

Development of Plate in (Physical Literacy Assessment Tool and Evaluation) Physical Education

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Abstract

The Physical Literacy Assessment Tool and Evaluation in Physical Education is an assessment and evaluation tool designed to assist teachers in determining the level of physical literacy proficiency of their students and in designing appropriate learning activities to meet their requirements. This study aimed to assess the cognitive, affective, and psychomotor components of the physical literacy of the participants. This research, with a quasi-experimental design, is conducted in the field using a valid and reliable assessment instrument on the grade ten learners of Fernando Air Base Integrated National High School who were purposefully selected. The assessment instrument and evaluation data were statistically processed and interpreted. Using Cronbach's alpha, it attained an acceptable level of consistency of .757. This concludes that the instrument is reliable and may be used to distinguish the level of physical literacy proficiency among learners as well as to formulate novel and contextualized learning materials and activities. In addition, the incorporation of physical fitness tests and their expansion to other grade levels in every learning quarter will be of great assistance to instructors and educational institutions in raising the physical literacy level of students.

Keywords: Physical Literacy; Assessment Tool; Physical Education

1. Context & Rationale

Modern youth are susceptible to numerous life-altering events. The holistic development of youth is an innovation in their daily participation in society. According to (Fletcher A., 2014), holistic youth development consists of activities that strengthen the young person as a whole. Today, more individuals recognize that infant and youth development do not occur in a straight line. Instead, it is determined by the ecology surrounding children and adolescents. This system consists of numerous components, including adults, other youth, the environment, social and economic realities, and culture. Youth holistic development encompasses the mental, physical, emotional, social, and spiritual domains. These aspects are essential and contribute significantly to a child's development, and because each aspect is interconnected, it is crucial that the development be balanced. The physical aspect, which includes the body's structure, attributes, and abilities, plays a crucial role in a person's holistic development.

Every individual's physical condition is essential for daily activities. It aids us in fulfilling other obligations and enhancing other aspects. By means of the growth and maturation of the human body, the physical structure evolves scientifically. The physical attribute encompasses aesthetic body enhancements and other material attachments as well as the physical characteristics of a person. Physical aptitude is the demonstration of movement and the skills required to respond to physical activity. According to a study (Kaur H. et al., 2020), it is important to note that physical activities and exercise not only maintain physical and

psychological health but also help the body respond to the negative effects of diseases like diabetes, hypertension, cardiovascular diseases, and respiratory diseases. Humanity has been confronted by a catastrophe for the past three years. The recent COVID-19 pandemic is an enormous global health emergency (Bavel et al., 2020) and a rapidly spreading pandemic (Bentlage et al., 2020). Due to the closure, this event halts our daily activities and has a negative impact on the overall development of people, particularly young people. In their study, (Ammar et al. 2020) found that COVID-19 home confinement led to a decrease in all levels of physical activity, a 28% increase in daily sedentary time, and an increase in unhealthy food consumption patterns. In addition, according to the research of (Hazar, 2018), young people's digital addiction is on the rise. According to scientific research, digital game addiction has many psychological and physiological effects on individuals. In relation to this, young people's physical activity decreases as a result of their sedentary lifestyle at home. However, the world did not cease its search for a suitable solution, and our nation provided the necessary solutions to support the local environment. Education is one of the daily activities of humans, particularly young people, that significantly contributes to the individual's holistic development.

The Department of Education endeavors to advance education in the Nation. On the initiative of the education expert, they developed the Basic Learning Continuity Plan, which provides distance learning via the Internet, printed modules, television and radio-based education, and blended learning. The abrupt changes in the educational system and in our society brought about by the COVID-19 pandemic have resulted in a very difficult delivery of the educational system, which has a significant impact on the learning engagement of students in their respective classes. However, due to the perseverance of educators and students, we have overcome the obstacles in our society. After three years of adversity, we return to our old scheme of delivering education, confronting new challenges, one of which is the recovery of the learners' literacy and numeracy in all subject areas. The junior high school curriculum consists of eight subjects in which literacy is required. However, due to their prior academic engagement, the majority of them are struggling, and one of their difficulties is physical literacy, which is a component of physical education and one of the MAPEH components.

According to the study by (Lundvall, 2015), literacy is frequently used to distinguish between a technical comprehension of reading and writing on the one hand and a broader understanding of communication on the other. According to (Roetart, 2015), physical literacy is "the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person." Physical literacy is in the field of physical education, which offers numerous activities to the learners in a physical way by engaging in physical activities. Physical literacy is defined by the (International Physical Literacy Association, 2014) as the motivation, self-assurance, physical competence, knowledge, and understanding to value and accept responsibility for lifelong participation in physical activities.

As indicated in the K-12 Curriculum 2016 philosophy, fitness and movement education content is the core of the K-12 Physical Education Curriculum. It consists of the value, knowledge, skills, and experiences associated with physical activity participation in order to (1) attain and maintain health-related fitness (HRF) and (2) optimize health. It aims to impart an appreciation for the significance of HRF so that the learner can put HRF knowledge into practice. Therefore, self-management is an essential trait. In addition, this curriculum acknowledges that fitness and healthful physical activity (PA) behaviors must take into account the family and other environmental settings (e.g., school, community, and larger society). This orientation is a paradigm shift from the previous emphasis on athletic accomplishment in a PE curriculum dominated by sports. Move to

learn is the context of physical activity as a means for learning, whereas learn to move encompasses the learning of skills, techniques, and knowledge that are prerequisites for participation in a variety of physical activities, such as exercise, games, sports, dance, and recreation. The Department of Education's Physical Education subject aims to develop students' skills in accessing, synthesizing, and evaluating information; making informed decisions; enhancing and advocating their own and others' fitness and health; and promoting their own and others' fitness and health. The knowledge, comprehension, and skills necessary for all students to live an active life for fitness and health are the foundation of their competence, confidence, and dedication.

According to the research conducted by (Sum RKW et al., 2016), physical literacy is defined and emphasized. A person must be creative, imaginative, and precise in expressive movement; competent and efficient in utilitarian movement; and inventive, versatile, and proficient in objective movement. The definitions of physical literacy are intended to assist physical education teachers in implementing quality physical education curricula, extracurricular activities, and health promotion programs that foster the development of physically literate students. The concept of physical literacy can also be investigated from the perspectives of the child as an active learner, the teacher as an active practitioner, and the school and curriculum as active contexts. Physical literacy is an integral element of the education of the whole child, which is comprised of a variety of intelligences. suggested that "how exercise is conveyed to children may have significant implications for their future activity patterns and, by extension, their adult health and well-being.

However, due to the current structure of the department of education, the implementation of the curriculum is quite difficult, and the learners' sedentary lifestyle is caused by a number of factors, including hunger, mental toughness, family problems, addiction to online games, and a lack of competence and confidence in undertaking physical activities and long-term physical responsibilities. These issues impede the physiological development of the learners, which may also impede their holistic development. In addition, we have emerged from the educational crisis caused by the COVID-19 pandemic, which has had a significant impact on the physical literacy of the students.

Consequently, given the significance of physical literacy and the numerous obstacles to the physical development of students, their holistic development is significantly impacted during this period of educational system recovery in the Philippines. It is necessary to assess the physical literacy of students so that teachers can determine which of the following holistic factors affecting physical literacy will be addressed: Teachers will be able to enhance the delivery of learning in physical education classes as well as students' physical literacy if they create an assessment tool and evaluation that consider the learner's holistic characteristics.

2. Action Research Objectives/Questions

The study determined the physical literacy of the selected learners from Grade 10 level of Fernando Air Base Integrated National High School in the school year 2022-2023. This helped the teachers to improve the delivery of the physical education activity. Specifically, this study sought to meet the following objectives.

1. Proposed an assessment tool and evaluation measuring the Cognitive, Affective, and Psychomotor aspects for the Grade 10 learners in Physical Education

2. Determine the validity and reliability of the assessment tool.

3. Action Research Method and Procedures

Research Design

Using a quasi-experimental design, the researcher conducted quantitative research employing quantitative methodology. According to Creswell (2008), a quasi-experiment is an experimental situation in which the researcher assigns participants to groups, but not randomly, because the experimenter cannot construct groups artificially. This will establish the cause-and-effect relationship among each criterion's variable sets.

In addition, the researcher employed a validated assessment instrument. This was participated by the grade ten learners of the aforementioned educational institution who have been selected on purpose. That will be evaluated using the proposed assessment tool.

Respondents and Sampling

This study's respondents are grade ten learners at Fernando Air Base Integrated National High School for SY 2022–2023. The scholar is in the same grade as the subject, which is advantageous for collecting the necessary data.

This study employed a method of purposive sampling to acquire data from a select group of participants. As per the (Ann Afr Surg, 2015) definition. Sampling is the process of selecting a smaller group of respondents to approximate the responses of a larger population if every member of the larger population were asked the same questions. To be more specific, this study will employ the purposive sample method, as defined in (J Res Nurs, 2020), which states that purposive sampling is used to select respondents who are most likely to yield appropriate and useful information and is a method for identifying and selecting cases that will make the most efficient use of limited research resources. This is a more precise and direct method of participant management for this study.

Instrument

A research instrument is a device used to collect information from respondents. This study employed the proposed evaluation instrument. A researcher-created evaluation instrument that is aligned with the research objectives. This assessment instrument has been validated and is intended to achieve its goals. This will help respondents determined the physical literacy of the students based on the variables listed below. Cognitive, affective, and psychomotor domains. In addition, this helped the researcher in distinguishing the level of physical literacy proficiency of the students as presented on the assessment instrument.

Data Gathering

Before administering the assessment instrument, the researcher requested permission from the authority. After receiving sanction from the research coordinator and school principal, the researcher conducted and facilitated the validation of the assessment instrument. Respondents will have one hour to access themselves and reflect on the queries provided.

In order to comply with the Department of Education's policy on no class interruption, it is difficult to provide respondents with a general orientation. Therefore, the assessment tool included a cover letter and instructional guide to assist respondents in answering the assessment tool. A prepared cover letter, guide, and assessment instrument will be distributed to each classroom. After the given time to the respondents the researcher will collect the assessment tool and prepare it for data analysis using the appropriate statistical tool.

Data Analysis

After the allotted time, the researcher will collect the assessment instrument and prepare it for data analysis using the appropriate statistical instrument.

The data obtained from the assessment instrument by the respondents were then tabulated, analyzed, and interpreted. In this investigation, the weighted mean will be utilized to determine the instrument's validity. In addition, the researcher will utilize Cronbach's alpha to evaluate the reliability.

In addition, the collected data will be analyzed and interpreted using the computer software Statistical Package for the Social Sciences (SPSS).

Ethical Considerations

The researcher will seek the approval of the respondent's parents or guardians through a parental consent form and will also consider the Data Privacy Act of 2012. The collected information will be treated confidentially and kept for validation purposes.

4. Results and Discussion

The accompanying discussions and tables will present the results of the proposed Physical Literacy Assessment Tool and Evaluation in Physical Education's validity and reliability.

1. Physical Literacy Assessment and Evaluation Instrument.

Each component consists of ten questions that assess the physical literacy of the learners and then classify them as developing, advanced, or proficient in accordance with the provided classifications. The assessment instrument is designed to determine the level of physical literacy proficiency of learners in the tenth grade of junior high school.

1.1 Cognitive Component

This component emphasizes the improvement of movement and physical activity-related learning and recognition. It includes teaching a person how, when, and why to move, as well as the benefits of movement and physical activity. This portion of the assessment covers the tenth-grade physical education content standard and the most important learning competencies. This section of the evaluation covers demonstrating comprehension of lifestyle and weight management. The Principles of Frequency, Intensity, Time, Type, and Active Recreation Various researchers include cognitive domain in their assessment of physical literacy, and according to (Shearer et al.,2021), physical literacy assessment tools include cognitive domain by incorporating the following indicators: sedentary behavior, safety considerations, reflection, creativity, and

imagination in the application of movement, and knowledge and understanding of tactics, rules, and strategy. This assessment instrument and evaluation will evaluate the cognitive component of the physical literacy of the students. The outcome of the assessment tool and evaluation will serve as a springboard for the teachers to devise a pedagogical approach tailored to the needs of the students based on their proficiency level and cognitive domain.

1.2 Affective Component

This component encompasses the evaluation of the learners' attitudes and values toward their classmates and teachers that were fostered during their PE classes, as well as the significance of physical literacy in everyday life. Through self-confidence and motivation, the affective domain has a significant impact on the development of physical literacy in learners. This section of the examination consists of ten multiple-choice questions based on a variety of circumstances encountered by students in physical education class. To evaluate the students, elements such as attitude, behavior, character, affective regulation, and value formation in relation to movement were highlighted. According to the research (Shearer et al., 2021), there are 32 physical assessment tools that encompass the affective domain. In addition, the physical literacy assessment identified a number of qualitative assessments, such as interviews, reflective diaries, and participant observation. An individual's physical literacy may be evaluated using an individualized, ipsative, or holistic assessment strategy. The inclusion of affective domain elements in this assessment instrument and evaluation is intended to differentiate the affective domain elements of the learners in relation to the development of their physical literacy. In addition, the assessment tool and evaluation will aid teachers in guiding students to develop the appropriate attitude, behavior, character, emotion, and values for coping with the numerous scenarios in physical education that have a significant impact on their physical literacy.

1.3 Psychomotor Component

This element includes the evaluation of the bodily aspects of learning. It addresses the body's movements, reflexes, and engagement during physical activity. This component can aid in the development of multiple psychomotor skills, perceptual abilities, and higher-order skills that require a combination of physical abilities to generate a movement. This assessment instrument encompasses the tenth-grade physical education performance standard and the most essential learning competencies. The evaluation instrument consists of ten queries covering the societal fitness of the learners, which circulates in the development and enrichment of the health-related physical fitness and skills-related physical fitness components. This assessment instrument and evaluation consider each student's physical literacy proficiency in relation to psychomotor skills. In addition, it assists the researcher in determining the fitness level of the students and serves as a catalyst for developing activities to assist the students in enhancing their respective health-related and skill-related components. According to (Longmuir et al. (2015), the physical competence of learners can be attained through active participation in a variety of health-related fitness and movement skills; their scores will be combined and identified based on the Canadian Agility and Movement Skill Assessment's predetermined standard. The evaluation instrument includes a criterion for evaluating the proficiency level of the students. It is divided into three categories. This level focuses on the development of motor skills and movement patterns as well as the application of concepts, principles, strategies, and tactics related to movement and performance. Learners at the advanced level demonstrate the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness and exhibit personal and social behaviors that respect themselves and others. At the highest level, proficient learners recognize the value of physical activity for health, enjoyment, challenge, self-expression, or social interaction.

The Physical Literacy Assessment Tool and Evaluation assists teachers in assessing the proficiency level of their students and serves as a springboard for developing activities tailored to their requirements. Through active participation in the provided learning activities, students can also enhance their physical literacy across the three domains. Physical literacy is the foundation for enduring physical activity participation, which is essential for maintaining and promoting health.

2. Validity and Reliability of the Physical Literacy Assessment Tool and Evaluation.

In every study, the validation of the assessment tool and evaluation are essential. It indicates the level of validity in accordance with the provided indicators, and it also indicates whether there are any items that need to be modified for improvement. Below is the four-point scale used to determine the level of validity of the proposed assessment instrument.

Scale	Verbal Interpretation
4	High Validity
3	Enough Validity
2	Low Validity
1	Invalid

On this study the researcher utilized the following indicators to validate the proposed assessment tool

Table 2.1
Level of Validity of the Physical Literacy
Assessment and Evaluation Tool

Table 2.1 presents the level of validity of the test covering the five indicators. It presents that the needed standards, congruency and complexity in the assessment tool and evaluation encompassing to the established components were achieved.

Indicators	Mean	Verbal Interpretation
Identification of the Standard	4.00	High Validity
Validity and Alignment of Standard	3.90	High Validity
Clarity	3.60	High Validity
Fairness and Equity	3.70	High Validity
Preparation and Administration Consideration	4.00	High Validity
Weighted Mean	3.84	High Validity

In addition, the assessment instructions were clear and accommodated the diverse requirements of the students. And finally, the researcher administered the evaluation in a structured manner and completed it within a specified time frame. According to (Ghazali NH., 2016), an instrument is valid if it measures what it is intended to measure. In other words, when an instrument accurately measures a prescribed variable, it is deemed valid for that variable. In this research, content validity was employed, and they are examining the content of items to determine if they accurately measure the concept being measured.

Table 2.2

Result of the Pilot Testing of the Physical Literacy Assessment Tool and Evaluation.

Table 2.2 reveals the result of the conducted reliability test, and the level of consistency achieved is acceptable.

Cronbach's Alpha	No of Items
.757	30

For study results to be convincing, the proposed assessment instrument and evaluation must be both reliable and valid. According to (Young et al., 2021), the physical literacy assessment instrument and evaluation acknowledge the importance of cognitive, affective, and psychomotor components. The assessment tool and evaluation should include robust characteristics such as usability, reliability, standardization, practicability, and framing that directly address the requirements of the learners in accordance with the curriculum's set standard.

5. Conclusions and Recommendations

After conducting research, this study highlights the significance of physical literacy in the educational process and the holistic development of students. This study investigates the significance of a developed assessment instrument that assists teachers in determining the physical literacy proficiency level of students.

This investigation reaches the following conclusion:

1. The proposed assessment tool and evaluation, comprising cognitive, affective, and psychomotor domains, can be used to assess the learner's physical literacy proficiency level.
2. The proposed assessment instrument and evaluation are valid and reliable and can serve as a reference for teachers to discuss and contextualize learning activities to meet the requirements of the students.

To further improve the delivery of physical education in order to increase the physical literacy of students in all three domains. This research suggests the following:

1. Formulate an assessment instrument and evaluation for physical literacy at the school level.
2. Integrate the assessment instrument and evaluation into the Physical Fitness Test procedure.
3. Perform quarterly evaluations based on the content and performance standards.

References

- Campbell S, Greenwood M, Prior S, Shearer T, Walkem K, Young S, Bywaters D, Walker K. Purposive sampling: complex or simple? Research case examples. *J Res Nurs*. 2020 Dec;25(8):652-661. doi: 10.1177/1744987120927206. Epub 2020 Jun 18. PMID: 34394687; PMCID: PMC7932468.
- Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., et al. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nat. Hum. Behav.* 4, 460–471. doi: 10.1038/s41562-020-0884-z

- Bentlage, E., Ammar, A., How, D., Ahmed, M., Trabelsi, K., Chtourou, H., et al. (2020). Practical Recommendations for Maintaining Active Lifestyle during the COVID-19 Pandemic: A Systematic Literature Review. *Int. J. Environ. Res. Publ. Health* 17:6265. doi: 10.3390/ijerph17176265
- Fletcher, A. (2014) *A Short Guide to Holistic Youth Development*. Olympia, WA: The Freechild Project.
- Lundvall S (2015) Physical literacy in the field of physical education—A challenge and a possibility. *Journal of Sport and Health Science* 4: 113–118.
- Kaur H, Singh T, Arya YK and Mittal S (2020) Physical Fitness and Exercise During the COVID-19 Pandemic: A Qualitative Enquiry. *Front. Psychol.* 11:590172. doi: 10.3389/fpsyg.2020.590172
- Roetert EP, Jefferies SC (2014) Embracing physical literacy. *Journal of Physical Education, Recreation and Dance* 85: 38–40
- Sum RKW, Ha ASC, Cheng CF, Chung PK, Yiu KTC, Kuo CC, et al. (2016) Construction and Validation of a Perceived Physical Literacy Instrument for Physical Education Teachers. *PLoS ONE* 11(5): e0155610. doi:10.1371/journal.pone.0155610
- Tan, L. (2014). Correlational study. In W. F. Thompson (Ed.), *Music in the social and behavioral sciences: An encyclopedia* (pp. 269–271). Thousand Oaks: SAGE Publications.
- Vivian C. Silva, 2021, *School Learning Action Cell as a Key for Teacher's Continuous Learning and Development*
- Zekihan hazar, Muhsin Hazar 2018, Effect of Games Including Physical Activity on Digital Game Addiction of 11-14 Age Group Middle-School Students doi:10.11114/jets.v6i11.3645
- K to 12 Physical Education Curriculum Guide May 2016