learning in health education: three case studies" states that blended learning is more efficient in such a way of removing barriers of time and distance. In other words, it helps reduce travel time of the learners which makes blended learning a more advantage to them. Otherwise, it makes the teaching and learning process more effective and relevant to the learners. It also promotes a positive and active collaboration towards learner's peers and teachers.

However, careful considerations on various e-learning tools should be taken into account by the teacher and the face-to-face interaction should still be there because blended instruction is not solely an online-based learning but a combination of both face-to-face learning and an online self-paced learning. Moreover, in relation to the present study, online sessions with the use of blended learning, teachers should have an extra attention in managing his or her e- class sessions in order to avoid misunderstanding of the learners. In the study of Epure et al., (2012) entitled "Blended learning in higher education: a view from within" shows that blended learning instruction have its main advantages such as improvement in the pedagogy of a teacher as well as it also increases flexibility in the learning environment of the learners. Due to the blended learning, teaching strategies becomes more interactive inn such a way that it focuses on the comprehension of the learners rather than a short-term memorization of the lesson. At the same time, the traditional learning environment would also be transformed into a flexible environment, where learners can learn at his or her own convenience and at his own will. Thus, in relation to the present study blended learning is emphasized as much suitable for college students because in blended learning instruction, self-paced and online learning is more often involved and used in the so called instructions than in traditional approach and so the face to face interactions are a bit limited for the teachers and learners.

Kumar (2012), states that blended Learning is a teaching strategy that creates teaching learning process a more integrated approach in which

different learning environments like the face-to-face instruction, online learning, social networking and the like are mixed together. It also has a goal that provides an efficient and effective learning instruction towards the learners. Blended instruction is a kind of strategy that uses technology that will provide a training for the development of the global skills. This approach also offers an effective way of teaching-learning instructions towards the needs of learners in this current fast changing environment particularly in higher education. However, in relation to the present study, the learning materials in an electronic class setting has to be structured carefully so that learners can follow the lesson comprehensively.

Gambari et al., (2017) states that blended learning instruction motivates learners to learn on their own pace and time. Also, it can help improve learners' progress, retention and satisfaction. In addition to this, some studies have also shown that blended learning instruction can enhance the students' performance. It also shown a significant difference among the three groups of teaching instruction namely the blended learning, online learning and traditional learning. However, results have revealed that the utilization of blended learning instruction, students are more successful than those with traditional method alone.

This relates the present study because it shows that with the use of blended learning instruction, students' learning would progress and there will have a better retention and satisfaction on the part of the learners compared to traditional learning approach.

Aside from that, the study of Rambal (2018) in the Philippines, entitled "Blended learning: unveiling its potential in one ASEAN classroom setting" shows that there is a significant increase in the students' performance using blended instruction compared to traditional instruction. The study also claimed that blended instruction is already being practiced among graduate courses. However, the online tasks must be clearly defined and delivered in a personalized manner in order to provide a clear understanding to students. Moreover, Dogra (2016), states that blended instruction is also a differentiated type of instruction that creates learning process to have a more innovative learning environment towards the learners as well as to empower also the learners to have a successful learning towards innovation. These previous studies have a relation to the present study in a sense that it served as a proof that with the use of blended learning instruction would really help provide a better learning for the students towards innovation.

Furthermore, according to Khader (2016), students' achievement is improved with the use of blended learning approach. This is due to the fact that blended learning can make the students' boredom disappear instead they find it more interesting and fun to engage in it - like they never have experienced it before. Like for instance, the use of videos as part of the blended learning instructions totally increases students' participation and help improve deeper learning.

The attention level of the students is also maintained to the highest level which usually help students become motivated to learn discussion

(Ljubojevic et al., 2014). In relation to the present study, blended instruction would be a great tool for enhancing the quality of instruction in physical education because it has been stated that blended instruction would make the learning of the students more interesting and fun to engage with and so the participation of the student will increase and so with their learning.

In Negros Occidental, Philippines, Rabacal (2018), also stated that using the blended learning instruction significantly increases the performance of the students compared to what is commonly used instructions which is the traditional method of teaching. In relation to the study, blended learning instruction helps improve the quality of instruction but not to replace the original setting of the teaching and learning process. However, though this teaching approach is proved to be improving the learning of the students still there are some educational context that cannot be implemented due to some major reasons but still blended learning is still believed to be enhancing the quality of instructions of the teachers.

The literature and studies cited in the present study have supplied rich ideas and insights to the researcher which have served as bases in the conceptualization of the study.

Chapter 3

METHODOLOGY

This chapter presented the research design, instrumentation, validation of instrument, sampling procedure, data gathering procedure and statistical treatment of data.

Research Design

This study employed quantitative approach with the use of comparative research design. The independent variables of the study were flipped classroom design and the flex blended learning design while the dependent variables will be the result of the students' performance in terms of their written and practicum test scores. This research design was used for gathering data and statistical findings in order to evaluate the effectiveness of flipped classroom design and the flex blended learning design for swimming education.

Instrumentation

The main instruments used to gather the needed data for this study are the following.

Rubrics. This instrument is part of the module which was used to evaluate the practicum performance of the participants in swimming education. Part 1 of the rubric is all about basic skills in swimming such as the breathing technique, gliding, floating, submerging and back sculling. While the Part 2

involves the four swimming strokes. It specifically evaluates the body positions, arm position, kick position and the breathing position of the strokes namely freestyle, breast, butterfly and back stroke.

Module. There are two developed modules based on the two developed blended learning designs for swimming; the Flipped Classroom and Flex Blended Learning. This instrument was used as a technology integrated learning material upon the conduct of the study. The modules consist more on activities for students, rubrics and assessments for both written and practicum.

Questionnaire. The questionnaire is about the engagement of the students with flipped classroom design and flex blended learning for swimming. The questionnaire is about the characteristics of the learning environment of the participants. The internet connectivity and access to online services includes 15 questions and 5-Likert scale. The technology literacy of the students, it uses 7-Likert scale. And the students' engagement to the reading materials /videos and engagement of the students to the developed blended learning designs for swimming, also uses 7-Likert scale.

Validation of Instrument

The researcher validated the instruments using the face validation, content validation and concurrent validation. In the face validation, the researcher consulted three experts for the validation of the construction of the question statements. While in the content validity, the researcher also consulted three experts based on the field of physical education in order to evaluate the content

of the questions so that it may help gather an accurate data for the study. Lastly, the concurrent validity was also used in the study in order to test the questionnaires twice.

Table 1

Measures of Survey Questionnaire Reliability used Cronbach's Alpha in Evaluating Flipped and Flex Instructional Designs

Survey Questionnaire	Design		
	Flipped	Flex	Average
Internet Connectivity and Access to Online Services	0.7549	0.7458	0.75035
Technology Literacy	0.9250	0.8265	0.87575
Engagement to Reading Material and Videos	0.9471	0.6924	0.81975
Engagement to Instructional Design	0.9521	0.9002	0.92615
Average			**0.8430**

The survey conducted has an average Cronbach's alpha of 0.8430. This means that the survey instrument used was highly reliable. Acceptable Cronbach's alpha should be greater than 0.70.

Sampling Procedure

In drawing the participants of the study, a purposive sampling was used to determine the desired number of participants for swimming education, since practicum sessions were successive during the conduct of the study and it cannot

cater large number of participants. The sampling procedure only comprised of 60 first year college student participants coming from the three programs in Mercedes Campus namely the Bachelor of Technical Vocational -Teacher Education (BTVTED with majors: Fish Capture, Aquaculture & Fish Processing), Bachelor of Science in Fisheries (BSFi) and Bachelor of Science in Marine Biology (BSMarBio). Each program contributed 10 student-participants for each developed instructional design for swimming. It came up 30 participants for Flipped Classroom and 30 participants also for Flex Blended instructional design.

Data Gathering Procedure

The researcher asked first a permission from the Campus Director with the use of a letter and a verbal consent in order to conduct a study. Upon the approval of the Campus Director, the researcher went to the identified freshmen participant- students. A letter and a verbal consent was obtained from the freshmen-student participants before the conduct of the study. As for the ethical considerations of the procedure of this study, the participants were informed first with the purpose of the study, the tasks needed to be done and data gathered from regarding with the study about blended instruction design for swimming. The participants have the right to accept or refuse to participate in the study and that there will be no negative feedbacks for refusing to participate.

The study consisted of 60 freshmen-student participants: 30 for Flipped Classroom and 30 for Flex Blended Learning Design. The study used modules as

guide for topics which was incorporated with the developed blended instruction design for swimming.

The time duration of the study was based on the modules which was held within four weeks. The students were met for 2-3 hours with the instructor and it will be every thrice a week. For Flipped Classroom, students engaged in an online classroom and traditional classroom and for flex blended students engaged in an online-based learning both in and out-class setting. After four weeks, the results were analyzed and interpreted. The score results and other data gathered from the participants was kept by the researcher in confidentiality.

Statistical Treatment of Data

The data gathered from the participants was carefully analyzed quantitatively using the descriptive and inferential statistical tools. The descriptive statistical tools were used are the frequency count, mean and standard deviation.

While in the inferential statistical tools are the Paired T-test for Independent samples and t-test for dependent samples, Paired t-test and Chi-square test. These statistical tools were used in order to gather an accurate data from the student-participants regarding with the result of their performance using the two developed blended instruction designs for swimming. The statistical tools are the following:

Frequency count. This statistical tool was used to determine the number of participants in accordance to their demographic profile.

Mean. This statistical tool was used to find out the quantitative results in the participants' written and practicum test scores using the two developed blended instruction designs for swimming.

Standard deviation. This statistical tool was used to utilize in illustrating the range to which the data gathered from the score results vary among participants using the two developed blended instruction designs for swimming.

t-test for independent samples. This statistical tool was used to determine the difference between the two independent variables (Flipped classroom Design and Flex Blended Learning Designs).

t-test for dependent samples. This statistical tool was used to determine the difference between the results of written and practicum scores between Flipped Classroom Design and Flex Blended Learning Designs.

Paired t-test. This statistical tool was used to determine the difference between the performance of the participants using the Flipped Classroom Design and Flex Blended Learning Designs.

Chi-square test. This statistical tool was used to determine the factors that have a significant effect to the performance tests will be conducted at 95.00 percent confidence level.

Ethical Considerations

In this study, the researcher asked first a permission from the Campus Director with the use of a letter and a verbal consent before the conduct a study. After which, a letter and a verbal consent was obtained from the identified participants. The participants were informed with the purpose of the study by discussing why the conduct of the study should be undertaken. Further, the researcher discussed the benefits that would be obtained by the participants while joining in the study. Wherein, through this study, the participants' swimming skill would be improved and that it would help them develop a definite survival skill on water not only for sport purposes but also for emergency use in the future. The researcher also discussed the tasks needed to be done which of course would not harm the participants, also the researcher secured the data gathered with full of confidentiality.

With this study, the participants had the right to accept or to refuse to participate and that there would be no negative feedbacks for refusing to participate. There was also no negative treatment that would affect the academics of the participants. A parents' consent was obtained from the parents or guardian so that they would be informed and become totally aware regarding with the participation of their sons/daughters/nephew/niece with the conduct of the study. In addition, the participants did not also cost big in terms of financial aspects that would affect their allowances, instead the researcher will provide them snacks and other possible expenses upon the conduct of the study.

Chapter 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the data gathered, the analysis undertaken as well as the interpretation made.

Characteristics of the Study Group

This section discusses the characteristics of the learning environment of the respondents in terms of ownership of gadgets, internet connectivity and technology literacy, engagement to reading materials and videos, and engagement to instructional designs. Each table shows the result of the data collected from the respondents.

Ownership of Gadgets. Table 2 shows the summary of owned gadgets of respondents in flipped classroom design and flex blended instructional design. Majority of the respondents owned android phones wherein 49 of them are from flipped classroom instructional design and 32 from flex blended instructional design. Second on list of owned gadgets of the respondents were headsets with 44 of them are from flipped classroom design and 28 from flex blended instructions design. Third gadget on the table are speakers in which there are 41 from flipped classroom design and 30 are from flex blended instructional design. Fourth list of owned gadgets were keypad cellphones in which 28 of them are form flipped

Table 2

Summary of Owned Gadgets of the Respondents

Gadget	Flipped	Flex	Total
Android Phone	49	32	81
Headset	44	28	72
Speaker	41	30	71
Keypad Cellphone	28	22	50
Camera	9	11	20
Laptop	8	8	16
Tablet	5	6	11
Netbook	4	4	8
Desktop Computer	4	3	7
Ipod	1	0	1

classroom design and 22 from flex blended instructional design. The fifth owned

gadget by the respondents were the cameras wherein nine of them were from

flipped classroom and 11 from flex blended instructional design. The sixth

among the list of gadgets on the table was laptop in which both instructional

design has eight respondents who owned laptop. The seventh gadget owned by

the respondents was tablet which is five from flipped classroom design and 6

from the flex blended instructional design. Ranked eight among the list of owned

gadgets was netbook in which both instructional designs have the same number

of respondents who owned a netbook, eight from flipped and eight from flex as

well. The ninth ranked owned gadget by the respondents was desktop computer

which is four from flipped design and three from flex blended design. And the

last among the list of owned gadgets was the iPod which has only one

respondent from the flipped design owned this gadget while none of the

respondents from the flex blended design owned this gadget, it means that iPod is least owned by the respondents.

This implies that personal access to online services and learning should be crafted with the limitation of students on available devices in mind. Learning that requires the heavy use of laptops and desktop computers are severely restricted with the students more often accessing online services through internet cafes which can entail financial burden for students. Though it is a big challenge, the use of digital technology like mobile devices still served as an aid for learning and instruction. Also, the digital devices help the learners review and assess their own performance (Edington, 2018).

Internet Connectivity and Access to Online Services. As shown in Figure 4, the respondents mostly answered "SOMETIMES" to statement 1 *"I prefer using Wifi than mobile data to access social media"*, statement 2 *"I can have an access educational websites"*, statement 3 *"I spend an hour or more a day on social media"*, statement 4 *"I read informative articles online"* , statement 5 *"I spend an hour or more a day on educational websites"*, statement 7 *"I watch online videos for educational or entertainment purposes"* statement 8 *"I spend an hour or more a day watching online videos"*, statement 9 *"I visit internet cafes just to have an access to internet"*, statement 12 *"I can have an access to online-based lectures at home or school"*, statement *13 "I can obtain information or news online"* and statement 14. While in the statement 6, 10 and 15, respondents mostly answered "ALWAYS".

However, in the statement *11 "I can have access to internet at school"* most answers

of the respondents are "NEVER.
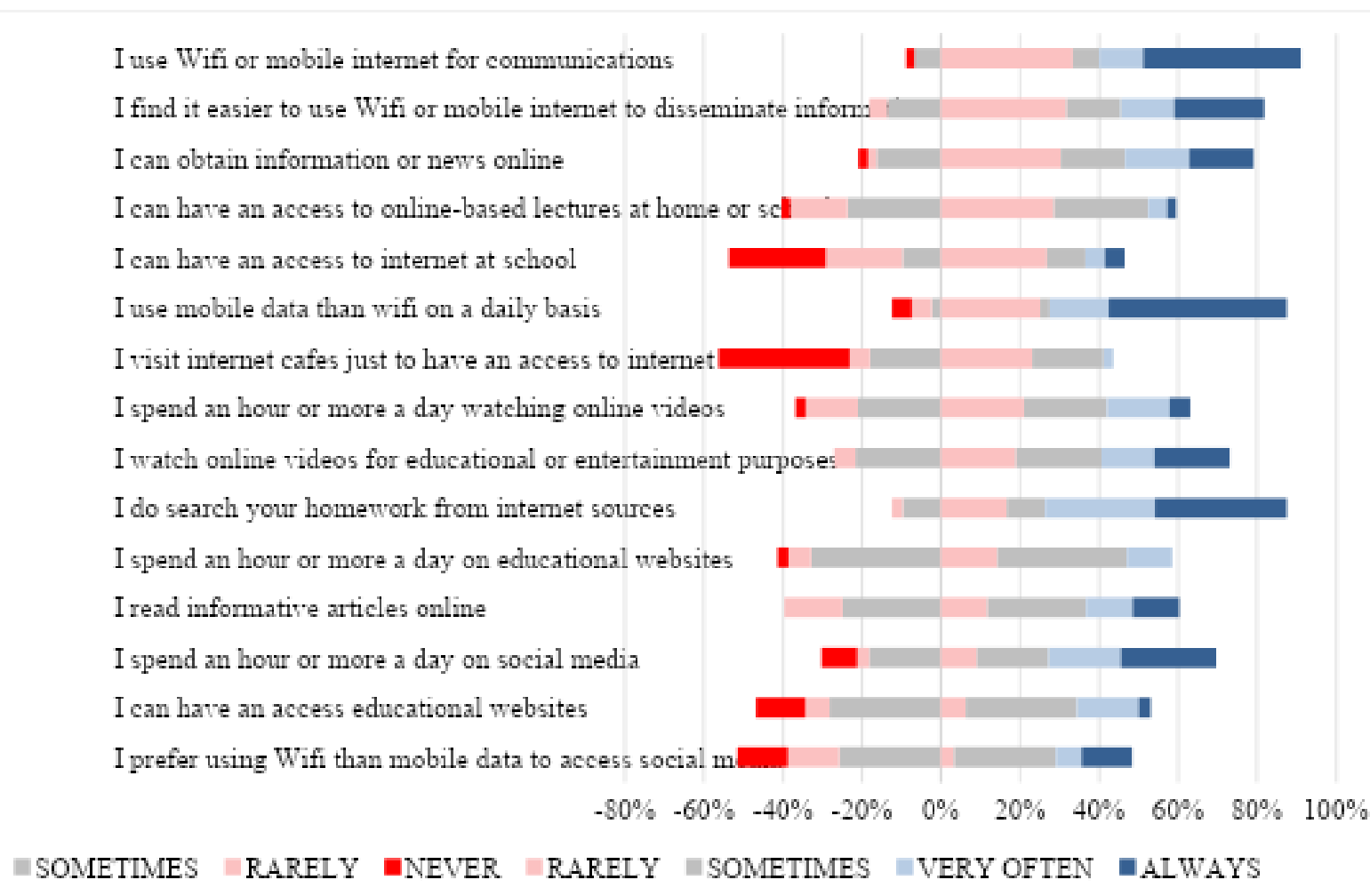
Figure 4. Internet Connectivity and Access to Online Services of Respondents Subjected to Flipped Classroom Instructional
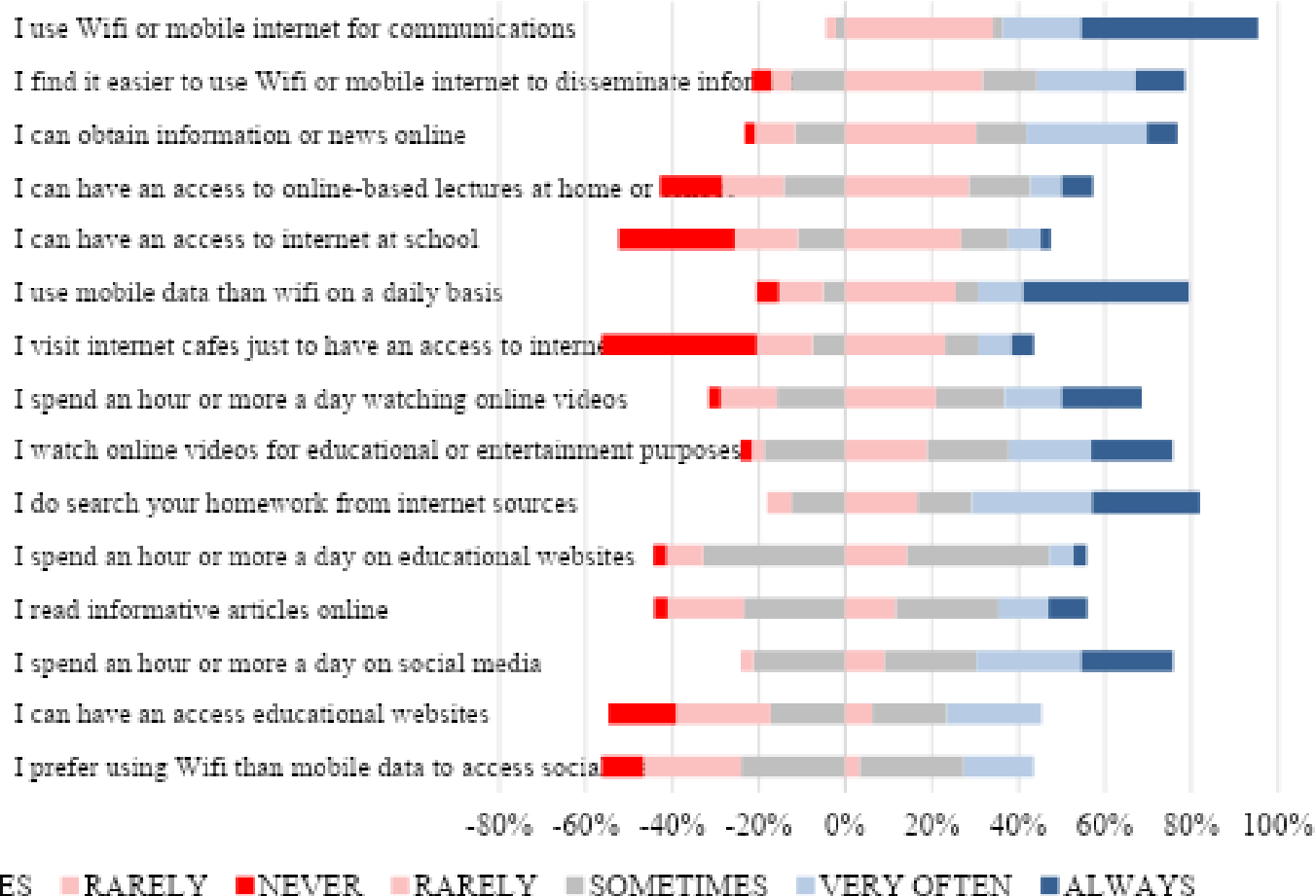
**Figure 5. Internet Connectivity and Access to Online Services of Respondents
Subjected to Flex Blended Learning Instructional Design**

In Figure 5, the respondents mostly answered "SOMETIMES" to statement 1 *"I prefer using Wifi than mobile data to access social media"*, statement 2 *"I can have an access educational websites"*, statement 3 *"I spend an hour or more a day on social media"*, statement 4 *"I read informative articles online"* , statement 5 *"I spend an hour or more a day on educational websites"*, statement 7 *"I watch online videos for educational or entertainment purposes"* statement 8 *"I spend an hour or more a day watching online videos"*, statement 12 *"I can have an access to online-based lectures at home or school"*, and statement 14 *"I find it easier to use Wifi or mobile internet to disseminate information"*. While in the statement 6 and 13, respondents mostly answered "VERY OFTEN". However, in the statement 10 *"I use mobile data than Wifi on a daily basis"* and statement 15 *"I use Wifi or mobile internet for communications"* respondents mostly answered "ALWAYS" but in the statements 9 and 11 most answers of the respondents are "NEVER".

Overall, internet connectivity and access to online services have similar overall means in both flipped classroom and flex blended instructional designs. Some noteworthy observations are that students have an inclination on the use of Wi-Fi or mobile internet for communication. Also, access to the internet is mostly catered using mobile data rather than with Wi-Fi. With the proliferation of education-related content on the internet, students are more disposed to use online services. Such that it becomes an important resource for homework, educational articles, and researches. The use of online resources to enhance

learning, however, can be hindered by the lack of internet connectivity in the school.

Table 3

Summary Statistics of Internet Connectivity and Access to Online Services of Respondents Subjected to Flipped Instructional Design

Question	Total Count	Mean	StDev	Interpretation
1	30	2.933	1.143	Basic
2	30	2.900	0.960	Basic
3	30	3.500	1.225	Moderate
4	30	3.233	0.898	Moderate
5	30	3.000	0.587	Moderate
6	30	4.100	0.885	High
7	30	3.567	0.935	Moderate
8	30	3.100	0.885	Moderate
9	30	2.100	1.029	Basic
10	30	4.200	1.243	High
11	30	2.267	1.202	Basic
12	30	2.867	0.730	Basic
13	30	3.600	1.003	Moderate
14	30	3.800	0.997	Moderate
15	30	4.300	1.022	High
AVERAGE	**30**	**3.2978**	**0.9829**	**Moderate**

Table 3 presents the results of internet connectivity and access to online services of the respondents in flipped classroom instructional design. It shows that the mean of the statements 3, 4, 5, 7, 8, 13 and 14 are within 3.00 to 3.99 and the standard deviation of these statements ranges from 0.587 to 1.225 which is interpreted as Moderate internet connectivity of respondents subjected to flipped blended learning. However, the mean of the statements 1, 2, 9, 11 and 12 are

within 2.00 to 2.99 and the standard deviation of these statements resulted from

0.587 to 1.143 with a total score of 3 which is interpreted as "Basic". The

statement 9 and 11 has a mean result of 2.00 to 2.99 and the standard deviation of

these statements resulted from 1.029 to 1.202 with a total score of 2 which is

interpreted as "Basic".

Overall mean result is 3.2978 with a standard deviation of 0.9829 with a

total score of 3 as interpreted as "Moderate internet connectivity and access

online" which means that the respondents in flipped classroom design have

access to internet and online services but with certain limitations.

Table 4

**Summary Statistics of Internet Connectivity and Access to Online Services
of Respondents Subjected to Flex Blended Learning
Instructional Design**

Question	Total Count	Mean	StDev	Interpretation
1	30	2.733	0.868	Basic
2	30	2.667	1.028	Basic
3	30	3.700	0.877	Moderate
4	30	3.067	0.944	Moderate
5	30	2.967	0.669	Basic
6	30	3.867	0.937	Moderate
7	30	3.600	1.003	Moderate
8	30	3.400	1.133	Moderate
9	30	2.133	1.306	Basic
10	30	4.000	1.462	High
11	30	2.233	1.165	Basic
12	30	2.700	1.208	Basic
13	30	3.400	0.968	Moderate
14	30	3.467	1.074	Moderate
15	30	4.567	0.898	High
Average	**30**	**3.233**	**1.036**	**Moderate**

Table 4 shows the summary result of internet connectivity and access to online services of the respondents in flex blended learning instructional design (FLPCON). The mean result of the statement number 15 is 4.567 while the standard deviation is 0.898 with a total score of 5 interpreted as "High". The statements number 3, 4, 6, 7, 8, 13 and 14 are within 3.00 to 3.99 and the standard deviation of these statements ranges from 0.877 to 1.133 with a total score of 4 which is interpreted as "Moderate". However, the mean result of the statements number 1, 2, 5, 9, 11 and 12 are within 2.00 to 2.99 and the standard deviation of these statements resulted from 0.669 to 1.462 with a total score of 3 which is interpreted as "Basic". The statement 9 and 11 has a mean result of 2.00 to 2.99 and the standard deviation of these statements resulted from 1.165 to 1.306 with a total score of 2 which is interpreted as "Basic".

Overall mean result is 3.233 with a standard deviation of 1. 036 with a total score of 3 as interpreted as "Moderate connectivity and access online" which means that the respondents in flex blended learning instructional design have the same result in terms of access to internet connectivity and online services. However, there are some poor educational contexts which have not embraced the use of blended instruction due to some reason regarding with the use of gadgets and internet connectivity (San Buenaventura, 2017).

Technology Literacy. As shown in Figure 6, the respondents mostly answered "AGREE" to statement 7, 8, 10, 11, 12 and statement 15. This means that in terms of technology literacy, the respondents were knowledgeable enough

about searching online resources, communications, copyright laws, citations and
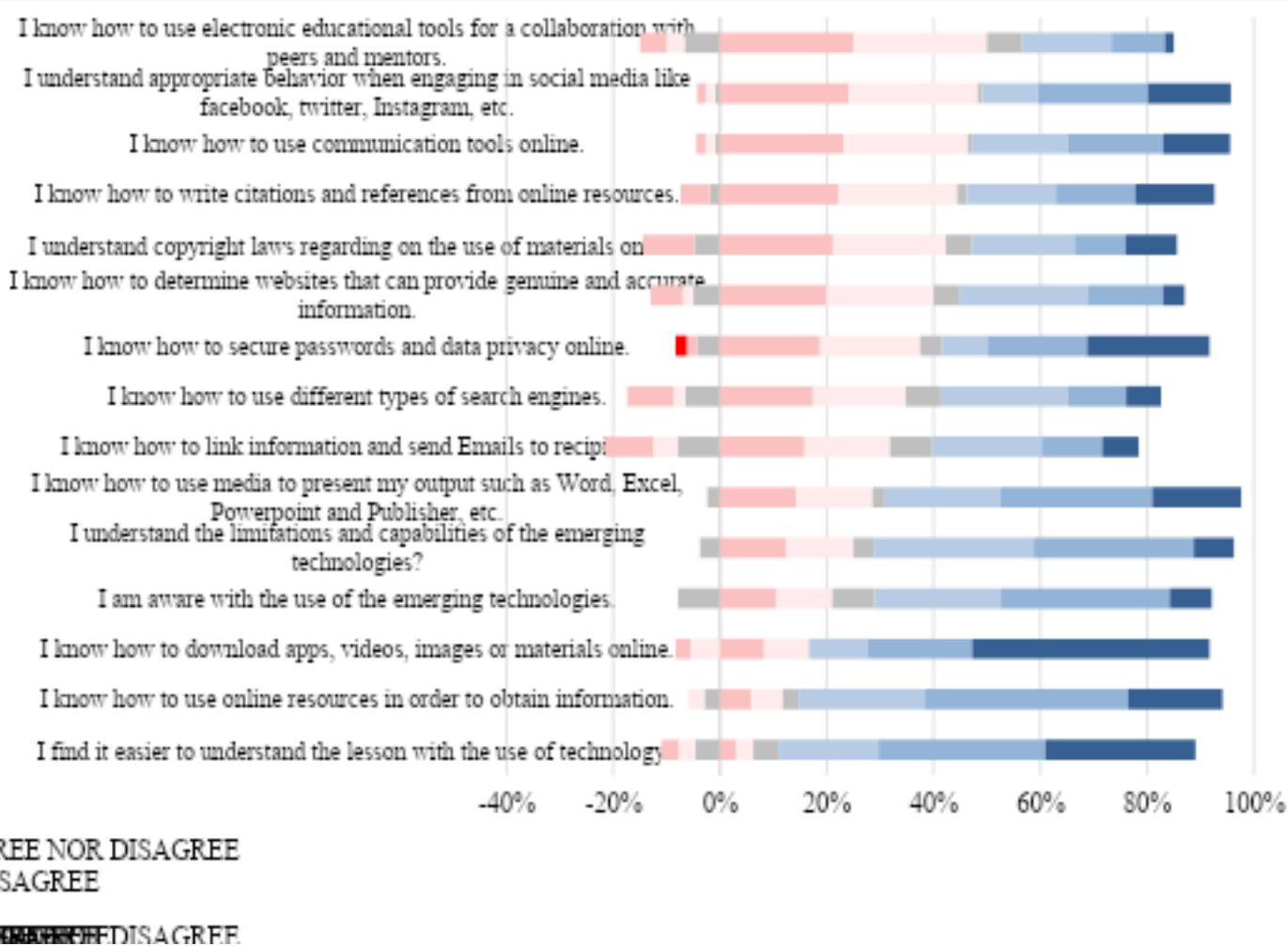
Figure 6. Technology Literacy of the Respondents Subjected to Flipped Classroom Instructional Design

other educational tools online._   The statements 1, 2, 4, 6, and 14, majority of the respondents "SLIGHTLY AGREE" with the statements 1 *"I find it easier to understand the lesson with the use of technology"*, statement 2 *"I know how to use online resources in order to obtain information."*, statement 4 *"I am aware with the use of the emerging technologies"*, statement 6 *"I know how to use media to present my output such as Word, Excel, Powerpoint and Publisher, etc."* and statement 14 *"I understand appropriate behavior when engaging in social media like facebook, twitter, Instagram, etc."*. This means that technology is much useful in terms of learning and better understanding.

However, among all of the statements only statement 3 and 9 had the most answered as "STRONGLY AGREE" in which statement 3 *"I know how to download apps, videos, images or materials online"* and statement 9 *"I know how to secure passwords and data privacy online."*

Overall means that the respondents in Flipped Classroom instructional design are much knowledgeable in terms of downloading applications, games and images from electronic sources and securing accounts and data privacy online. The implication of this result considered the importance of technology literacy towards innovative teaching-learning in blended learning formats that usually enhances student motivation in order for them to learn more effectively (Bravo, Amante, Simo, Enache & Fernandez, 2011). Through using technology, the students became more motivated and engaged through learning by doing which contributes to a meaningful learning (Baytak, Tarman, & Ayas,2011).

As shown in Figure 7, the respondents mostly answered "AGREE" to statement 1, 4, 5, 6, 7, 8, 10 and 12. This means that the respondents able to comprehend the use of technology in the teaching and learning process, the advantages and disadvantages of technology utilization, the use of word applications, the use of different search engines, linking information and sending emails. Also, they know how to identify facts and accurate information online as well as the proper way of citation of references online.

In the statement 2, 3, 13 and 14, most of the respondents in the flex blended instructional design mostly answered "SLIGHTLY AGREE". This means that the respondents are knowledgeable in terms of obtaining information, downloading applications, images, videos and other online material resources, having an appropriate behavior when using social media and the use of the varied communication tools online.

However, in the statement 9 and 11 had mostly answered by the respondents as "STRONGLY AGREE" in which statement 9 *I know how to secure passwords and data privacy online", and* statement 11 *"I understand copyright laws regarding on the use of materials online"*. Generally, in terms of technology literacy, the respondents in flex blended instructional design are much knowledgeable about securing accounts, data privacy online and copyright laws as well as the use of online materials.
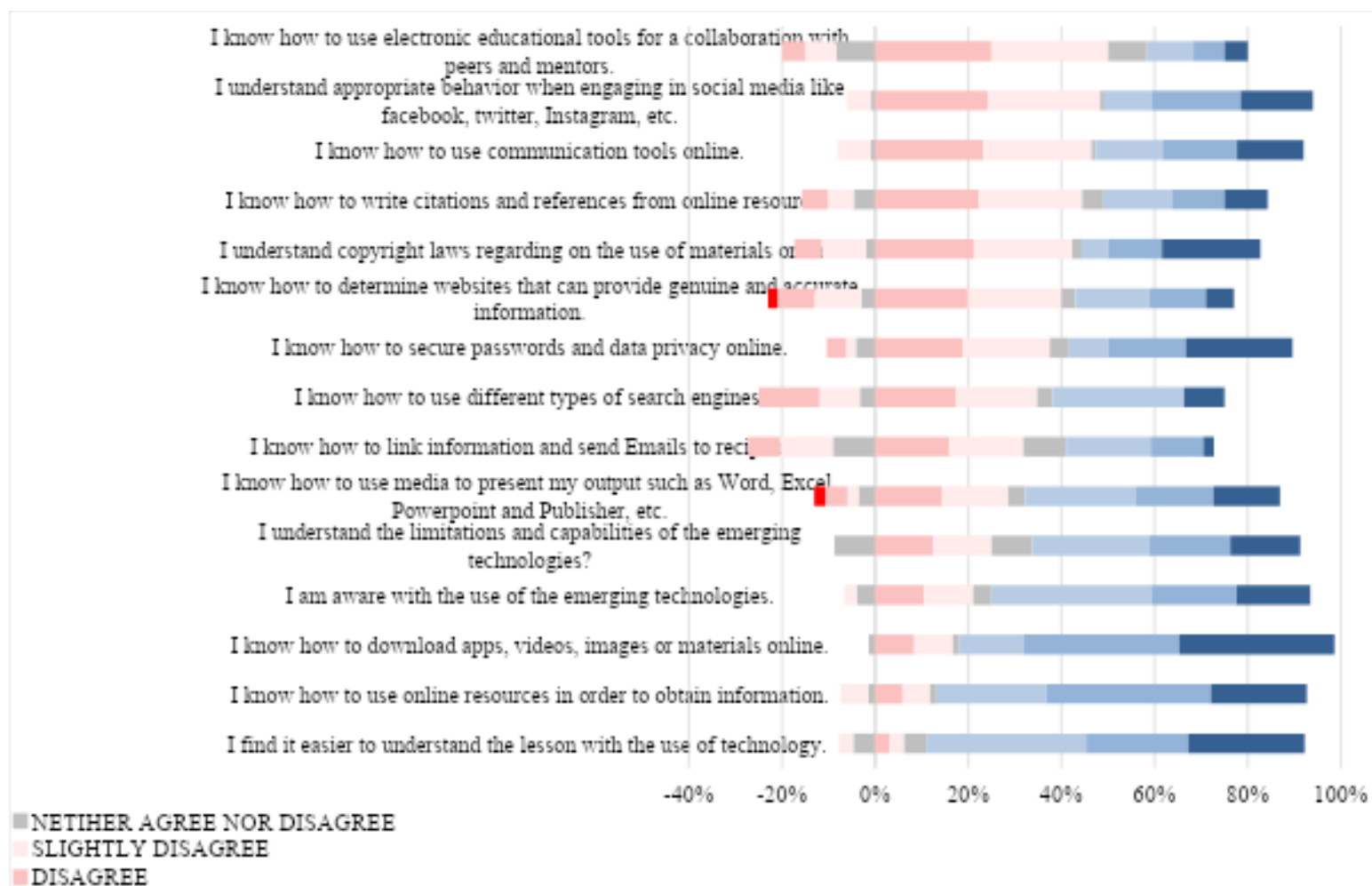
Figure 7. Technology Literacy of the Respondents Subjected to Flex Blended Learning Instructional Design

Table 5 shows the summary result of technology literacy of the respondents in flipped classroom instructional design. There were 15 statements with seven scales as responses. The mean was interpreted according to the legend: 5.50-7.00 (High), 4.00-5.49 (Moderate), 2.50-3.99 (Basic), 1.00-2.49 (Poor). The mean result of the statements number 1, 2, 3, 5, 6, 9, 13 and 14

Table 5

Summary Statistics of Technology Literacy of Respondents Subjected to Flipped Instructional Design

Question	Total Count	Mean	StDev	Interpretation
1	30	5.667	1.295	High
2	30	5.700	0.988	High
3	30	6.067	1.363	High
4	30	5.400	0.932	Moderate
5	30	5.500	0.820	High
6	30	5.800	0.887	High
7	30	4.600	1.476	Moderate
8	30	4.700	1.442	Moderate
9	30	5.667	1.539	High
10	30	4.833	1.315	Moderate
11	30	4.833	1.599	Moderate
12	30	5.433	1.478	Moderate
13	30	5.600	1.192	High
14	30	5.800	1.215	High
15	30	4.567	1.278	Moderate
AVERAGE	**30**	**5.3445**	**1.2546**	**Moderate**

are within 5.50 to 7.00 and the standard deviation of these statements resulted from 0.820 to 1.539 with a total score of 6 which was interpreted as "High".

However, the mean result of the statements number 4, 7, 8, 10, 11, 12 and 15 are within 4.00 to 5.49 and the standard deviation of these statements resulted from 0.932 to 1.599 with a total score of 5 which was interpreted as "Moderate".

Overall mean result is 5.3445 with a standard deviation of 1.2546 with a total score of 5 which was interpreted as "Moderate". This means that the respondents are much technologically literate in terms of using communication tools and online resources, downloading applications, images, videos and other materials and deciding accounts and data privacy as well as displaying appropriate behavior when using technology as they know the limitations of technology utilization. This helps better communication between teachers and students in order for them to come up clear understanding on what the students should do with all the tasks given to them. (Daum & Buschner, 2016).

In addition to this, having literacy towards technology maximizes the leaning materials online such as However, in a classroom setting, videos and online interactions are considered as innovative teaching tool in blended learning formats that usually enhances student motivation in order for them to learn more effectively (Bravo, Amante, Simo, Enache & Fernandez, 2011).

Table 6 shows the summary result of technology literacy of the respondents in flex blended learning instructional design (FLX). There were also 15 statements with 7 scales as responses. The mean was interpreted according to the legend: 5.50-7.00 (High), 4.00-5.49 (Moderate), 2.50-3.99 (Basic), 1.00-2.49 (Poor).

Table 6

Summary Statistics of Technology Literacy of Respondents Subjected to Flex Blended Learning Instructional Design

Question	Total Count	Mean	StDev	Interpretation
1	30	5.600	1.102	High
2	30	5.700	1.088	High
3	30	6.167	0.834	High
4	30	5.467	1.042	Moderate
5	30	5.400	1.070	Moderate
6	30	5.133	1.570	Moderate
7	30	4.333	1.322	Moderate
8	30	4.300	1.601	Moderate
9	30	5.600	1.522	High
10	30	4.433	1.695	Moderate
11	30	5.233	1.832	Moderate
12	30	4.867	1.548	Moderate
13	30	5.533	1.306	High
14	30	5.733	1.230	High
15	30	4.433	1.431	Moderate
AVERAGE	**30**	**5.1955**	**1.3462**	**Moderate**

The mean result of the statements number 1, 2, 3, 9, 13 and 14 are within 5.50 to 7.00 and the standard deviation of these statements resulted from 0.834 to 1.522 with a total score of 6 which was interpreted as "High". However, the mean result of the statements number 4, 5, 6, 11, and 12 are within 4.00 to 5.49 and the standard deviation of these statements resulted from 1.042 to 1.832 with a total score of 5 which was interpreted as "Moderate".

However, the mean result of the statements 7, 8, 10 and 15 is 4.00 to 5.49 with a standard deviation of 1.322 to 1.695 with a score of 4 which was interpreted as "Moderate". Overall mean result is 5.1955 with a standard deviation of   1.3462 with a total score of 5 which was interpreted as "Moderate". This means that the respondents are also much technologically literate in terms of using communication tools and online resources, downloading applications, images, videos and other materials and deciding accounts and data privacy as well as displaying appropriate behavior when using technology as they know the limitations of technology utilization.

Moreover, the statements that were answered as "neither agree nor disagree" were shown that the respondents have lack of knowledge on how to link information, how to use different search engines, how to determine websites that can provide accurate data information and the use of educational tools as a means of collaboration with peers and mentors.

The overall mean for respondents under flipped and flexed design have minute difference. However, unlike the neutral overall response in internet connectivity, the literacy score of the student are leaning towards the more positive spectrum. This is true for all aspects or questions in which technology literacy was evaluated.

Engagement to Reading Materials and Video Tutorials. Table 7 shows the summary result of the engagement of the respondents to reading materials and videos in flipped classroom instructional design. There were 10 statements

with seven scales as responses. The mean was interpreted according to the legend: 5.50-7.00 (High), 4.00-5.49 (Moderate), 2.50-3.99 (Basic), 1.00-2.49 (Poor).

Table 7

Summary Statistics of Respondents' Engagement to Reading Materials and Videos in Flipped Instructional Design

Question	Total Count	Mean	StDev	Interpretation
1	30	6.333	0.606	High
2	30	5.567	0.971	High
3	30	5.800	0.847	High
4	30	6.333	0.994	High
5	30	6.133	1.613	High
6	30	5.867	1.008	High
7	30	5.600	1.070	High
8	30	4.933	1.574	Moderate
9	30	5.467	1.252	Moderate
10	30	5.067	1.639	Moderate
AVERAGE	**30**	**5.710**	**1.1574**	**High**

The mean result of the statements number 1, 2, 4, 5, 6 and 7 are within 5.50 to 7.00 and the standard deviation of these statements resulted from 0.606 to 1.613 with a total score of 6 which was interpreted as "High".

However, in the statements number 8, 9 and 10 the mean result is within 4.00 to 5.49 and the standard deviation of these statements resulted from 1.252 to 1.639 with a total score of 5 which was interpreted as "Moderate".

Overall mean result is 5.710 with a standard deviation of 1.1574 with a total score of 6 which was interpreted as "High". This means that the respondents' engagement towards video tutorials and reading materials

contribute a positive and better learning to them. It helps them to comprehend easily the lesson as well as obtaining information and learning skill with video utilization in the lessons.

The result means that respondents can easily obtain information with the use of online materials, it helps them understand the lesson better, it expands their knowledge. It also means that with the use of relevant videos for the lesson help them enhance their skills. Also, the respondents could hardly learn a skill without the use of videos because it serves as their guide to enhance their skills.

The use of videos as part of the blended learning instructions totally increases students' participation and help improve deeper learning. The attention level of the students is also maintained to the highest level which usually help students become motivated to learn discussion (Ljubojevic, Srecko, Stankovic, & Vaskovic, 2014).

Table 8 shows the summary result of the engagement of the respondents to reading materials and videos in flex blended learning instructional design. There were also 10 statements with seven scales as responses. The mean was interpreted according to the legend: 5.50-7.00 (High), 4.00-5.49 (Moderate), 2.50-3.99 (Basic), 1.00-2.49 (Poor).

The mean result of the statements number 1, 2, 4, 5, 6 and 7 are within 5.50 to 7.00 and the standard deviation of these statements resulted from 1.112 to 1.634 with a total score of 6 which was interpreted as "High". This also means that respondents in flex instructional can also easily obtain

information with the use of online materials, it helps them understand the lesson better, it expands their knowledge. It also means that with the use of relevant videos for the lesson help them enhance their skills.

Table 8

Summary Statistics of Respondents' Engagement to Reading Materials in Flex Blended Learning Instructional Design

Question	Total Count	Mean	StDev	Interpretation
1	30	5.900	1.125	High
2	30	5.500	1.253	High
3	30	5.733	1.112	High
4	30	6.267	1.363	High
5	30	5.867	1.634	High
6	30	5.567	1.194	High
7	30	5.500	1.225	High
8	30	4.800	1.448	Moderate
9	30	5.433	1.455	Moderate
10	30	5.333	1.348	Moderate
AVERAGE	**30**	**5.590**	**1.3157**	**High**

However, in the statements number 8, 9 and 10 the mean result is within 4.00 to 5.49 and the standard deviation of these statements resulted from 1.348 to 1.455 with a total score of 5 which was interpreted as "Moderate". This means that the respondents in flex design have also the same characteristic in which they could also hardly learn a skill without the use of videos because it serves as their guide to enhance their skills.

Overall mean result for flex design is 5.590 with a standard deviation of 1.3157 with a total score of 6 which was interpreted as "High". However, the overall mean of engagement in both designs have also small difference. Respondents' evaluation indicates that the reading materials developed are positively engaging with a score of 6 out of 7.

Notable observations from the survey are that online learning materials are perceived to be highly helpful in practicum and in enhancing psychomotor skills. Because of easier access and the current role of gadgets in the daily lives of students, it is more convenient for them to read and learn through complementing lessons with online reading materials and instructional videos.

Engagement to the Instructional Designs (Flipped and Flex). Table 9 shows the summary result of the engagement of the respondents to flipped classroom instructional design. There were 16 statements with seven scales as responses such as (Strongly Agree), 6 (Slightly Agree), 5 (Agree), 4 (Neither Agree nor Disagree), 3 (Disagree), 2 (Slightly Disagree) and 1 (Strongly Disagree).

The mean result of the statements number 2, 6, 7, 8, 9 and 10 are within 5.50 to 7.00 and the standard deviation of these statements resulted from 0.740 to 1.94 with a total score of 6 which was interpreted as "HIGH" which means high engagement towards experiential learning, online and face to face setting and technology integration to the lessons, this was based on the statements answered by the respondents.

Table 9

**Summary Statistics of Students' Engagement to
Flipped Classroom Instructional Design**

Questions	Total Count	Mean	StDev	Score	Interpretation
1	30	5.067	1.413	5	Moderate
2	30	5.567	1.194	6	High
3	30	4.867	1.613	5	Moderate
4	30	5.133	1.224	5	Moderate
5	30	4.667	1.348	5	Moderate
6	30	5.567	0.971	6	High
7	30	5.667	1.061	6	High
8	30	5.733	0.74	6	High
9	30	5.6	0.968	6	High
10	30	5.567	1.135	6	High
11	30	5.367	0.999	5	Moderate
12	30	5.467	1.008	5	Moderate
13	30	5.233	1.223	5	Moderate
14	30	4.8	1.243	5	Moderate
15	30	4.833	1.51	5	Moderate
16	30	5.3	1.179	5	Moderate
Average	**30**	**5.2772**	**1.1768**	**5**	**Moderate**

However, in the statements number 1, 3, 4, 5, 11, 12, 13, 14, 15 and 16 the mean result is within 4.00 to 5.49 and the standard deviation of these statements resulted from 0.999 to 1.613 with a total score of 5 which was interpreted as "MODERATE".

Overall mean result is 5.2772 with a standard deviation of 1.1768 and a total score of 5 which was interpreted as "MODERATE". This means that the respondents have a moderate engagement specifically on online based lectures, blog or vlog creation, online reading materials, online feedbacks from mentor and peers and approaches of the flipped classroom instructional design for swimming topics.

Table 10 presented the summary result of the engagement of the respondents to flex blended instructional design. There were also 16 statements with seven scales as responses: (Strongly Agree), 6 (Slightly Agree), 5 (Agree), 4 (Neither Agree nor Disagree), 3 (Disagree), 2 (Slightly Disagree) and 1 (Strongly Disagree).

The mean result of the statements number 1, 6, 10 and 11 are within 5.50 to 7.00 and the standard deviation of these statements resulted from 1.106 to 1.388 with a total score of 6 which was interpreted as "HIGH" which means high engagement towards technology integration to swimming lessons, online resources and implementation of flex blended for swimming as an effective instructional approach.

Table 10

**Summary Statistics of Students' Engagement to
Flex Blended Instructional Design**

Questions	Total Count	Mean	StDev	Score	Interpretation
1	30	4.733	1.388	5	Moderate
2	30	4.267	1.437	4	Moderate
3	30	3.333	1.936	3	Basic
4	30	4.767	1.675	5	Moderate
5	30	4.733	1.461	5	Moderate
6	30	5.533	1.106	6	High
7	30	5.367	1.098	5	Moderate
8	30	5.267	1.202	5	Moderate
9	30	5.433	1.073	5	Moderate
10	30	5.533	1.167	6	High
11	30	5.500	1.196	6	High
12	30	4.400	1.714	4	Moderate
13	30	5.433	1.194	5	Moderate
14	30	4.833	1.464	5	Moderate
15	30	5.200	1.375	5	Moderate
16	30	5.333	1.184	5	Moderate
AVERAGE	**30**	**4.9791**	**1.3544**	**5**	**Moderate**

In the statements number 1, 2, 4, 5, 7, 8, 9, 12, 13, 14, 15 and 16 the mean result is within 4.00 to 5.49 and the standard deviation of these statements resulted from 1.073 to 1.675 with a total score of 5 which was interpreted as "MODERATE".

Overall mean result is 4.9791 with a standard deviation of 1.3544 and a total score of 5 which was interpreted as "MODERATE". This means that the respondents have a moderate engagement specifically on online resources, online based lectures, blog or vlog creation, online reading materials, online feedbacks from

mentor and peers and the effectiveness of the approaches of the flex blended instructional design for swimming.

However, the overall mean of engagement of the student-respondents in both instructional designs have also small difference. It is because in both cases, students on average have similar engagement to both instructional designs. It has been tested if the engagement in one instructional design is higher than the other using paired t-test and resulted 95.00 percent confidence level.

The results implied that both designs developed promotes a positive and active collaboration and engagement towards the instructional approach, learning materials, learner's peers and teachers. However, careful considerations on various e-learning tools should be taken into account by the teacher and the face-to-face interaction should still be there because blended instruction is not solely an online-based learning but a combination of both face-to-face learning and an online self-paced learning (De Jong 2014).

Evaluation of Pre-test and Post-test Scores
   Both Written and Practicum

Table 11 presented the difference of the results between pre-test and post-test for the written evaluation (FLPPREW and FLPPOSTW). It shows the results of the Paired t-test evaluation and decision. The mean result of the estimation for paired difference is 4.3 with a standard deviation of 1.418.

The SE Mean result is 0.259 with a 95.00 percent lower bound for difference which resulted in 3.86. Since P - Value is <0.05 we reject H_o and accept

H$_1$. It means the scores of the written post-tests are significantly higher than the pre-test.

Table 11

**Pre and Post Written Test Results in Flipped
Classroom Instructional Design**

Descriptive Statistics (Sample)	N	Mean	StDev	SE Mean
Flipped classroom (Pre-test Written)	30	10.733	2.116	0.386
Flipped classroom (Post-test Written)	30	15.033	1.829	0.334

Estimation for Paired Difference			
Mean	StDev	SE Mean	95% Lower Bound for μ_difference
4.3	1.418	0.259	3.86

μ_difference: mean of (Post-test Written - Pre-test Written)

Test
Null hypothesis   H$_0$: μ_difference = 0
Alternative hypothesis   H$_1$: μ_difference > 0

T-Value	P-Value
16.61	0

Therefore, the flipped instructional design was effective in improving the written evaluation scores of the students. It is because the characteristics of the flipped classroom model such as students can come to class prepared in advance. It requires the learners to become more responsible with their own exploration, discovery and construction of knowledge. Such scores of the students who used the flipped classroom model were higher than scores of those who used the classical blended learning method (Sirakaya & Ozdemi, 2018).

Table 12 shows the difference of the results between pre-test and post-test in written in flex instructional design (FLXPREW and FLXPOSTW). The evaluation and decision for pre-test and post-test in written was analyzed using

Table 12

**Pre and Post Written Test Results in Flex Blended
Learning Instructional Design**

Descriptive Statistics (Sample)	N	Mean	StDev	SE Mean
Flex Blended (Post-test Written)	30	11.267	1.66	0.303
Flex Blended (Pre-test Written)	30	7.633	1.426	0.26

Estimation for Paired Difference			
Mean	StDev	SE Mean	95% Lower Bound for μ_difference
3.633	1.351	0.247	3.214

μ_difference: mean of ((Post-test Written - Pre-test Written))

Test
Null hypothesis $\qquad\qquad\qquad\qquad$ H₀: μ_difference = 0
Alternative hypothesis $\qquad\qquad\quad$ H₁: μ_difference > 0

T-Value	P-Value
14.73	0

the Paired T-test. The mean result of the estimation for paired difference is 3.633 with a standard deviation of 1.351. The SE Mean result is 0.247 with a 95.00 percent lower bound for difference which resulted in 3.214. Since P-Value is <0.05 we reject H_o and accept H_1. The scores of the written post-tests in flex instructional design are also significantly higher than the pre-test. Therefore, the

flex instructional design was also effective in improving the written evaluation scores of the student-respondents. It is because it also offers a flexible learning environment which enables the learners to access learning materials online anytime and anywhere (Giarla, 2019).

Table 13 presented the difference of the results between pre-test and post-test in practicum evaluation for swimming (FLPPREP and FLPPOSTP). It also

Table 13

**Pre and Post Practicum Test Results in Flipped
Classroom Instructional Design**

Descriptive Statistics (Sample)	N	Mean	StDev	SE Mean
Flipped classroom (Post-Practicum)	30	9.633	1.81	0.33
Flipped classroom (Pre-Practicum)	30	7.133	1.943	0.355

Estimation for Paired Difference			
Mean	StDev	SE Mean	95% Lower Bound for μ_difference
2.5	1.358	0.248	2.079

μ_difference: mean of (FLPPOSTP - FLPPREP)

Test
Null hypothesis $H_0: \mu\_difference = 0$
Alternative hypothesis $H_1: \mu\_difference > 0$

T-Value	P-Value
10.08	0

shows the results using the Paired T-test evaluation and decision. The mean result of the estimation for paired difference for the practicum is 2.5 with a standard deviation of 1.358. The SE Mean result is 0.248 with a 95.00 percent lower bound for difference which resulted in 2.079. Since the P- Value is <0.05 we reject H_o and accept H_1. The scores of the practicum post-tests are significantly higher than the pre-test. Therefore, the flipped instructional design was effective in improving the practicum evaluation scores of the students. It because active participation is a necessary in a flipped classroom which made students to comply not only the written but much more on psychomotor skills (Lucena et al., 2018).

Table 14 shows the difference of the results between pre-test and post-test in practicum in flex instructional design (FLXPREP and FLXPOSTP). The evaluation and decision for pre-test and post-test in practicum was also analyzed using the Paired T-test in order to determine the difference of the practicum scores. The mean result of the estimation for paired difference for practicum is 2.633 with a standard deviation of 1.217. The SE Mean result is 0.222 with a 95% lower bound for difference which resulted in 2.256. Since the P- value is <0.05 we reject H_o and accept H_1. The scores of the practicum post-tests are also significantly higher than the pre-test. It is because flex blended provides a learning environment that promotes collaboration which focuses more on students' progress.

Table 14

**Pre and Post Practicum Test Results in Flex Blended
Learning Instructional Design**

Descriptive Statistics (Sample)	N	Mean	StDev	SE Mean
Flex Blended (Post-Practicum)	30	8.867	1.358	0.248
Flex Blended (Pre-Practicum)	30	6.233	1.924	0.351

Estimation for Paired Difference			
Mean	StDev	SE Mean	95% Lower Bound for μ_difference
2.633	1.217	0.222	2.256

μ_difference: mean of (FLXPOSTP - FLXPREP)

Test
Null hypothesis H_0: μ_difference = 0
Alternative hypothesis H_1: μ_difference > 0

T-Value	P-Value
11.85	0

**<u>Evaluation of the Average Scores for Written
and Practicum Test in Flipped and
Flex Instructional Design</u>**

Table 15 shows the difference of the written average score results between flipped and flex instructional design. The evaluation and decision of the average score results were analyzed using the Two-Test Sample and Chi-square in order to determine whether which among the two design has a higher written score results. The similarities of the two designs before the conduct of the experiment was the assessment on the characteristic of the learning environment of the

students. However, the approach of the developed designs made a difference on the written result of the students.

Table 15

**Average Score Result of Written in Flipped and Flex
Instructional Design**

Method		
μ_1: mean of Flipped Classroom (Post-test Written) μ_2: mean of Flex Blended (Post-test Written) Difference: $\mu_1 - \mu_2$ Equal variances are not assumed for this analysis.		
Test		
Null hypothesis	$H_0: \mu_{Flipped} - \mu_{Flex} = 0$	
Alternative hypothesis	$H_1: \mu_{Flipped} - \mu_{Flex} > 0$	
T-Value	DF	P-Value
8.35	57	0

The T-Value is 8.35 and the degrees of freedom is 57. However, since the P-Value is <0.05, we reject H_o and accept H_1. Therefore, the average written posts-test scores for flipped design is significantly higher than the flex instructional design.

Table 16 shows the difference of the practicum average score results between flipped and flex instructional design. The evaluation and decision of the practicum average score results were analyzed using the Two-Test Sample and Chi-square in order to determine whether which among the two design has a higher practicum score results.

Table 16

**Average Score Result of Practicum in Flipped and Flex
Instructional Design**

Method

μ_1: mean of Flipped Classroom (Post-test Practicum)
μ_2: mean of Flex Classroom (Post-test Practicum)
Difference: μ_1 - μ_2
Equal variances are not assumed for this analysis.

Test Null hypothesis Alternative hypothesis	H_0: $\mu_{Flipped}$ - μ_{Flex} = 0 H_1: $\mu_{Flipped}$ - μ_{Flex} > 0	
T-Value	DF	P-Value
1.86	53	0.035

However, since the P- Value is <0.05, we reject H_o and accept H_1. Therefore, the average practicum posts-test score for flipped classroom design is significantly higher than the flex design. With these results, flipped design was proven to be more effective method in teaching the swimming courses. It is because it has an adaptation towards the learning speed of the students and promote a permanent active participation due to its fixed schedule where a cycle from online to actual is a consistent approach which made students become more engaged in actual demonstrations (Lucena et al., 2018). Flipped classroom offers online learning as an avenue for learning the content of the lessons while the actual setting served as the application of the knowledge and psychomotor skills.

Significant Factors Affecting Performances

A Chi-Square test for association was used to determine if the factors considered in the surveys had significant effect on the performance of the students in implementing the different instructional design.

The factors that were considered include Pre-test scores (PRE), internet connectivity and access to online services (CON), technology literacy (LIT), engagement to reading materials and videos (RMT), and engagement to instructional design (ENG).

These were analyzed with the written and practicum performances of the students in the flipped and flex instructional designs. Table 17 presented the summary of results of Chi-square tests for flipped instructional design. These were evaluated at 95.00 percent confidence level.

Table 17 suggests CON, LIT, RMT and ENG all have significant relationship to scores for written evaluation. The data results shown that higher CON, LIT, RMT and ENG tend to have higher written scores and vice-versa.

On the other hand, the PRE has no significant relations to the scores of the written evaluation. This means the activities designed in a flipped model of teaching swimming mainly affects the scores of the students rather that their predisposed knowledge of the topics.

For practicum evaluation, LIT and PRE have significant effect on the scores. Higher PRE and LIT are clustered in higher practicum scores. It is because blended instructions contribute learning satisfaction to students for acquisition of

knowledge and skills. It also provides an intense learning environment for students not only to improve their knowledge but also their practical or psychomotor skills (Back et al., 2012).

Table 17

Analysis of Factors that Affect the Written and Practicum Performance of the Students in a Flipped Instructional Design

Factor	Computed Chi-Square	Df	Critical Value	Significance
A. Written				
CON	6.623	2	5.99	Significant
LIT	27.273	4	9.49	Significant
RMT	7.273	2	5.99	Significant
ENG	11.207	4	9.49	Significant
PRE	8.727	4	9.49	Not Significant
B. Practicum				
CON	4.451	2	5.99	Not Significant
LIT	9.513	4	9.49	Significant
RMT	2.414	2	5.99	Not Significant
ENG	1.469	4	9.49	Not Significant
PRE	10.811	4	9.49	Significant

Legend:
CON - Internet Connectivity and Access Online
LIT - Technology Literacy
RMT - Reading Materials/Videos
ENG - Engagement to the Instructional Design
PRE - Pre-test

Also it improves the pedagogy of a teacher and increases flexibility in the learning environment of the learners. However, the goal of the blended learning instruction is not to replace the original setting which is the face-to-face setting

but to enhance the quality of the teaching instructions in the classroom (Catapang, 2018).

Table 18 shows that in flex blended learning instructional design, the reading materials/videos (RMT) given by the instructor has no significant relationship to the scores in the written evaluation. It is because learners in a

Table 18

Analysis of Factors that Affect the Written and Practicum Performance of the Students in a Flex Blended Learning Instructional Design

Factor	Computed Chi-Square	Df	Critical Value	Significance
A. Written				
CON	11.345	2	5.99	Significant
LIT	10.364	2	5.99	Significant
RMT	2.182	2	5.99	Not Significant
ENG	16.5	2	5.99	Significant
PRE	14	1	3.49	Significant
B. Practicum				
CON	3.037	2	5.99	Not Significant
LIT	0.008	2	5.99	Not Significant
RMT	1.503	2	5.99	Not Significant
ENG	7.778	2	5.99	Significant
PRE	11.25	2	5.99	Significant

Legend: CON - Internet Connectivity and Access Online
LIT - Technology Literacy
RMT - Reading Materials/Videos
ENG - Engagement to the Instructional Design
PRE - Pre-test

flexible setting intend to follow their own pace of time in learning which made them develop a sense of responsibility and accountability for their own learning. Reading materials may not be necessary at all times in flex blended learning instructional method because learners tend to engage more in an active learning setting with their desire and own pace of time (Giannous et al., 2012).

Other factors considered have significant relationship suggesting internet connectivity (CON) technology literacy (LIT), engagement on the instructional design (ENG) and pre-test (PRE) tends to have higher scores in the written evaluation. The previous knowledge on a material can really affect the scores of the students in a flex blended method because it reinforces the learning of the students so they can connect more and understand more the complex concepts of a certain subject (Sarabadani & Berenjian, 2017).

The practicum evaluation scores showed to have significant relationship with engagement on the instructional design (ENG) and pre-test (PRE). The engagement and pre-test scores on flex blended instructional design is needed in a practical evaluation in order to enhance the students' performance by improving learners' progress, retention and satisfaction since there is a significant increase in the students' performance using blended instruction compared to traditional instruction (Gambari et al., 2017).

Chapter 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings and the conclusions drawn in relation to the result of the data analysis undertaken. Furthermore, the recommendations formulated are presented to improve the blended instructional design for swimming education in a countryside setting.

<u>**Summary of Findings**</u>

After the data were interpreted and analyzed, the following are the findings of the study.

1.   Majority of the respondents in flipped classroom and flex blended instructional design have owned 81 android phones, 72 headsets and 71 speakers as their owned gadgets.

2.   The average result of internet connectivity and access to online services of respondents subjected to flipped instructional design is 3, interpreted as "moderate" with a mean result of 3.2978 and a standard deviation of 0.9829. While in flex blended instructional design also resulted 3, interpreted as "moderate" with a mean result of 3.233 and a standard deviation of 1.036.

3.   The mean result of technology literacy of respondents subjected to flipped instructional is 5.3445 interpreted as "moderate literacy" with a standard deviation of 1.2546. While in flex blended instructional resulted 5.1955 interpreted as "moderate literacy" with a standard deviation of 1.3462.

4.   The mean result of the students' engagement to reading materials and videos subjected to flipped classroom instructional design is 5.710 interpreted as "high engagement" with a standard deviation of 1.1574. While in flex blended instructional design is 5.590 interpreted as "high engagement" with a standard deviation of 1.3157.

5.   The respondents' engagement towards flipped classroom instructional design has a mean result of 5.2772 interpreted as "moderate engagement" with a standard deviation of 1.1768. While in flex blended instructional design has a mean result of 4.9791 interpreted as "moderate engagement" with a standard deviation of 1.3544.

6.   The scores of the students in written post-test subjected to flipped classroom instructional design is significantly higher than the pre-test with a paired difference of 4.3 and a standard deviation of 1.418. While in flex blended instructional design result also significantly higher than the pre-test with a paired difference of 3.633 and a standard deviation of 1.351.

7.   The paired difference of the practicum post-tests' score result of the students subjected to flipped classroom instructional design 2.5 with a standard deviation of 1.358. While in flex blended instructional design 2.6 with a standard deviation of 1.217.

8.   The T-Value of the average score result of written in flipped and flex instructional design is 8.35 and degrees freedom of 57 with P-Value 0.

9.   The T-Value of the average score result of practicum in flipped and flex instructional design is 1.86 and degrees freedom of 53 with P-Value 0.035.

10.   There is a significant relationship with the internet connectivity to the written performance of the students in flipped instructional design with a computed chi-square of 6.623 with a df of 2 and a critical value of 5.99. There is also a significant relationship with the technology literacy with a computed chi-square of 27.273 with a df of 4 and a critical value of 9.49. The reading materials/videos is also significant to the performance of the students with a computed chi-square of 7.273 with a df of 2 and a critical value of 5.99. Also the engagement of the students towards the flipped instructional design has a significant relationship to written performance with a computed chi-square of 27.273 with a df of 4 and a critical value of 9.49. However, the pre-test has no significant relationship with the written performance of the students in flipped design with a computer chi-square of 8.727 with a df of 4 and a critical value of 9.49.

11.   There is no significant relationship with the internet connectivity, reading materials/videos and engagement of students to the design between the practicum performance of the students in flipped design wherein the computed chi-square for internet connectivity is 4.451 with a df of 2 and a critical value of 5.99. The computed chi-square for reading materials/videos 2.414 with a df of 2 and a critical value of 5.99. And the computed chi-square for the students' engagement to flipped classroom instructional design of 1.469 with a df of 4 and

a critical value of 9.49. However, there is a significant relationship between technology literacy, pre-test and the practicum performance of the students wherein the computed chi-square for technology literacy is 9.513 with a df of 4 and a critical value of 9.49 and the computed chi-square for pre-test is 10.811 with a df of 4 and a critical value of 9.49.

12.   There is a significant relationship with the internet connectivity to the written performance of the students in flex blended instructional design with a computed chi-square of 11.345 with a df of 2 and a critical value of 5.99. There is also a significant relationship with the technology literacy with a computed chi-square of 10.364 with a df of 2 and a critical value of 5.99. The engagement of the students towards flipped instructional design has a significant relationship to written performance with a computed chi-square of 16.5 with a df of 2 and a critical value of 5.99. The pre-test is also significant to the written performance of the students with a computed chi-square of 14 with a df of 1 and a critical value of 3.49. However, the reading materials/videos has no significant relationship with the written performance of the students in flipped design with a computer chi-square of 2.182 with a df of 2 and a critical value of 5.99.

13.   There is no significant relationship with the internet connectivity, technology literacy and reading materials/videos to the practicum performance of the students wherein the computed chi-square for internet connectivity is 3.037 with a df of 2 and a critical value of 5.99. The computed chi-square technology literacy is 0.008 with a df of 2 and a critical value of 5.99. While the

computed chi-square for reading materials/videos is 1.503 with a df of 2 and a critical value of 5.99. However, there is a significant relationship between the engagement to flex design and the practicum performance of the students with a computer chi-square of 7.778 with a df of 2 and a critical value of 5.99. The pre-test is also a significant factor to the practicum performance of the students in flex blended instructional design with a computer chi-square of 11.25 with a df of 2 and a critical value of 5.99.

14.   The overall result of the study showed that Flipped Classroom instructional design is effective than Flex Blended instructional design for swimming education as it showed higher scores in Practicum and Written assessments than in Flex Blended instructional design.

Conclusions

On the basis of the aforementioned findings of the study, the following conclusions were drawn:

1.   Majority of the students owned gadgets like android phones, headset and speaker.

2.   The internet connectivity and access to online resources of the student-participants from flipped and flex instructional design is seldom.

3.   The student-participants have moderate literacy in technology utilization from flipped and flex instructional design.

4.   There was a high engagement of the student-participants towards reading materials/videos in flipped and flex instructional design.

5.   There was a moderate engagement of the students towards flipped and flex instructional design.

6.   The internet connectivity, technology literacy, reading materials/videos and engagement to flipped classroom instructional design are the factors with significant relationship to scores for written evaluation of the students in flipped classroom instructional design except for pre-test scores. However, technology literacy and pre-test scores of the students have a significant relationship to scores for practicum evaluation in flipped classroom instructional design.

7.   The internet connectivity, technology literacy, engagement to instructional design and pre-test scores are the factors with a significant relationship to scores for written evaluation in flex blended instructional design except for reading materials/videos. However, the engagement of the students towards flex blended instructional design and pre-test scores have a significant relationship for practicum performance evaluation in flex blended instructional design.

8.   The average practicum and written posts-test scores for flipped design is significantly higher than the flex instructional design.

9.   Overall, the study concluded that flipped classroom is an effective blended instruction for swimming compared to flex blended.

<u>Recommendations</u>

Based on the results of this study, flipped classroom design is recommended as a blended instruction for swimming education in countryside than flex blended design. It's because flipped classroom design attributed teaching and learning process to have an active actual practicum and demonstration of skills in swimming. Aside from having online and modular learning, flipped classroom required constant face-to-face setting as an avenue for the application and demonstration of skills which made flipped classroom an effective blended instructional design for swimming compared to flex blended.

In the light of the findings and the conclusion of the study, the following are recommended.

1.   P.E teachers'/Swimming coaches should engage more the students to technology utilization as an aid and usable tool for learning physical education activities like swimming.

2.   The students should allot more time to access online resources as part of their learning strategies in relation to swimming education or any other subject topics.

3.   The students should maintain engaging to educational reading materials and videos that can provide additional knowledge and enhancement of psychomotor skills.

4.   The students should engage on blended instructional design like flipped classroom especially for swimming education as resulted that flipped classroom instructional design can provide better learning for swimming.

5.   P.E teachers must assess or monitor the students' engagement towards flipped classroom instructional design for swimming education.

6.   The school should provide free access to internet connectivity to all students and faculty in order to promote a more effective blended learning instructional designs for learners.

7.   To swimmers, coaches and trainers, you can use my study as a reference to improve your swimming instructional techniques in improving the knowledge and skills of swimmers or learners.

8.   Furthermore, the study recommends to have further studies among other different blended learning approaches that can also be applied for swimming because the current study only focused on developing two blended instructional designs for swimming. Also, to have further studies with other students from other schools regarding with blended instruction for swimming.

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A P P E N D I C E S

Appendix A

LETTER ASKING PERMISSION FOR THE CONDUCT OF THE STUDY

February 11, 2020

DR. RICARDO T. SEVERO, JR.
Campus Director
Samar State University
Catbalogan City, Samar

Dear Sir:

Greetings!

The undersigned researcher is currently working on a research study entitled "Blended Instruction in Physical Education for Freshmen College Students in Samar State University – Mercedes Campus" as a final requirement to the subject "Thesis Writing". The study aims to assess the performance of the students using blended instruction in physical education.

In view of this, the researcher would like to request from your good office to conduct a research study in your respective school.

Your favorably consideration on this request will be highly appreciated. Thank you and God bless!

Very Truly Yours,

(SGD.) DONITA B. MABONGA
Researcher

Noted by: Recommending Approval

(SGD.) RANDY E. PACADALJEN, Ed.D.   (SGD.) ESTEBAN MALINDOG, JR., Ph.D.
SDCAP Director   Dean, Graduate School

Approved by:

RICARDO T. SEVERO, JR., Ph.D.
Campus Director, SSU-MC

Appendix B

LETTER OF CONSENT FOR THE PARTICIPANTS

January 24, 2020

Dear Participants,

Good day!

I wrote this letter to you in order to inform you that you are chosen as one of the respondents of the study entitled, "Blended Instruction in Physical Education for Freshmen College Students in Samar State University – Mercedes Campus". This is for my final requirement for the subject "Thesis Writing" in the College of Graduate Studies.

In this regard, I would like to ask a favor from you to participate with the conduct of the study. I would like also to ask for your participation regarding with the pre-test and post-test that will be given to you before and after the conduct of the study.

With this study, you are free to withdraw or participate and if you are willing, please affix your name and signature at the bottom portion of this letter for the conformity of your participation.

Rest assured that all results of your pre-test and post-test are of the great extent of confidentiality. Looking forward to your participation. Thank you very much and God bless.

Respectfully yours,

(SGD.) DONITA B. MABONGA
Researcher

Conforme:

_____

Appendix C

PARENT/GUARDIAN PERMIT

This is to certify that I have full knowledge of and permission for my son/daughter/foster child to join and participate in the study **"Blended Instruction Design for Swimming Education in a Countryside Setting".** I concur and agree on the proposed activities and assessments being implemented by the researcher upon the conduct of the study.

_____   _____
Participants' Signature   Parent/Guardian Signature
over Printed Name   over Printed Name

Contact No: _____   Contact No: _____

Appendix D

SURVEY QUESTIONNAIRE ON THE EFFECTIVENESS OF BLENDED LEARNING DESIGN FOR SWIMMING EDUCATION

PART I. PROFILE OF THE RESPONDENTS

Name (optional): _____

Age: _____ Sex: □ Male   □ Female

Home address: _____

PART II. OWNERSHIP OF GADGETS:

Owned Gadgets	No. of Gadgets
1. Desktop Computer	
2. Laptop	
3. Netbook	
4. Android Phone	
5. Keypad Cellphone	
6. IPod	
7. Headset	
8. Camera	
9. Speaker	
10. Tablet	
Total No.	

PART III.   INTERNET CONNECTIVITY AND ACCESS TO ONLINE SERVICES

Direction: Decide on the following statements whether you:
(5) ALWAYS ,
(4) VERY OFTEN,
(3) SOMETIMES,
(2) RARELY,
(1) NEVER.

Put a check on your selected option.

No.	STATEMENTS	ALWAYS	VERY OFTEN	SOMETIMES	RARELY	NEVER
1	I prefer using Wifi than mobile data to access social media					
2	I can have an access educational websites					
3	I spend an hour or more a day on social media?					
4	I read informative articles online					
5	I spend an hour or more a day on educational websites					
6	I do search your homework from internet sources					
7	I watch online videos for educational or entertainment purposes					
8	I spend an hour or more a day watching online videos					
9	I visit internet cafes just to have an access to internet					
10	I use mobile data than wifi on a daily basis					
11	I can have an access to internet at school					
12	I can have an access to online-based lectures at home or school					
13	I can obtain information or news online					
14	I find it easier to use Wifi or mobile internet to disseminate information					
15	I use Wifi or mobile internet for communications					

PART IV.   TECHNOLOGY LITERACY OF THE STUDENTS
Direction: Decide on the following statements whether you:
(7) STRONGLY AGREE,
(6) AGREE,
(5) SLIGHTLY AGREE,
(4) NEITHER AGREE NOR DISAGREE,
(3)SLIGHTLY DISAGREE,
(2) DISAGREE,
(1) STRONGLY DISAGREE.
Put a check on your selected option.

No.	STATEMENTS	7	6	5	4	3	2	1
1	I find it easier to understand the lesson with the use of technology.							
2	I know how to use online resources in order to obtain information.							
3	I know how to download apps, videos, images or materials online.							
4	I am aware with the use of the emerging technologies.							
5	I understand the limitations and capabilities of the emerging technologies?							
6	I know how to use media to present my output such as Word, Excel, Powerpoint and Publisher, etc.							
7	I know how to link information and send Emails to recipients.							
8	I know how to use different types of search engines.							
9	I know how to secure passwords and data privacy online.							
10	I know how to determine websites that can provide genuine and accurate information.							
11	I understand copyright laws regarding on the use of materials online.							
12	I know how to write citations and references from online resources.							
13	I know how to use communication tools online.							
14	I understand appropriate behavior when engaging in social media like facebook, twitter, Instagram, etc.							
15	I know how to use electronic educational tools for a collaboration with peers and mentors.							

PART V.   STUDENTS' ENGAGEMENT TO THE READING MATERIAL

AND VIDEOS

Direction: Decide on the following statements whether you:
(7) STRONGLY AGREE,
(6) AGREE,
(5) SLIGHTLY AGREE,
(4) NEITHER AGREE NOR DISAGREE,
(3) SLIGHTLY DISAGREE,
(2) DISAGREE,
(1) STRONGLY DISAGREE.
Put a check on your selected option.

No.	STATEMENTS	7	6	5	4	3	2	1
1	Having an access to online reading materials makes it easier for me to obtain information.							
2	Reading from online resources expands the information I already obtained in class.							
3	The learning materials online is a great help for me to understand the lesson better.							
4	Reading the topics in advance helps me understand the lesson better.							
5	Without reading, it would be hard for me to understand the topic.							
6	The video tutorials are of great help to enhance my psychomotor skills.							
7	The videos are relevant to the lessons which provide greater knowledge and skills.							
8	Without videos, it will be hard to execute a certain skill.							
9	Videos serve as our guide as we go along with our practicum.							
10	I can learn easily lesson if there are videos to be shown.							

PART VI. STUDENTS' ENGAGEMENT TO FLIPPED/FLEX BLENDED LEARNING INSTRUCTIONAL DESIGN

Direction: Decide on the following statements whether you:
(7) STRONGLY AGREE,
(6) AGREE ,
(5) SLIGHTLY AGREE,
(4) NEITHER AGREE NOR DISAGREE,
(3) SLIGHTLY DISAGREE,
(2) DISAGREE,
(1) STRONGLY DISAGREE
Put a check on your selected option.

No	STATEMENTS	7	6	5	4	3	2	1
1	I prefer to have an online-based content both in a classroom setting and at home.							
2	I would prefer an online learning in the classroom facilitated by the instructor.							
3	I like creating a blog or blog after the class and post it online whenever I want and wherever I am.							
4	I would like to have the opportunity to choose a specific part of the lesson and access more information on that topic while online.							
5	I feel more convenient to get prompt feedback online from the instructor regarding my questions.							
6	Flexible learning environment would facilitate meaningful and authentic learning.							
7	Through Flex blended learning, I can control how fast or slow I move through lessons.							
8	Online-based learning in the classroom lectures result a good understanding of the instructional material.							
9	Flex Blended learning teach me to have a self-directed learning.							
10	Flex Blended learning is an instructional design that could be implemented for swimming lesson.							
11	Flex Blended learning is an effective method when it comes to the delivery of information.							
12	I would like to have a lecture presentation wherever I am while I'm online.							
13	Quizzes or tests using flex blended learning help me better understand and relate the information obtained by applying the acquired knowledge.							
14	I feel comfortable working my assignment online wherever I am.							

No	STATEMENTS	7	6	5	4	3	2	1
15	I developed a sense of responsibility with the use of Flex blended learning							
16	I was able to prepare for the lessons that were given using flex / (flipped) blended learning							

M O D U L E

Swimming Education
using
Flipped Classroom Design

Donita B. Mabonga

Table of Contents

INTRODUCTION

Swimming education is an integral part in achieving one's optimum health. It is also one of the most essential aspects of a survival situation. However, it is commonly performed as part of the sports competition. It involves intensive training in order to develop speed and stamina as well as the mastery of the arm and leg movements and breathing technique.

This is an 18-hour module integrated with blended learning design "flipped classroom". With this module, the students will be able to learn the basic skills of swimming. Specifically, this module will focus on body conditioning, the mastery of the fundamentals of swimming and the four major strokes of swimming. It will also discuss some safety measures of swimming in order to avoid injuries and sudden accidents. This module will help also help students improve their swimming skills and be able to compete in any swimming competitions. And of course, a great help to develop a survival skill which is needed in case of emergency in water. Proper execution and safety measure will also be observed during the conduct of swimming education using flipped classroom.

LESSON 1: <u>**Physical Conditioning**</u>

Time Allotment: 2 hours (1 meeting in a week)

Learning Objectives:

At the end of this 2 hrs. lesson, the students are expected to:

<u>1.</u> Identify the three stages of an exercise.

<u>2.</u> Apply the importance of exercise before the conduct of an activity

<u>3.</u> Perform physical conditioning exercises in preparation for swimming activities.

OUT – CLASS SETTING: *Online – Based Learning*

<u>ACTIVITY NO. 1</u>: **Let's Do It!** ☺

1. Visit the Google Classroom.

2. Read and understand the lesson about physical conditioning exercises and identify the three stages of exercise.

3. Watch also the video tutorials on how warm-up exercises should be conducted properly.

4. Create your own exercise activity at home that will condition your body in preparation for swimming activity.

ACTIVITY NO. 2 : **Let's reflect!**

Direction: Go to Google Classroom and create a blog that contains your idea about the importance of physical conditioning before the swimming activity and discuss how exercises would benefit our body to become physically fit and healthy.

IN – CLASS SETTING: *Lecture-Based Learning*

ACTIVITY NO. 3 : **Let's answer this!**

1. Why is it important to follow the three stages of exercises if you are conducting a physical conditioning?

_____

_____

_____

_____

2. Why do we need to have a body conditioning before we proceed to a vigorous activity like swimming?

_____

_____

_____

_____

SUMMARY

Physical conditioning is an integral part of swimming activity. It is very important to warm-up the body before jumping up into a vigorous activity in order to prevent injuries. Exercise is an important way of physical conditioning which helps the body to become physically fit and healthy. To have an effective exercise an individual must follow the three stages of exercising namely the warm-up followed by the main activity and the last is the cool down.

IN – CLASS SETTING: What have you learned? ☺

Evaluation

Perform in the classroom the exercise activity you have created in preparation for swimming activity. The three stages of exercise will be observed upon performing your own physical conditioning activity in preparation for swimming.

Here is the Rubric for

Criteria	5	4	3	2	1	Rating
1. Has followed the 3 stages of exercise.						
2.Has followed the approximate time to conduct an exercise before the main activity "swimming".						
3. Has performed the exercises properly.						
4. The exercises performed are appropriate for preparing the body for the swimming activity.						

5.The intensity of your exercise can warm-up the body for swimming activity.						
					Total	

L E S S O N 2: <u>F u n d a m e n t a l s   o f   S w i m m i n g</u>

Time Allotment: 6 hours (2 meetings in a week)

Learning Objectives:

At the end of this lesson, the students are expected to:

1. Determine the basic skills to an efficient execution of swimming.

2. Describe the fundamental skills in swimming on how it will be executed efficiently.

3. <u>Execute properly the fundamental skills in swimming.</u>

OUT – CLASS SETTING: *Online – Based Learning*

<u>ACTIVITY NO. 1</u>: **Let's Do It!** ☺

1. Visit the Google Classroom

2. Read the topic on "Fundamental Skills in Swimming".

3. Watch video tutorials on how the fundamental skills being performed.

4. Practice the fundamental skills at home by shadowing.

<u>ACTIVITY NO. 2</u>: **Let's reflect!**

Directions:

1. Go to Google Classroom.

2. Create a blog or vlog that contains your experience while practicing the fundamental skills in swimming.

3. Post it to the Google Classroom.

IN – CLASS SETTING: *Lecture-Based Learning*

ACTIVITY NO. 3 : **Let's answer this!**

Based on your understanding with the lesson, describe the fundamentals of swimming below as to the proper way on how it will be executed.

1. Breathing Techniques

2. Submerging

3. Floating

4. Back Sculling

5. Gliding

Summary

Fundamentals of swimming are the primary skills that should be learned by an individual before he or she can learn the strokes in swimming. These are also the ways to gain mastery in swimming and to have confidence and efficient execution of the swimming strokes. The fundamentals of swimming that should be kept in mind are the breathing skills, floating and submerging, the placement of the head and the proper way of gliding and landing on the water.

IN – CLASS SETTING: What have you learned? ☺

Evaluation

In an actual setting (at the beach), the students will execute the following fundamentals of swimming. Before the demonstration a physical conditioning must be conducted first before the swimming activity. Their execution will be evaluated using the rubrics. *(This activity will be facilitated by the instructor and a swimmer resource person).*

Rubrics for Fundamentals of Swimming

Fundamental Skills	Advanced (4 pts.)	Proficient (3 pts.)	Basic (2 pts.)	Below basic (1pt.)	No submission / illegal
Breathing Technique	Excellent way of breathing	Successful way of breathing	Adequate breathing technique	Poor breathing technique	No test skill completed
Submerging	Excellent way of submerging	Successful way of submerging	Adequate way of submerging	Poor way of submerging	No test skill completed
Floating	Excellent way of floating	Successful way of floating	Adequate way of floating	Poor way of floating	No test skill completed
Back Sculling	Excellent way of back sculling	Successful way back sculling	Adequate way back sculling	Poor way back sculling	No test skill completed

Gliding	Excellent way of gliding	Successful way gliding	Adequate way gliding	Poor way gliding	No test skill completed

LESSON 3: <u>Four Major Strokes in Swimming</u>

Time Allotment: 10 hours (3 meetings in a week)

Learning Objectives:

> At the end of this lesson, the students are expected to:

1. Discuss how the four major strokes should be performed.

2. Analyze the basic steps of each stroke on how it will be done properly.

3. Perform efficiently the four major strokes in swimming.

OUT – CLASS SETTING: *Online – Based Learning*

<u>ACTIVITY NO. 1</u>: **Let's Do It!** ☺

1. Visit the Google Classroom

2. Read the topic on "The Four Major Strokes in Swimming".

3. Watch video tutorials on how the four strokes should be performed.

4. Practice the four strokes at home by shadowing.

ACTIVITY NO. 2 : **Let's reflect!**

Create a blog and post it in the Google Classroom that contains your experience while practicing the four strokes in swimming by shadowing.

IN – CLASS SETTING: *Lecture-Based Learning*

ACTIVITY NO. 3 : **Let's answer this!**

In a classroom setting, the students will be grouped into four (4) groups. Each group will be assigned to a specific stroke and will analyze the basic steps of the stroke given to them.

The group will discuss and perform the stroke to the class by shadowing.

1. Freestyle (Group1)   3. Back Stroke (Group 3)

2. Breast Stroke (Group 2)   4. Butterfly Stroke (Group 4)

Here is the rubric for the evaluation of the presentation

	5	**4**	**3**	**2**	**1**	**Rating**
Freestyle (Group1)						
Breast Stroke (Group 2)						
Back Stroke (Group 3)						
Butterfly Stroke (Group 4)						

SUMMARY

The four major strokes in swimming comprises the freestyle, breast stroke, back stroke and butterfly stroke. These four major strokes require proper execution of the arms and leg movement including the place of the head and the breathing technique of a

swimmer. These four major strokes are usually performed at every sports competition as it is part of the competitive games in every Athletic Meets.

IN – CLASS SETTING: *Classroom-Based Activity*

Watch video tutorials on the four strokes of swimming. The following are the URL of the video tutorials.

1. Freestyle *(https://m.youtube.com/watch?v=5HLW2Al1lnk)*

2. Breast stroke *(https://m.youtube.com/watch?v=lrUK2O-NBXo)*

3. Back Stroke *(https://m.youtube.com/watch?v=rLBxLUF1jil)*

4. ButterflyStroke *(https://m.youtube.com/watch?v=H16wDdWw3Cc)*

APPLICATION SETTING: What have you learned? ☺

Evaluation : The students will perform the four major strokes of swimming. Their performance will be rated based on the following rubrics for each stroke below.

Freestyle Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Horizontal with excellent streamine position, continuous fluid roll and body in straight alignment.	Horizontal to 15 degrees from surface with good streamline position, consistent to some side to side roll, and body in predominantly straight alignment.	Horizontal to 30 degrees from surface with poor streamline position,	Body position often vertical at surface with poor to no streamline position, little to no side to side roll, and body alignment not straight.
Arm Position	High elbow with relaxed recovery, pull, full extension at finish.	High elbow with good recovery, hand enter above head, slight outward sweep with bent pull, power phase finishes at hip or beyond.	Straight Arm Recovery, hand enter at or slightly above head, straight arm pull power phase finishes at waist to hip.	Under water arm recovery, hands at head, under water pull with straight arm low power, power phase finishes at mid torso to waist.
Kick Position	Continuous kick from hips, 2,4 or 6 beat kick, feet stay below Surface and are pointed.	Continuous kick from hips with slight knee bend, knees and ankles extebded, but not	Continuous kick with some bike, bent hips and	Inconsistent kick with bent knees, flexed feet ad little forward movement in power.

		rigid, feet stay below surface, but are not pointed.	knees during downbeat of kick.	
Breathing Position	Exhale underwater during power phase, head has minimal movement and is flat in the water during breathing.	Occasional exhale underwater during power phase, head has moderate movement and is occasionaly flat during breathing.	No exhale underwater during power phase, head is lifted to side, but ear not in water during breathing.	No exhale underwater during power phase, head is lifted forward and breathing is labored, inconsistent and not streamline.

Breast Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Body is nearly horizontal in water. Streamline while maintaining body roll.	15 degrees from surface. Coordination is apparent but the glide phase is too short thus making the stroke look rushed.	30 degrees in horizontal from surface. There is some coordination in the movement but not much.	Body position starts off horizontally but quickly turns to a vertical position once they begin. There is very little forward motion. There is a lot of underwater swimming with a lack of coordination.
Arm Position	Arm extended fully in coordination and sequence. Pull finishes at the shoulders. Pull provides lots of movements.	Arms nearly to full extension during the glide phase. Arms eithers stop before the shoulders or just past the shoulders this disrupting the power phase.	Hands are synchronized but the pull is either too high or too low. Minimal power in the pulling phase.	Fingers are spread apart and hands are out of sync. Ineffective power in the pulling phase arms are pull to the hips. The hands will sometimes be visible above the water or far below the surface line.
Kick Position	Kick is perfectly in sync. Knees remain underneath the swimmer and extend symmetrically. The kick provides excellent forward propulsion. There is no evidence of a scissor kick.	The occasional foot comes out of the water. Population is good but not great. One leg may be chasing the other thus looking like a scissor kick. The kick provides sufficient gliding.	Noticeable foot splashing and inconsistent kick. One leg is kicking later than the other. Knees are sometimes pointing too far out to the sides. Propulsion and gliding is minimal.	Feet are coming out of the water and are not symmetrical when kicking. The kick sometimes looks like a scissor kick. Minimal propulsion during the kick and glide phase.
Breathing Position	The pull breathe-kick-glide phases are all noticeable. The glide phase is the longest phase and held for at least 1 second. Noticeable exhalation in the water and inhalation out of the water.	One or more phases are out of sync. The glide may be rushed or may not be exhaling in the water.	Two or more of the phases are out of sync. The stroke looks rushed and timing. There is too much bobbing vertically in the water even though the student is moving forward. The glide phase is short.	The stroke is completely out of sync. The pull breathe-kick and glide phases are out of order. There is a lot of vertical movement. Breathing is erratic. There is a lot of splashing or underwater swimming.

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)

Body Position	Body horizontal with proper body/shoulder roll throughout.	Body horizontal or nearly horizontal, some body roll.	Body is 15-degree angle, beginning of body roll.	Body at 30-degree angle (legs submerged, no body roll)
Arm Position	Slight knee bend, small splash, relaxed feet.	Two of the three requirements met	One of the three requirements met	Deep knee band (knees coming out of water). Feet flexed and submerged.
Kick Position	Proper rhythm maintained throughout (one arm enters as other arm exits)	Two of the three requirements met.	One of the three requirements met	Arms are bent, slap the water, and do not maintain a consistent rhythm
Breathing Position	Swimmer is comfortable in the water and can finish 50m backstroke	Swimmer looks somewhat comfortable in the water and can finish 50m backstroke with some breaks.	Swimmer looks somewhat comfortable in the water and can finish 25m backstroke with some backstroke.	Swimmer does not look comfortable in the water. Swimmer is submerged and /or is not able to finish 25m of backstroke.

Back Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Horizontal on the surface of the water.	Body nearly horizontal on the surface of the water	Legs or whole body somewhat submerged during stroke.	Legs or whole body submerged during stroke.
Arm Position	Legs are together for the kick. Legs come up straight then bend to propel the swimmer forward with relaxed feet.	Two of three requirements are met	One of three requirements are met	Legs do not stay together during kick, do not have a rhythm, and feet are flexed (none of the requirements are met).
Kick Position	Arms recover consistently out of the water.	Arms recover out of the water more than half of the time.	Arms recover out of the water about 25% of the time.	Arms are not able to dear the water
Breathing Position	Swimmer is comfortable with the stroke and can finish the butterfly stroke without stopping	Swimmer looks somewhat comfortable and can finish the butterfly stroke but with difficulty.	Swimmer struggles with the butterfly stroke, but can finish the butterfly stroke without stopping completely.	Swimmer does not look comfortable in the water. Swimmer is not able to finish the butterfly stroke

Butterfly Stroke

Source : www.*rcampus*.com

References

Books

Calicdan, A.V., et al, (2015). Physical Education 3 (Individual and Dual Sports),Jimczyville Publications.

Carlos, M.D.,et al, (2013). Physical Education 3 (Individual and Dual Sports), St. Andrew Publishing House.

Young, M. (2013). The Swimming Strokes Book (82 easy Exercises for Learning How   to Swim The Four Basic Swimming Strokes). Educate & Learn Publishing , Hertfordshire, UK.

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Freestyle (https://m.youtube.com/watch?v=5HLW2Al1lnk)

Breast stroke (https://m.youtube.com/watch?v=lrUK2O-NBXo)

Back Stroke (https://m.youtube.com/watch?v=rLBxLUF1jil)

ButterflyStroke (https://m.youtube.com/watch?v=H16wDdWw3Cc)

www.swim-teach.com

MODULE

Swimming Education

(The Four Major Strokes of Swimming)

using

FLEX Blended Learning Design

Donita B. Mabonga

Table of Contents

INTRODUCTION

Swimming education is an integral part in achieving one's optimum health. It is also one of the most essential aspects of a survival situation. However, it is commonly performed as part of the sports competition. It involves intensive training in order to develop speed and stamina as well as the mastery of the arm and leg movements and breathing technique.

This is an 18-hour module integrated with blended learning design "flex blended learning design". With this module, the students will be able to learn the basic skills of swimming. Specifically, this module will focus on body conditioning, the mastery of the fundamentals of swimming and the four major strokes of swimming. It will also discuss some safety measures of swimming in order to avoid injuries and sudden accidents. This module will help also help students improve their swimming skills and be able to compete in any swimming competitions. And of course, a great help to develop a survival skill which is needed in case of emergency in water. Proper execution and safety measure will also be observed during the conduct of swimming education using flex blended learning design.

LESSON 1: <u>Physical Conditioning</u>

Time Allotment: 2 hours (1 meeting in a week)

Learning Objectives:

At the end of this lesson, the students are expected to:

<u>1.</u> Identify the three stages of an exercise.

<u>2.</u> Apply the importance of exercise before the conduct of an activity

<u>3.</u> Perform physical conditioning exercises in preparation for swimming activities.

IN – CLASS SETTING: Let's Do It! ☺

Online – Based Learning

<u>ACTIVITY NO. 1</u>:

1. Use your devices (mobile phones/laptop) and visit the Google Classroom.

2. Read and understand the lesson about physical conditioning exercises and identify the three stages of exercise.

<u>ACTIVITY NO. 2:</u>

<u>1.</u> Watch the video tutorials on how warm-up exercises should be conducted properly.

2. Group yourselves into 3 groups.

3. With your groups create your own exercise activity that will condition your body in preparation for swimming activity.

(Each group will be facilitated by the instructor)

OUT – CLASS SETTING : **Let's reflect!** ☺

Reflective Podcasts/Vodcasts

ACTIVITY NO. 3 :

Go to Google Classroom and create a blog or vlog that contains your idea about the importance of physical conditioning before the swimming activity and discuss how exercises would benefit our body to become physically fit and healthy. You can post your blog or vlog anytime you want within the whole week.

SUMMARY

Physical conditioning is an integral part of swimming activity. It is very important to warm-up the body before jumping up into a vigorous activity in order to prevent injuries. Exercise is an important way of physical conditioning which helps the body to become physically fit and healthy. To have an effective exercise an individual must follow the three stages of exercising namely the warm-up followed by the main activity and the last is the cool down.

IN – CLASS SETTING: What have you learned? ☺

ACTIVITY NO. 4 :

      Perform in the classroom the exercise activity you have created in preparation for swimming activity. The three stages of exercise will be observed upon performing your own physical conditioning activity in preparation for swimming.

Here is the rubric! ☺

Criteria	5	4	3	2	1	Rating
1. Has followed the 3 stages of exercise.						
2.Has followed the approximate time to conduct an exercise before the main activity "swimming".						
3. Has performed the exercises properly.						
4. The exercises performed are appropriate for preparing the body for the swimming activity.						
5.The intensity of your exercise can warm-up the body for swimming activity.						
					Total	

LESSON 2: <u>Fundamentals of Swimming</u>

Time Allotment: 6 hours (2 meetings in a week)

Learning Objectives:

At the end of this lesson, the students are expected to:

1. Determine the basic skills to an efficient execution of swimming.

2. Describe the fundamental skills in swimming on how it will be executed efficiently.

3. Execute properly the fundamental skills in swimming.

IN – CLASS SETTING: Let's Do It! ☺

Online – Based Learning

<u>ACTIVITY NO. 1</u>:

Directions to be followed:

1. Choose a partner and visit the Google Classroom using your gadgets.

2. Read the topic on "Fundamental Skills in Swimming" and discuss it with you partner.

3. Watch the video tutorials together with your partner on how the fundamental skills being performed.

4. Practice the fundamental skills by shadowing together with your partner.

   (Each pair in this activity will be facilitated by the instructor).

OUT – CLASS SETTING : **Let's reflect!** ☺

Reflective Podcasts/Vodcasts

ACTIVITY NO. 2:

Go to Google Classroom and create a blog or vlog that contains your experience while practicing the fundamental skills in swimming through shadowing. You can post your blog or vlog anytime you want within the whole week.

IN – CLASS SETTING: **Let's answer this!**

ACTIVITY NO. 3**:**

Based on your understanding with the lesson, describe the fundamentals of swimming below as to the proper way on how it will be executed.

1. Breathing Techniques

2. Submerging

3. Floating

4. Back Sculling

5. Gliding

Summary

Fundamentals of swimming are the primary skills that should be learned by an individual before he or she can learn the strokes in swimming. These are also the ways to gain mastery in swimming and to have confidence and efficient execution of the swimming strokes. The fundamentals of swimming that should be kept in mind are the

breathing skills, floating and submerging, the placement of the head and the proper way of gliding and landing on the water.

IN – CLASS SETTING SETTING: What have you learned? ☺

In an actual setting (at the beach), the students will execute the following fundamentals of swimming. Before the demonstration a physical conditioning must be conducted first before the swimming activity. Their execution will be evaluated using the rubrics. *(This activity will be facilitated by the instructor and a swimmer resource person).*

Rubrics for Fundamentals of Swimming

Fundamental Skills	Advanced (4 pts.)	Proficient (3 pts.)	Basic (2 pts.)	Below basic (1pt.)	No submission/ illegal
Breathing Technique	Excellent way of breathing	Successful way of breathing	Adequate breathing technique	Poor breathing technique	No test skill completed
Submerging	Excellent way of submerging	Successful way of submerging	Adequate way of submerging	Poor way of submerging	No test skill completed
Floating	Excellent way of floating	Successful way of floating	Adequate way of floating	Poor way of floating	No test skill completed
Back Sculling	Excellent way of back sculling	Successful way back sculling	Adequate way back sculling	Poor way back sculling	No test skill completed

Gliding	Excellent way of gliding	Successful way gliding	Adequate way gliding	Poor way gliding	No test skill completed

LESSON 3: Four Major Strokes in Swimming

Time Allotment: 10 hours (3 meetings in a week)

Learning Objectives:

> At the end of this lesson, the students are expected to:

1. Discuss how the four major strokes should be performed.

2. Analyze the basic steps of each stroke on how it will be done properly.

3. Perform efficiently the four major strokes in swimming.

IN – CLASS SETTING: Let's Do It! ☺

Online – Based Learning

ACTIVITY NO. 1:

Directions to be followed:

1. Visit the Google Classroom

2. Read the topic on "The Four Major Strokes in Swimming".

3. Watch video tutorials on how the four strokes should be performed.

4. Practice the four strokes at home by shadowing.

OUT – CLASS SETTING : **Let's reflect!** ☺

Reflective Podcasts/Vodcasts

ACTIVITY NO. 2 :

Create a blog and post it in the Google Classroom that contains your experience while practicing the four strokes in swimming by shadowing. Post your blog or vlog within this week.

IN – CLASS SETTING: **Let's answer this!**

ACTIVITY NO. 3

      In a classroom setting, the students will be grouped into four (4) groups. Each group will be assigned to a specific stroke and will analyze the basic steps of the stroke given to them. The group will discuss and perform the stroke to the class by shadowing.

1. Freestyle (Group1)
2. Breast Stroke (Group 2)

3. Back Stroke (Group 3)
4. Butterfly Stroke (Group 4)

Here is the rubric for the evaluation of the presentation

	5	4	3	2	1	Rating
Freestyle (Group1)						
Breast Stroke (Group 2)						
Back Stroke (Group 3)						
Butterfly Stroke (Group 4)						

SUMMARY

The four major strokes in swimming comprises the freestyle, breast stroke, back stroke and butterfly stroke. These four major strokes require proper execution of the arms and leg movement including the place of the head and the breathing technique of a swimmer. These four major strokes are usually performed at every sports competition as it is part of the competitive games in every Athletic Meets.

IN – CLASS SETTING: **Let's Practice!** ☺

Before the practice, there will have first a film showing on the four strokes of swimming namely the:

1. Freestyle *(https://m.youtube.com/watch?v=5HLW2Al1lnk)*

2. Breast stroke *(https://m.youtube.com/watch?v=lrUK2O-NBXo)*

3. Back Stroke *(https://m.youtube.com/watch?v=rLBxLUF1jil)*

4. ButterflyStroke *(https://m.youtube.com/watch?v=H16wDdWw3Cc)*

APPLICATION SETTING:: What have you learned? ☺

The students will perform the four major strokes of swimming. Before the demonstration a physical conditioning must be conducted first before the swimming activity. Their performance will be rated based on the following rubrics for each stroke below.

Freestyle Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Horizontal with excellent streamine position, continuous fluid roll and body in straight alignment.	Horizontal to 15 degrees from surface with good streamline position, consistent to some side to side roll, and body in predominantly straight alignment.	Horizontal to 30 degrees from surface with poor streamline position,	Body position often vertical at surface with poor to no streamline position, little to no side to side roll, and body alignment not straight.
Arm Position	High elbow with relaxed recovery, pull, full extension at finish.	High elbow with good recovery, hand enter above head, slight outward sweep with bent pull, power phase finishes at hip or beyond.	Straight Arm Recovery, hand enter at or slightly above head, straight arm pull power phase finishes at waist to hip.	Under water arm recovery, hands at head, under water pull with straight arm low power, power phase finishes at mid torso to waist.
Kick Position	Continuous kick from hips, 2,4 or 6 beat kick, feet stay below Surface and are pointed.	Continuous kick from hips with slight knee bend, knees and ankles extebded, but not rigid, feet stay below surface, but are not pointed.	Continuous kick with some bike, bent hips and knees during downbeat of kick.	Inconsistent kick with bent knees, flexed feet ad little forward movement in power.
Breathing Position	Exhale underwater during power phase, head has minimal movement and is flat in the water during breathing.	Occasional exhale underwater during power phase, head has moderate movement and is occasionaly flat during breathing.	No exhale underwater during power phase, head is lifted to side, but ear not in water during breathing.	No exhale underwater during power phase, head is lifted forward and breathing is labored, inconsistent and not streamline.

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Body is nearly horizontal in water. Streamline while maintaining body roll.	15 degrees from surface. Coordination is apparent but the glide phase is too short thus making the stroke look rushed.	30 degrees in horizontal from surface. There is some coordination in the movement but not much.	Body position starts off horizontally but quickly turns to a vertical position once they begin. There is very little forward motion. There is a lot of underwater swimming with a lack of coordination.
Arm Position	Arm extended fully in coordination and sequence. Pull finishes at the shoulders. Pull provides lots of movements.	Arms nearly to full extension during the glide phase. Arms eithers stop before the shoulders or just past the shoulders this disrupting the power phase.	Hands are synchronized but the pull is either too high or too low. Minimal power in the pulling phase.	Fingers are spread apart and hands are out of sync. Ineffective power in the pulling phase arms are pull to the hips. The hands will sometimes be visible above the water or far below the surface line.

Kick Position	Kick is perfectly in sync. Knees remain underneath the swimmer and extend symmetrically. The kick provides excellent forward propulsion. There is no evidence of a scissor kick.	The occasional foot comes out of the water. Population is good but not great. One leg may be chasing the other thus looking like a scissor kick. The kick provides sufficient gliding.	Noticeable foot splashing and inconsistent kick. One leg is kicking later than the other. Knees are sometimes pointing too far out to the sides. Propulsion and gliding is minimal.	Feet are coming out of the water and are not symmetrical when kicking. The kick sometimes looks like a scissor kick. Minimal propulsion during the kick and glide phase.
Breathing Position	The pull breathe-kick-glide phases are all noticeable. The glide phase is the longest phase and held for at least 1 second. Noticeable exhalation in the water and inhalation out of the water.	One or more phases are out of sync. The glide may be rushed or may not be exhaling in the water.	Two or more of the phases are out of sync. The stroke looks rushed and timing. There is too much bobbing vertically in the water even though the student is moving forward. The glide phase is short.	The stroke is completely out of sync. The pull breathe-kick and glide phases are out of order. There is a lot of vertical movement. Breathing is erratic. There is a lot of splashing or underwater swimming.

Breast Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Body horizontal with proper body/shoulder roll throughout.	Body horizontal or nearly horizontal, some body roll.	Body is 15-degree angle, beginning of body roll.	Body at 30-degree angle (legs submerged, no body roll)
Arm Position	Slight knee bend, small splash, relaxed feet.	Two of the three requirements met	One of the three requirements met	Deep knee band (knees coming out of water). Feet flexed and submerged.
Kick Position	Proper rhythm maintained throughout (one arm enters as other arm exits)	Two of the three requirements met.	One of the three requirements met	Arms are bent, slap the water, and do not maintain a consistent rhythm
Breathing Position	Swimmer is comfortable in the water and can finish 50m backstroke	Swimmer looks somewhat comfortable in the water and can finish 50m backstroke with some breaks.	Swimmer looks somewhat comfortable in the water and can finish 25m backstroke with some backstroke.	Swimmer does not look comfortable in the water. Swimmer is submerged and /or is not able to finish 25m of backstroke.

Back Stroke

	Exceeding Expectation (4pts)	Meeting Expectations (3pts)	Approaching Expectations (2pts)	Below Expectations (1pt)
Body Position	Horizontal on the surface of the water.	Body nearly horizontal on the surface of the water	Legs or whole body somewhat submerged during stroke.	Legs or whole body submerged during stroke.
Arm Position	Legs are together for the kick. Legs come up straight then bend to propel the swimmer forward with relaxed feet.	Two of three requirements are met	One of three requirements are met	Legs do not stay together during kick, do not have a rhythm, and feet are flexed (none of the requirements are met).
Kick Position	Arms recover consistently out of the water.	Arms recover out of the water more than half of the time.	Arms recover out of the water about 25% of the time.	Arms are not able to dear the water
Breathing Position	Swimmer is comfortable with the stroke and can finish the butterfly stroke without stopping	Swimmer looks somewhat comfortable and can finish the butterfly stroke but with difficulty.	Swimmer struggles with the butterfly stroke, but can finish the butterfly stroke without stopping completely.	Swimmer does not look comfortable in the water. Swimmer is not able to finish the butterfly stroke

Butterfly Stroke

Source : www.*rcampus.com*

References

Books

Calicdan, A.V., et al, (2015). Physical Education 3 (Individual and Dual Sports),Jimczyville Publications.

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ButterflyStroke (https://m.youtube.com/watch?v=H16wDdWw3Cc)

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CURRICULUM VITAE

CURRICULUM VITAE

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