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Development and Validation of Motivation Scale in Physical Education for Filipino Students (MPEFS)

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ABSTRACT

The purpose of this study was to develop and validate a motivation scale in physical education for Filipino students (MPEFS) among college in the tertiary schools in Davao Oriental. The study employed a quantitative research design specifically an empirical survey approach. Data utilized in this study were gathered through adapted questionnaires. Construct validity indices, exploratory factor analysis, confirmatory factor analysis, mean, and standard deviation were the statistical tools used in this study. Exploratory factor analysis (EFA) was used to code and analyze the participants' answers to the checklist that were encoded and analyzed. This analysis revealed five key dimensions: This analysis revealed seven key dimensions: Intrinsic Motivation, Amotivation, Social Relatedness, Percieve Competence, Competence Support, Controlled Motivation, Percieve Value of Pe. This structure was a better-fitting model and parsimonious using confirmatory factor analysis (CFA) and other test indices. An EFA was done to make sure it had the right final dimensions, that the items were correctly assigned to their factors, and that the factor models were a good fit. Finally, we conducted reliability tests to verify the validity of the results related to the respondents' Motivation in PE class. Results revealed a multidimensional structure reflecting both intrinsic and extrinsic motivational components, demonstrating strong psychometric properties such as high reliability, construct validity, and internal consistency. These findings support the scale's effectiveness in measuring motivation among Filipino students in physical education settings.

Keywords: Physical education, Filipino P.e students, motivation scale, Philippines.

CHAPTER 1 INTRODUCTION

Background of the Study

Motivation scale is a standardized assessment tool used to determine the underlying causes of a particular behavioral behavior. It underlines the possible purposes of the activity by producing scores on several subscales, offering important insights on the causes and motivations of the observed behaviors (Haim 2019). Decreased student motivation as a result of delayed visibility of learning results is the most troublesome problem in physical education, since it impedes engagement and long-term participation. The Motivation Scale is one tool that can be used to discover behavioral factors, but it doesn't directly address the main issue, which is that students frequently don't recognize the immediate relevance or advantages of physical education activities (Haim, 2019). When improvement in critical abilities like coordination, collaboration, and physical fitness takes longer to materialize, this lack of immediate pleasure results in less effort and enthusiasm and Many students become disengaged as a

result, which makes it more challenging for teachers to provide instruction that is both relevant and effective (Teraoka et al., 2023).

There are certain problems with the current tools used to measure motivation in physical education (PE) in the Philippines, especially with regard to methodological limits, cultural relevance, and practical application Salanga and Bernardo (2019). Additionally, the majority of these resources depend on Western theories, including expectancy theory, achievement goal theory, and self-determination, which might not adequately represent the distinct cultural background, beliefs, and experiences of Filipino students and the precision and efficacy of motivation tests conducted locally may be impacted by this discrepancy (Bernardo & Nalipay, 2016).

Nationally, The Motivational Climate in Physical Education Scale, widely used in the United States, is grounded in a solid theoretical framework that integrates task- and ego-oriented climates along with autonomy and social relatedness to assess student motivation, however, a problematic issue arises from the scale's limited capacity to capture the complex, dynamic interactions between these motivational components in diverse and changing educational contexts (Soini et al., 2014). Additionally, The Physical Education Autonomy, Relatedness, and Competence Scale (PE-ARCS) is a useful instrument at the University of Alberta for evaluating the psychological needs that support physical education students' motivation. The PE-ARCS's limited use outside of research settings is a serious issue. Its potential influence is limited because its use is not yet completely incorporated into regular school operations (Basset et al., 2016).

Globally, Basic Psychological Needs Satisfaction Scale (BPNES), as applied in the Philippine context, is its limited ability to capture the broader motivational climate within physical education settings. This creates a problem in understanding how social and instructional factors influence student motivation and engagement in PE. Without integrating environmental and cultural influences into the assessment, the BPNES alone cannot provide a complete picture of what drives or hinders students' long-term participation in physical activity, limiting its usefulness for developing targeted and culturally relevant interventions. (Deci & Ryan 2020). Moreover, the Attitudes Towards Physical Education Scale (ATPE) by Kenyon (1968), the Expectancy Values Questionnaire by Eccles et al. (1983), and the 2000 instrument for evaluating task- and ego-oriented climate are all lacking an updated and integrated framework that reflects the interconnectedness of student attitudes, expectancy-value beliefs, and motivational climate in modern physical education settings. "The troublesome
problem of limited effectiveness in comprehending and improving students' long-term participation in physical exercise is supported by this disjointed approach, particularly in various educational and cultural contexts like the Philippines.

Locally, Students Motivation Scale is a clear connection between the identified motivation constructs boosters (adaptive) and guzzlers (less adaptive) and the specific contextual factors within physical education settings that influence student motivation. While the scale effectively categorizes different types of motivation, it does not incorporate how environmental elements, such as teacher behavior, peer dynamics, or cultural influences, interact with these motivational factors and this supports the problematic issue that without considering the situational and social contexts in which motivation occurs, the scale alone cannot fully explain or predict students' engagement and persistence in physical activity, limiting its practical application for designing targeted interventions in local physical education programs. (Martin 2025). Also, Situational Motivation Scale (SIMS) is its omission of important motivational dimensions such as introjected and integrated regulation, which are key to understanding

the full continuum of self-determined motivation. While SIMS effectively measures intrinsic motivation, identified regulation, external regulation, and amotivation, its brevity comes at the cost of excluding these nuanced forms of internalized motivation that influence how students internalize and value physical education activities. This limitation supports the problematic issue that, without capturing the complete range of motivational regulations, SIMS may provide an incomplete picture of student motivation, making it difficult for educators to fully assess and foster sustained engagement and positive behavioral outcomes in physical education settings (Vallerand & Blanchard 2020).

The development and validation of the Motivation for Physical Education for Filipino Students Scale (MPEFS) holds significant social value by promoting the holistic well-being and academic engagement of Filipino students. By addressing the declining motivation to participate in physical education, this study contributes to fostering a culture of active living, resilience, and self-discipline among Filipino youth, which are critical to building a healthier and more productive society.

Although well-established theories such as Self-Determination Theory, Achievement Goal Theory, and Expectancy-Value Theory have been extensively used to assess student motivation in physical education, they were primarily developed within Western cultural frameworks. As a result, existing motivation scales derived from these theories may not fully reflect the cultural, social, and educational nuances specific to Filipino students such as strong family-oriented goals, collective community values, and unique cultural perceptions of physical activity. Furthermore, there is limited research exploring how these theories align with the specific learning outcomes of the Philippine physical education curriculum. Without a culturally contextualized and locally validated motivation scale, there is a significant risk of inaccurately assessing students' engagement and motivation. This could lead to ineffective interventions and contribute to the continued decline in participation and performance in physical education across the country. Therefore, there is a critical need to develop and validate a motivation scale that is specifically tailored to the Filipino context.

The outcome of this study will be disseminated to the greater public through a research forum locally, national or internationally. It will also be subjected to publication in a peer-reviewed journal hoping to help a wider population, especially in the fitness industry, with the intention of giving reliable data as the basis for the program in different sections of the community.

Statement of the Problem

The purpose of this study was to develop a motivation scale specifically designed for Filipino students in physical education. By identifying and validating the key dimensions of motivation based on available literature and analyzing the scale's accuracy, reliability, validity, and participant satisfaction, this research seeks to provide a culturally relevant and evidence-based tool and methods, using quantitative correlational methods that will support educators in enhancing student motivation and improving outcomes in physical education programs. Specifically, it will answer the following questions:

1. What are the underlying dimensions of the respondent's motivation for physical education based on the literature.
2. Do the dimensions of motivation to physical education exhibit parsimonious fit?
3. What is the reliability of the developed scale of motivation in physical education?
4. Based on the analysis results, what measurement tool is suitable for assessing the motivation for physical education of the respondents.

Review of Related Literature

This chapter provides a review of relevant literature and studies conducted both internationally and in the Philippines. These resources have been examined by the researcher to inform and guide the development of the study.

The MPEFS equips PE teachers with evidence-based tools to assess student motivation accurately, allowing for tailored teaching strategies that enhance student engagement and participation. This initiative not only supports students' physical health but also cultivates life skills such as teamwork, perseverance, and a sense of community values that resonate deeply with Filipino cultural ideals. Furthermore, the study's findings may guide the formulation of education policies and programs aimed at improving the quality of physical education in the Philippines. These contributions have the potential to inspire systemic changes that prioritize students' physical and mental well-being, thereby empowering future generations to lead healthier, more balanced lives while positively impacting societal health outcomes.

Motivation

Motivation is one of the essential factors for implementing physical education in the school environment. One of the supporting factors in the implementation of a good physical education class is the motivation of students for following the entire learning process (Chen et al., 2014).

Motivation is one of the essential factors for implementing physical education in the school environment. One of the supporting factors in the implementation of a good physical education class is the motivation of students to follow the entire learning process (Chen et al., 2014). Motivation is related to a psychological construct in which a person is driven or directed by strengthening actions to achieve desired goals (Bice et., al 2016).

Motivation is the driving force of human behavior as well as a determinant of behavior. Motivation in students is divided into intrinsic and extrinsic motivation (Cortés et al., 2017). Additionally, motivation is an integral component of human experience. Children spontaneously explore novel items, and adults autonomously engage in new hobbies, even in the absence of clear extrinsic reinforcers. Thus, not all actions are driven by tangible external stimuli or outcomes. known as extrinsic motivation, but are driven by more internal drivers, known as intrinsic motivation, where the activity is Perceived as its own outcome Morris et al. (2021).

Intrinsic Motivation. A person obtains self-satisfaction based on recognition and social status. Intrinsic motivation is related to the encouragement of individual interest in self-interest for pleasure in learning González-Valero et al. (2019), but extrinsic motivation is more related to the encouragement of other individuals who are involved in an activity (Afzal & Ali, 2010). However, some experts also divide the motivation category into five categories, namely intrinsic motivation, identified regulation, introduced regulation, external regulation, and amotivation (Ryan & Deci, 2020).

Additionally, intrinsically motivated behaviors are computationally similar to extrinsically motivated behaviors in that they strive to maximize goal attainment and minimize punishment, represented mathematically as value and effort cost functions, respectively (Gottlieb et. al., 2016). Students Enjoyment of physical activity is positively associated with their participation level, especially in college students, in supportive environments characterized by encouragement from peers, parents and educators, and positive experience in physical education can instill a lifelong appreciation for an active lifestyle (Dischman, 2019).

Motivational Climates in physical education play a vital role in enhancing students participation and when the environment is supportive and encouraging, students are more likely to participate in PE class and A positive motivational climate fosters a sense of belonging and reduces anxiety; it allows students to focus on their own progress and improve their participation in any physical activities. Chang et al., 2016). Additionally, Motivational climate of physical education classes is crucial in determining whether students will continue to perform the movement skills they learned in activities outside of class Duliesco and Cagas (2016).

According to Wagner (2024), Physical education in schools are far-reaching, including both increased student physical health and better academic performance and By promoting physical education (P.E.) in schools, educators are in a prime position to help students establish life-long healthy behavior patterns and boost scholastic success. Additionally, Ramsey (2024) added that students who are physically active get better grades. These students also perform better on standardized tests and have higher graduation rates. A positive classroom environment can foster social motivation by encouraging student collaboration and communication, whereas strong social motivation can result in a more dynamic and interactive classroom setting. In a study conducted by Chue and Nie (2016) in which they compared international students' motivation and learning approaches to those of local students.

*Extrinsic Motivation***.** Extrinsic motivation is the drive to perform and succeed for the sake of obtaining a separate outcome. Essentially, it refers to action driven by external rewards such as money, praise, or fame, rather than internal satisfaction. This type of motivation arises from outside the individual, as opposed to intrinsic motivation, which involves doing something for its inherent satisfaction Moret (2024). Extrinsic motivation is motivation that comes from outside oneself. Examples include doing something for financial gain, promotion, praise or approval, or to win a competition Villenes (2023).

Motivation is a condition where individuals have a low level of motivation, so the lower the motivation of an individual, the lower the motivation to carry out activities (Shen et al., 2010). Forms of motivation include a lack of achievement of the expected competencies, being less valuable, and being irrelevant to the learning process (Ryan & Deci, 2020). Additionally, amotivated learners remain passive in class, display fake classroom engagement, or just continue with the task without deep engagement (Cheon and Reeve, 2015), do not follow classroom instructions, and barely show any kind of adherence to it (Terrier et al., 2018).

Rewarding students for physical activity and fitness participation is likely an effective approach. For some students, the encouragement to participate, practice and learn additional content at home and/or in the community may be the ingredient needed for continued success. Kelley and Heidorn (2022). Rewards which are less predictable may be more effective:

habits form best when rewards are powerful enough to motivate behavior but are uncertain in the sense that they do not always occur Wood and Neal (2016).One important psychological concept that motivates people to set, maintain, and accomplish goals is motivation. It affects behavior in a variety of areas, including education. Based on theories like Expectancy Value Theory, Achievement Goal Theory, and Self-Determination Theory, motivation is frequently divided into extrinsic and intrinsic forms, which represent rewards from outside sources and internal desires, respectively. Motivation has a big influence on students' performance, engagement, and overall educational experiences. However, cultural, social, and individual aspects influence motivation, which is not a universal idea. As a result, comprehending and assessing motivation calls for a sophisticated strategy that takes into account the distinct traits and circumstances of students, especially in culturally varied environments like the

Philippines. Teachers and researchers may create environments that promote meaningful participation and engagement by recognizing and addressing these variables.

Amotivation. Students who lack desire to engage in physical education programs because they do not understand the value, feel unable, or believe that involvement will not yield any significant results are said to be amotivated (Vasconcellos, 2021). Academic involvement is inversely correlated with amotivation. According to the study, students are more likely to get amotivated and participate less in physical education classes when they believe that their core psychological needs autonomy, competence, and novelty are not being addressed (López-García et al.2023). Additionally, sytematic review highlighted that students' behaviors focusing excessively on performance can thwart students' sense of competence, thereby promoting amotivation. Additionally,it is defined as a state where students lack the intention to engage in physical education activities because they do not perceive a connection between their actions and the outcomes. This absence of motivation can stem from feelings of incompetence, a lack of value in the activity, or a belief that their efforts will not lead to desired results (Shen et al.2023).

Demotivated implies an external influence has led to a decrease in someone's motivation, affecting their enthusiasm or drive towards activities or goals and generally it refers to an inherent absence of motivation, where there's little to no desire or interest in pursuing activities, goals, or tasks from the start. This lack of motivation doesn't necessarily stem from external influences but rather from within the individual (Liaquat 2024).Moreover,demotivation can often be addressed by altering the external factors causing the decrease in drive, addressing unmotivation might require more introspective approaches to discover or foster interests and goals within an individual (ARIF 2024).

Social Relatedness

Social relatedness is defined as the feeling of being connected to others in a social context. In the PE setting, this translates to students feeling accepted, respected, and supported by both their classmates and instructors. When these social bonds are strong, students are more likely to engage enthusiastically in physical activities, collaborate effectively, and experience enjoyment in the class (Ryan & DEci 2022).The function of relatedness need fulfillment in physical education classes in secondary schools. Higher levels of intrinsic motivation and engagement in physical education classes were observed by the researchers in children who felt a sense of belonging to both their teachers and classmates Xiang et al. (2017).

Perceive Competence.

Perceive competence as an individual's belief in their own ability in various achievement domains. The study emphasizes that students with higher perceived competence are more likely to participate in physical activities both during school and in their leisure time. Conversely, those with lower perceived competence may experience negative feelings, leading to reduced participation and enjoyment in PE classes (Guan Et.al 2023). Additionally,perceived physical competence is described as "the students' own assessment of their ability to accomplish different tasks in given domains such as school, sport, or physical activity." The study highlights that students with higher perceived competence are more likely to experience increased enjoyment and reduced anxiety during PE lessons (Huhtiniemi et al.2022).

Perceived competence is described as "students' sense that they are capable in a particular domain." Their study emphasizes that students with higher perceived competence are more likely to participate in physical activities both during school and in their leisure time. Conversely, those with lower perceived

competence may experience negative feelings, leading to reduced participation and enjoyment in PE classes Liu, Yan, and Li (2025). Moreover, perceived competence is a type of self-perception that reflects students' belief in their ability within a specific area. A substantial body of research highlights the importance of perceived academic competence in promoting positive outcomes for students (Ahn et. Al, 2022).

Competence Support

The competence in PE is an assessment of a person's ability to lead a physically active lifestyle (Pavlova et. al 2020). Additionally, this competency is an assessment of a person's ability to lead a physically active lifestyle. Experts define competence in PE as motivation and confidence, knowledge and understanding of the theory in the field of PE in an amount sufficient to appreciate and take responsibility for engaging in physical exercises throughout life (Keegan et al., 2019).

Competence Support can be interpreted as a set of human properties that one acquires in the process of PE and which can be expressed in the individual's active work aimed at comprehensively improving one's physical nature and leading a healthy lifestyle (Tremblay & Lloyd, 2019).

Controlled Motivation

Controlled motivation refers to engaging in physical activities due to external pressures or obligations rather than personal choice or interest and participate in activities to meet external expectations or to avoid negative feelings, rather than for the inherent enjoyment of the activity (Shen,2019).

Controlled motivation is a type of motivation that occurs when your actions are driven by external pressures or internal obligations rather than personal interest or genuine value (Ryan 2020).

Perceive Value of PE

Perceptions of PE's value were examined. Teachers recognized PE's contribution to students' physical well-being, social skills, and overall development, emphasizing the importance of PE in the holistic education of students Deng & Legge (2022). Additionally, perceived value of PE was associated with increased positive emotions and decreased negative emotions. This suggests that enhancing the value students place on PE can improve their emotional experiences in class Ceylan & Simonton (2025).

Perceived benefits of PE positively influenced students' adjustment to university life, highlighting the role of PE in supporting students' well-being and social integration Nishida et al. (2019).

Theoretical Framework

This study is based on the theories of the development and validation of motivation in physical education for Filipinos (MPEFS) that are multifaceted and can be understood through various theoretical frameworks, particularly self-determination theory (SDT). This study utilized a quantitative research design, specifically a self-determination theory by Deci & Ryan (2000), which distinguished autonomous forms of motivation from control in terms of degrees of self-determined motivation. This distinction is often viewed on a continuum reflecting the cause of an individual's motivated behavior in a given context (Ryan & Connell, 1989). Theories will guide the objectives of this study. According to SDT, three fundamental psychological needs are critical for fostering motivation and well-being: competence, relatedness, and autonomy. Competence refers to the belief in one's ability to perform tasks effectively; relatedness involves feeling connected to others; and autonomy is the perception of being the

initiator of one's actions. The fulfillment of these needs is essential for enhancing intrinsic motivation among students in PE classes.

The motivational factors for Filipino students in physical education are deeply rooted in the fulfillment of basic psychological needs as outlined by self-determination theory. The role of teachers, gender dynamics, and the nature of the curriculum all contribute significantly to shaping these motivational factors. Understanding these elements can help educators design more effective PE programs that foster greater student engagement and promote lifelong physical activity.

An additional theory that will support this study is that basic psychological needs autonomy, competence, and relatedness are essential for optimal human well-being. Basic Psychological Need Theory highlights the importance of autonomy, competence, and relatedness as fundamental drivers of human behavior and motivation. Understanding these needs can help educators, employers, and individuals create environments that foster fulfillment and enhance overall well-being. This framework is particularly relevant in educational settings where motivating students is essential for effective learning outcomes

CHAPTER 2
METHODOLOGY

Presented in this chapter are the discussion of research design, research locale respondents of the study, research instruments, data gathering procedure, statistical tools used in the analysis of data, and ethical considerations are found.

Research Design

This study used a quantitative research design using empirical survey approach in tool development. Quantitative research is defined as research which focuses on numerical data and objective analysis, allowing for a systematic investigation of relationships among variables (Creswell, 2014). This form of research places a strong emphasis on numerical and immutable facts as well as precise, convergent reasoning. The main aspects of a quantitative research design are that the data is typically collected using structured research tools, the findings are typically based on larger samples that are representative of the population, and the research study can typically be replicated or repeated due to its high reliability. The overarching aim of a quantitative research study is to classify features, count them, and construct statistical models to explain what is observed (Milgram, 2008).

Further, Empirical survey approach is a research method that collects data directly from individuals or groups to gain insights into behaviors, attitudes, perceptions, or experiences. It relies on firsthand data, typically gathered through tools like questionnaires, interviews, or structured surveys. This method is often used in social sciences, business, and health research to provide evidence-based findings about a specific phenomenon Groves et al. (2009).

This study utilized a quantitative research design, specifically a self-determination theory by Deci & Ryan (2000), which distinguished autonomous forms of motivation from control in terms of degrees of self-determined motivation. This distinction is often viewed on a continuum reflecting the cause of an individual's motivated behavior in a given context (Ryan & Connell, 1989). The theory, which has been 40 years in the making, assumes that all students, regardless of age, gender, socioeconomic status, nationality, or cultural background, possess inherent growth tendencies. Self-determination theory is unique in that it emphasizes the instructional task of vitalizing students' inner motivational resources as

the key step in facilitating high-quality engagement Reeve & Halusic (2009).
The survey questionnaire for this investigation was a research-made survey questionnaire acquired from the results of the pieces of literature, and related studies. Before the data collection was conducted, the researcher submitted the final survey questionnaire to the expert validators and was subjected to review and corrections. After the review and validation by the expert validators, the survey questionnaire undergoes expert validation by the external validator. Statistical Tools: The following statistical tools were used in interpreting the data collected: This will be used to determine the factors of students' attitudes toward learning social studies. After the analysis, the researcher looked at each item belonging to a particular factor to see if it was suited. The item that is not valid will be deleted.

Research Locale

Figure 2 depicts the research locale of the study. The survey was conducted in Mati City in one of the largest tertiary schools in Davao Oriental in

Figure 2 Maps of the Philippines and Mati City

terms of student population. This study was conducted in major schools across Davao Oriental, with a particular focus on one university and its three extension campuses. The first campus, Campus A, is situated in the Municipality of Banaybanay, Davao Oriental, and has an approximate student population of 1,200, provides educational opportunities with programs such as Bachelor of Technology and Livelihood Education, Bachelor of Science in Information Technology, Bachelor of Science in Agriculture, and Bachelor of Science in Business Administration. The second campus, Campus B, is located in San Isidro, Davao Oriental, with around 1,100 students and offers four programs: Bachelor of Science in Business Administration, Bachelor of Science in Agriculture, Bachelor of Science in Criminology, and Bachelor of Elementary Education-Generalist. Lastly, Campus C is located in Mati City, Davao Oriental and has the largest student population, estimated at 10,000, offering a diverse range of academic programs including Education, Engineering, Criminology, Hospitality Management, Development Communication, Nursing, Agriculture, Business Administration, Information Technology, and Political Science, serving as a central hub with a significant student population. aiming to explore and analyze specific educational practices and outcomes within these diverse environments. The geographical setting of Mati City, bordered by the Pacific Ocean and characterized by its mountainous terrain, presents both opportunities and challenges for high school Filipino students in their participation in physical education class and their motivational factors.

In particular, the research local was chosen because the selected schools are situated in the locale. Also, the selected schools in the local provided adequate sample of college students who were enrolled in P.E subject and needed as respondents for the study. Moreover, the research local have different cultural and ethnic backgrounds of college students which fit best to study.

Respondents of the Study

Respondents were subject to the study if they have complied with the following inclusion criteria: must be a College student; from schools in the City of Mati ; and volunteer to participate in the study; have materials at home such as smartphones, laptops/personal computers, and the internet; and provide valid informed consent and assent forms. The study's respondents were college students officially enrolled for the school year 2024-2025. Random sampling is selecting a sample so that all individuals in the defined population have an equal and independent chance of selection for the sample. The researcher ensured that only accurate data are reported with complete honesty. The participant was required to notify the researcher of his or her intention to withdraw from the study. Participants could tell the researcher why they were leaving the study, but they were not required to do so.

Actual survey processes and rules were presented to the participants and their parents for confirmation and approval. The researcher also ensured that only accurate data were reported with full honesty. A participant in this research who withdrew could leave at any moment. The participant was required to notify the researcher of his or her intention to withdraw from the study. A participant could tell the researcher why they were leaving the study, but they were not required to do so. In deciding whether or not to participate in the study, they were guaranteed the right to make their own decision. The researchers did not force the learners to participate.

The exclusion criteria were as follows: students who were not enrolled in physical education class. there were 200 college students who answered the questionnaire, five were excluded because of the missing responses. By adhering to these criteria, the study aimed to gather relevant data from a well-defined group of college student who could provide insights into their experiences and motivations. In

conducting Exploratory Factor Analysis, the respondents were composed of 50–100 participants, supported by Watkins (2018), who stated that exploratory factor analysis (EFA) is a form of multivariate statistical method that aims to determine the minimum number of assumptions such as factors, dimensions, and variables that can sufficiently explain the covariation observed among a set of measured variables

Thus, the distribution based on retrieved questionnaires from the college-athlete students who signed the Informed Consent Form (ICF) voluntarily, and willingly answered the survey questionnaire were as follows: School A – 100, School B – 50, and School C – 50.

Also, considering that college Filipino students may be a vulnerable population, the researcher ensured that participation was entirely voluntary, with participants fully informed about the purpose, procedures, and any potential risks of the study. To address this ethical issue, respondents were explicitly informed of their right to withdraw from the study at any time without repercussions to their academic, ensuring their autonomy and ethical treatment throughout the research process.

Research Instrument

Research instruments were designed tools that aided data collection for analysis. Researchers developed these tools to achieve their stated objectives when carrying out a research study. To gather the data, this study adapted a questionnaire from the available literature. The survey questionnaire, initially consisting of 58 items identified in the earlier phase**.** The questionnaire was subjected to Exploratory Factor Analysis (EFA), the EFA was crucial for identifying the underlying dimensions of commitment, grouping related items into distinct factors that reflected specific constructs of motivation scale. This analysis also allowed for the removal of redundant or weak items, enhancing the tool's focus and reliability.

After EFA, the refined 58-item scale was subjected to Confirmatory Factor Analysis (CFA). The CFA validated the structure and relationships identified during EFA, ensuring that the dimensions of commitment were statistically sound and consistent with the theoretical framework. CFA also tested the model fit, confirming the reliability and validity of the scale. This rigorous process established a robust and reliable measurement tool, highlighting the significance in achieving the study's objectives.

To ensure the validity and reliability of the self-constructed instrument, the researcher utilized the content validity ratio (CVR) method. This method is a widely recognized quantitative technique for evaluating the content validity of a survey or test. A panel of ten subject matter experts, selected based on their experience and expertise in education, psychology, and survey development, was convened to assess the questionnaire. Each expert reviewed the individual items in the survey to determine their relevance, clarity, and appropriateness in measuring the intended variables. The feedback and ratings provided by the experts were analyzed using the CVR method, allowing the researcher to refine and validate the questionnaire further.

Furthermore, Content validity ensures that the instrument comprehensively represents the construct it aims to measure, evaluating whether all aspects of the concept are adequately covered (Haynes et al., 1995). Construct validity focuses on whether the test accurately measures the theoretical construct it claims to assess, aligning the instrument with its underlying theoretical framework (Cronbach & Meehl, 1955). Together, these aspects form the foundation for creating robust and effective measurement tools.

The researcher employed a checklist based on the central concepts derived from the themes generated. Students used this checklist for factor analysis, including exploratory factor analysis (EFA) and

confirmatory factor analysis (CFA). The outcomes of these analyses served as the basis for developing an attitude survey questionnaire regarding Philippine folk dances. This survey questionnaire seeks to confirm and validate the critical themes identified during the IDI and FGD, focusing on development and validation of motivation scale in physical education for Filipino students.

The EFA and CFA checklists and surveys served as the appropriate measurement tools for data collection, ensuring the reliability and precision of the quantitative findings. Through field-specific expert consultation, these measurement tools' validity, credibility, and reliability were further assured and strengthened.

This research aimed to gain valuable insights into the dimensions and variations of development and validation of motivation scale in physical education for Filipino students by employing a comprehensive quantitative methodology. Utilizing well-designed and validated measurement instruments ensures the validity and reliability of the collected data, which contributes to a thorough understanding of cultural appreciation and identity among college students in Mati city.

Through this meticulous validation process, the researcher minimized potential biases and improved the survey instrument's capacity to precisely capture the motivating elements influencing college students by ensuring that it was trustworthy and resilient through this painful validation process.

Data Gathering Procedures

The procedures were performed by collecting the data and discussing it.

There was a set of procedures that were followed in gathering the data. The researcher sent a letter to the University of the Immaculate Conception (UIC) Dean of the Graduate School asking for permission to conduct the study. After the permission letter was approved, the researcher formally requested ethical clearance from the UIC Research Ethics Committee before giving the study's target respondents the instruments. After ethical clearance was released by the UIC REC and permission was obtained from the dean, the researcher forwarded the letters and other documents to the school division superintendent to formally request permission to conduct the study. The target respondents were formally informed about their participation in the study. The objectives of the study and their important role in the research were explained to them. It was also emphasized to the respondents that their participation was not compulsory.

For the Confirmatory Factor Analysis, the respondents were composed of 200 participants, and for determining reliability, the respondents were composed of 30–50 participants. The questionnaires were administered to college students in Mati City and were answered within twenty to thirty minutes at the school campus. The administered questionnaires were retrieved right after they had answered the questionnaire.

In adherence to the Data Privacy Act of 2012, all data collected were coded to ensure anonymity, and strict protocols were followed for sharing, storage, and disposal of data. The responses to the items of the questionnaires by the teachers were kept with confidentiality. The data were then encoded, tabulated, analyzed, interpreted, and determined, generating new knowledge that gave essence to the investigation.

Statistical Treatment

The gathered data were classified, analyzed, and interpreted using the appropriate statistical treatment as follows:

CVI. Construct Validity Indices. Construct validity refers to the extent to which a test or measurement

accurately represents the theoretical construct it is designed to measure. This involves examining whether the test behaves as expected according to the underlying theory.

Exploratory Factor Analysis (EFA). This helped in identifying latent constructs that explained the correlations among observed variables. This was essential in developing measurement instruments, such as surveys and questionnaires.

Confirmatory Factor Analysis (CFA). Researchers specify the number of factors and which observed variables load onto each factor, allowing for a structured approach to understanding data

Mean. This was used to determine the motivational factors of Filipino students in physical education class among college students in Mati City.

Standard Deviation: This statistic was employed to measure the variability of responses regarding motivational factors of Filipino students in physical education class. A low standard deviation indicated that most students' responses were clustered around the mean, while a high standard deviation suggested a wider range of experiences and perceptions among the participants.

Scree Plot: Is a graphical tool used in factor analysis or principal component analysis (PCA) to help determine the number of factors or components to retain.

Promax: is a rotation method used in exploratory factor analysis (EFA) when you expect that the underlying factors are correlated.

Cronbach's alpha: is a measure of internal consistency or reliability of a scale or questionnaire. It tells you how well the items in a test measure the same underlying construct**.**

Ethical Considerations

Hence, this research protocol was subjected to a thorough review by the UIC-REC.

Social Value. The specific situation of the social problem in this study is carefully analyzed to come up with a valuable solution. This study is very important to society, especially for public school teachers, because of the arising stress and social-emotional problems. The study will help to determine how teachers motivate themselves to participate in physical activity and react to stress positively and increase the level of social-emotional competence. Thus, the researcher will disseminate the results to school administrators or school principals to create a strategic plan to enhance motivation to physical activity. It will be done through the School Learning Action Cell (LAC).

Informed Consent. After the school principals authorized the researcher to conduct the study, the respondents of the study were given an informed consent form alongside the research questionnaire. In respect to the participants of the study, the researcher ensured that the informed consent was secured. The researcher explained the objectives of the study and gave time to the respondents to fill out the consent form prior to the distribution of the research instruments. The ICF contains the purpose, study procedures, potential risks and discomforts, data privacy and confidentiality, the voluntariness of respondents and rights to withdraw from the research, reimbursement, and rights to research respondents. Once the respondents signed the ICF, the researcher gave the research instrument.

Risk, Benefits, and Safety. The researcher ensured that there was no physical or psychological harm to the respondents throughout the study. Possible uneasiness or discomfort experienced by the respondent's while answering the research questionnaire. To minimize this, the respondents were given time to take a rest and can withdraw from the research study anytime. Thus, the researcher was also implementing the virtual collection of data to minimize the risk. On the other hand, the respondents of this study will benefit from the outcome of the study. Moreover, the public will be informed of its

outcomes through the publication of the study online; thus, this study may be utilized by other researchers as a reference in their pursuit to address the existing problem. For the safety of the researcher, the implementation of the online survey was used and considered to finish this research study. To the academia, findings added valuable information that will serve as the basis for enhancing curriculum, school activity and wellness programs.

Privacy and Confidentiality of Information. In this study, the researcher adhered to the principles of transparency, legitimate purpose, and proportionality in the collection, retention, and processing of personal information (Data Privacy Act of 2012). Hence, it is promulgated in Republic Act No. 10173 otherwise known as the "Data Privacy Act of 2012", under General Provisions, Chapter 1, Section 2.

In addition, the researcher did not collect sensitive information and sets of data that would trace the identity of the respondents. Thus, the confidentiality of information will be treated with high respect. All records related to the respondent's specific information will never be released. Further, the respondents' identities, including the name of the workplace, will be kept private and confidential. Hence, the Google forms, the signed informed consent, and the Excel file were downloaded, and the link to the Google forms was automatically deleted after the respondents were done answering the survey questionnaire.

Justice. This study was the sole responsibility of the researcher; hence, no other person or agency was involved to share in the accumulated expenses throughout the research process. In addition, the respondents were given incentives or tokens that commensurate their time and effort in answering the research. In promoting justice and fairness, the researcher discussed the purpose of the study before involving the respondents in data gathering. Moreover, researchers assured the honest and relevant information from the respondents in order to generate a valid result.

Transparency. To establish transparency in the study, the researcher described the research procedures that were employed in the conduct of the whole research process. The researcher is open to any suggestions and criticism that make this study valuable. The feedback of the technical panel and ethics committee was highly considered. Moreover, as a researcher, I must be transparent about aspects of my study that have an impact on the rights, health, and safety of my respondents, or concerning information that may have a bearing on the decision of respondents to give or withhold their informed consent. The participants and researcher can access the findings of the study Dorsu-Banaybanay, where the researcher is currently working.

Qualifications of the researcher. The researcher was qualified to conduct this study because she completed a baccalaureate degree in Bachelor of Physical Education major in Physical Education and is currently pursuing a Master of Arts in Education major in Physical Education. Also, the researcher is an educator for 3 years handling SPEAR subjects. In addition, the researcher's adviser was qualified to be a co-author of this study since she is currently the Physical Education Professor of the University of the Immaculate Conception, Davao City and an expert in the field of physical education. This study needs the abilities and expertise of the adviser to scrutinize the study. Through the help of colleagues, advisers, professors, and friends, the researcher was able to develop ideas, knowledge, and skills to conduct this study.

Adequacy of Facilities. The researcher assured the adequacy of facilities to conduct this study and finish it in a specific time. The researcher has his laptop, internet connection, and help from his adviser, classmates, friends, and family to support the completion of the study. Similar studies were browsed through the UIC school libraries' internet portals for the researcher to check published graduate and postgraduate theses and dissertations. The pool of research experts was also readily available to conduct

the data analyses. Every phase in the research process was consulted with the research adviser to attain a notable study.

Community Involvement. The findings of this study were responsive to the needs of the community. As a researcher, one of my objectives was to submit relevant findings to the Public Schools Division so that the results can be actively utilized for community involvement. In addition, proper protocol and seeking approval to the school heads and supervisors was observed by the researcher. The researcher plans to disseminate the results to the school administrators and present the proposed development plan. Also, the researcher plans to disseminate the results by presenting them at local, national, and international research conferences. Lastly, the researcher envisioned publishing the study in various journals that may reach a larger audience in the local, national, and international refereed journals.

Likewise, the researcher disclosed information that may affect the respondents and the community as a whole. Teachers, school administrators and supervisors will benefit from the result of the study.

CHAPTER 3
RESULTS

In this chapter the underlying dimensions of the motivation for physical education based on the literature are presented. This was followed by a series of validation and reliability analyses, ultimately guiding the development and validation of the final version of the measurement.

Underlying Dimensions of the Motivation in Physical Education for Filipino Students in Physical Education Based on the Literature

To determine the underlying dimensions of the motivation scale designed for Filipino students in physical education, the researcher created 58 items checklist on motivation which was based on literature meticulously created and adjusted to enable the researcher to customize the tool to the particular objectives of the study. To ensure the validity of the self-constructed instrument, the researcher subjected the checklist through expert review of a panel of experts using the CVR method. The checklist for the initial development of the motivation scale designed for Filipino students in physical education based on the literature is presented in Table 1. It is composed of 58 items describing the aspects which motivate Filipino students in physical education.

The generated 58-item scale was administered to 80 college students taking Physical Education classes within the Agriculture, Business, or Education programs in Mati City to determine the underlying dimensions Respondents were asked to assess each item in the checklist using a 5-Likert type scale having 5 –

Table 1.1 Checklist of Initial Development of Motivation Scale for Filipino Students in Physical Education Based on Literature

Number	Items
1.	I enjoy PE because I find the activities fun.
2.	I participate in PE because I love the challenge of improving my skills.
3.	I look forward to PE because I enjoy being active.
4.	I feel excited when learning new techniques or skills in PE.
5.	I participate in PE because I enjoy being physically active.
6.	I participate in PE to get good grades.
7.	I join PE because my parents expect me to.
8.	I take part in PE to earn rewards or recognition.

9. I want to do well in PE to avoid negative feedback from my teacher.
10. I feel pressured to participate in PE by others' expectations.
11. I don't see the point of participating in PE.
12. I feel like PE is a waste of my time.
13. I participate in PE only because it's required.
14. I often think there's no benefit in doing PE activities.
15. I don't care if I perform well or poorly in PE.
16. in this PE class, Students help each other learn
17. In this PE class, Students help each other to get better and excel
18. In this PE class Students work together as a team
19. The PE teacher encourages students to help each other learn
20. Students are encouraged to work on their weaknesses
21. The PE teacher makes sure students improve on skills they're not good at.
22 The PE teacher emphasizes that we need to improve at each lesson
23 The PE teacher emphasizes always to try our best
24 Students are often given the opportunity to plan their own activities
25 Students are often given the opportunity to say what they think about a certain activity
26 Students have a choice of what activities they take part in
27 I think I am pretty good in this PE class
28 I am satisfied with my performance in this PE class
29 After playing in this PE class for a while I feel pretty skillful
30 am pretty skilled at the activity/sport in this PE class
31 I cannot play the activity/sport very well in this PE class
32 I have my own say regarding which skills I want to practice in this PE class
33 I can decide which activities I want to practice in this PE class
34 Playing in this PE class makes me feel closer to the other students
35 The different activities in this PE class make me feel more connected to the other students
36 I take part in this PE class, Because PE is fun
37 I take part in this PE class, Because I enjoy learning new skills
38 I take part in this PE class, Because PE is exciting
39 I take part in this PE class, Because of the enjoyment that I feel while learning new skills/techniques
40 I take part in this PE class, Because I want to learn sport skills
41 I take part in this PE class, because it is important for me to do well

strongly agree, 4 – agree, 3- neither agree nor disagree, 2 – disagree, and 1 -strongly Consequently, tests were performed to determine the suitability of the data set for factor analysis. Specifically, Using the JASP application, the suitability of the data was checked if it was appropriate for factor analysis using the Kaiser-Meyer-Olkin (KMO) Test measure the sampling adequacy while Bartlett's Test of Sphericity. Results are The KMO was the measure used to measure the sampling adequacy. The factor loading values displayed were set as > or = 0.6 which are considered as good items and < .6 considered as poor items and removed (Kaiser, 1974). The results revealed that many items have MSA values well below

0.50 like Q7 = 0.194, Q21 = 0.245, Q47 = 0.218, Q52 = 0.205 which are considered as problematic. Adding on, Items with MSA < 0.50 are considered not useful for factor analysis and were considered for removal.

Meanwhile, Bartlett's test of sphericity was used to determine that factor analysis is appropriate (Bartlett, 1950) wherein obtained p-value < 0.05 means the data is appropriate for EFA. It was revealed that Chi-square (X^2) = 3753.981, df = 1653, p < .001 suggesting sufficient correlations among variables to proceed with factor extraction (Tabachnick & Fidell, 2013).

Since the data met the assumptions that the data gathered was fit for factor extraction, the EFA was undertaken to examine the dimensionality of 58 items initially developed for the Motivation Scale for Filipino Students in Physical Education that may differ from previous literature due to suitability and usefulness in the research context. In the context of this study, the researcher employed the EFA to verify the number of specific components or dimensions of the Motivation for Filipino Students in Physical Education Scale and the pattern of the item–factor loadings.

An initial EFA was conducted using maximum likelihood extraction and Promax rotation was used because Promax is the most commonly used oblique rotation and it is a good choice when some correlation among factors
is assumed, which is often the case in behavioral and social sciences. (Tabachnick & Fidell).

Table 1.2
The KMO and Bartlett's Test of Sphericity of the Refined Developed Motivation of Filipino Students in Physical Education

KMO Measure of Sampling Adequacy		0.767
Bartlett's Test of Sphericity	Approx. Chi-square	1570.729
	Df	378
	P	< .001

Moreover, the factor loadings of EFA with modifications are presented in table 1.4 which was the basis of final four factors and corresponding items retained. They were based on the following criteria: factor loadings ≥ 0.40 are typically retained; items load clearly on one factor and not significantly cross-load (≥ 0.30 on multiple factors); Uniqueness values (1 – communality): lower is better; values > 0.60 suggest the item is poorly explained by the model.

Hence, in table 1.4, the item Motivation of for factor one is composed of nine items: Q37, Q38, Q39, Q36, Q42, Q40, Q1, Q43, Q35 have loadings that range from 0.515 to 0.920 which means they are very strong and clean factor. Since, the uniqueness values of the items are mostly < 0.50 which means they have good explanatory power, and they reflect a core latent trait. Additionally, items in factor two is composed of six items: Q56, Q55, Q58, Q46, Q57, Q15 have loadings that range from 0.571 to .984 which support that all items load well, and their uniqueness values are acceptable. As such all the items loaded in factor 2 are retained. Meanwhile, for Factor three since Q19 loads on both Factor 3 (0.573) and Factor 4 (0.411), and Q17 has an unusually high loading (1.057), which might suggest over extraction, only two
items Q18 and Q16 were strong and clean items for factor three and did not meet the set criteria of three due to less than three.

Table 1.3
EFA Result with Modification of Motivation of Filipino Students in Physical Education Scale

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Uniqueness	Remarks
Q37	0.920							0.200	Retained
Q38	0.900							0.226	Retained
Q39	0.849							0.249	Retained
Q36	0.815							0.346	Retained
Q42	0.751							0.379	Retained
Q40	0.695							0.359	Retained
Q1	0.603							0.525	Retained
Q43	0.517							0.480	Retained
Q35	0.515							0.514	Retained
Q56		0.984						0.122	Retained
Q55		0.778						0.277	Retained
Q58		0.730						0.178	Retained
Q46		0.705						0.474	Retained
Q57		0.634						0.181	Retained
Q15		0.571						0.416	Retained
Q17			1.057					0.014	Overextraction Not Retained
Q18			0.765					0.130	Retained
Q16			0.713					0.491	Retained
Q19			0.573	0.411				0.242	Cross loading Not Retained
Q22				0.851				0.164	Retained
Q23				0.805				0.297	Retained
Q21				0.716				0.480	Retained
Q12					0.934			0.219	Retained
Q11					0.707			0.495	Retained
Q14					0.528			0.522	Retained
Q48						1.013		0.005	Overextraction Not Retained
Q50						0.593		0.524	Retained
Q52						0.495		0.701	Retained

being retained in the factor.

Moreover, all Items for factor four: Q22, Q23, Q21 have loadings that range from 0.716 to 0.851 which showed that they are strong and clean factor and were all retained. Factor four is labeled as perceived competence.

Consequently, Items: Q12, Q11, Q14 in factor five have loading that range from 0.528 to 0.934 described as strong enough to be all retained . Notably, since Items: Q48, Q50, Q52 in factor six as shown in table 1.4 Q48 loads very strongly (1.013) while Q52 is marginal with 0.495 loading with high uniqueness of 0.711 considered the item as borderline. With only item Q50 as the only item without an issue in factor six. Factor 7 showed no substantial loadings and thus may not represent a distinct construct or might be due to over-extraction.

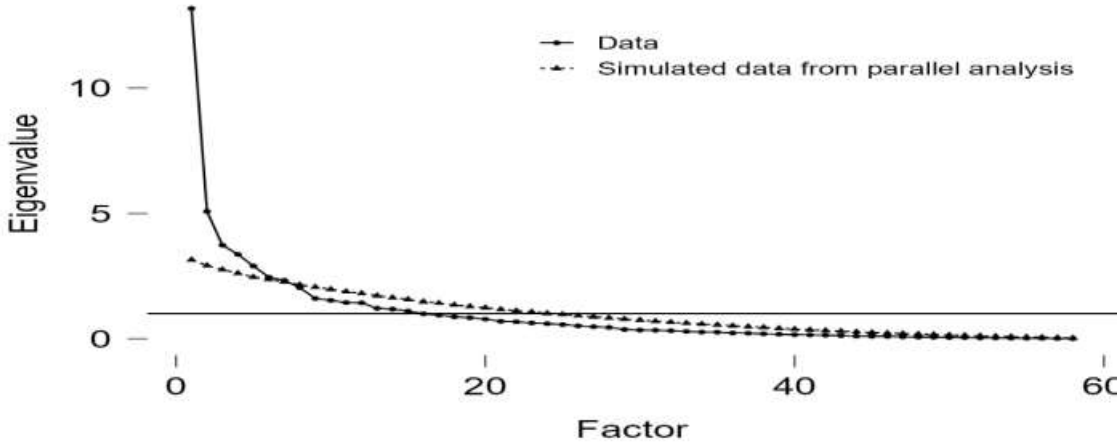
Meanwhile, the factor characteristics are presented below with Kaiser's Criterion (Eigenvalue > 1 as the basis of retaining a factor because an eigenvalue > 1 , the factor characteristics based on eigenvalues of the factors are presented in Table 1.5 together with the scree plot in Figure 2 which was one of the criteria of which the final number of factors for the developed motivation of Filipino students in Physical Education.

Factor Characteristics

		Unrotated solution			**Rotated solution**		
	Eigenvalues	**SumSq. Loadings**	**Proportion var.**	**Cumulative**	**SumSq. Loadings**	**Proportion var.**	**Cumulative**
Factor 1	8.610	8.312	0.297	0.297	5.185	0.185	0.185
Factor 2	3.347	3.079	0.110	0.407	3.806	0.136	0.321
Factor 3	3.037	2.720	0.097	0.504	2.926	0.105	0.426
Factor 4	2.236	1.940	0.069	0.573	2.314	0.083	0.508
Factor 5	1.531	1.237	0.044	0.617	2.016	0.072	0.580
Factor 6	1.268	0.938	0.034	0.651	1.662	0.059	0.640
Factor 7	0.944	0.585	0.021	0.672	0.881	0.031	0.671

It is shown that factors one to six have eigenvalues of greater than one supporting that they met the criteria of factor retention while only factor seven is presented with eigenvalue of less than one. Also, the scree plot was used in deciding which factors will be retained.

Likewise, based on the scree plot provided below which compares the eigenvalues from the actual data represented by solid line to those generated from simulated random data (dashed line with triangles) as part of parallel analysis.



Notably, the scree plot has a steep drop in eigenvalues after the first few factors which is around 6 which is a typical sign that only account for meaningful variance which is aligned to the factor characteristics shown both for unrotated and rotated solutions. Also, the intersection point depicts that eig envalues fall below the simulated data (parallel analysis) around the 7th factor while it can be seen that the elbow point which is the scree criterion is around factor six where the curve starts to flatten. The three indicators of the scree plot were considered to support the retention of six factors.

Hence, in table 1.5 the final EFA refinement of the Motivation of Filipino Students in Physical Education are presented after taking into consideration the factor loadings, factor characteristics, and the scree plot represents the underlying.

Table 1.4

Underlying Dimensions of the Motivation of Filipino Students in Physical Education Scale

Item No.	Factor 1- Intrinsic Motivation
37	I take part in this PE class, because I enjoy learning new skills
38	I take part in this PE class, because PE is exciting
39	I take part in this PE class, because of the enjoyment that I feel while learning new skills/techniques
36	I take part in this PE class, because PE is fun
42	I take part in this PE class, because I want to improve in sport
40	I take part in this PE class, because I want to learn sport skills
1	I enjoy PE because I find the activities fun.
43	I take part in this PE class, because I can learn skills which I could use in other areas of my life
35	The different activities in this PE class make me feel more connected to the other students
	Factor 2 – Amotivation

56	I take part in this PE class, but I do not see why I should have PE
55	I ended up in this PE class, but I have no idea how or why.
58	I take part in this PE class, but I can't see what I am getting out of PE
46.	In this PE class I often daydream instead of thinking what I am doing
57	I take part in this PE class, but I really feel I'm wasting my time in PE
15	I do not care if I perform well or poorly in PE.
	Factor 3 – Competence Support
Q22	The PE teacher emphasizes that we need to improve at each lesson
Q23	The PE teacher emphasizes always to try our best
Q21	The PE teacher makes sure students improve on skills we are not good at.
	Factor 4 – Perceived Value of PE
Q12	I feel like PE is a waste of my time.
Q11	I do not see the point of participating in PE.
Q14	I often think there is no benefit in doing PE activities

dimensions of underlying dimensions of motivation of Filipino Students in physical education based on the literature. It is composed of four factors: Factors one, two, four and six. Factor one is composed of nine items and labeled as intrinsic motivation, factor two is composed of six items, factor four became the factor three because the initial factor three was excluded due to over extraction and cross loading and it is composed of three items; and factor five became the factor four composed of three items while factor six was excluded due to over extraction and less than three items in the factor; and factor seven was exclude due to less than one eigenvalue as a factor.

Following a series of iterative exploratory factor analyses, the 17 items was retained to measure the Motivation of Filipino Students in Physical Education Scale. The final solution revealed a four-factor structure, derived through maximum likelihood extraction and Promax rotation represents the underlying dimensions of the Motivation of Filipino Students in Physical Education Scale which are labeled as follows: factor 1 is intrinsic motivation with nine items, factor 2 is amotivation having six items, factor 3 -competence support composed of three items, and factor 4 is perceived value of PE composed of three items.

The analysis of the **underlying dimensions of motivation among Filipino students in Physical Education (PE)** resulted in a refined and theoretically grounded four-factor structure. This was achieved through a systematic and iterative application of **Exploratory Factor Analysis (EFA)** using **maximum likelihood extraction** and **Promax rotation**, which is appropriate when factors are expected to be correlated (Fabrigar et al., 1999). The final solution retained 17 items, distributed across four meaningful dimensions: **Intrinsic Motivation, Amotivation, Competence Support,** and **Perceived Value of PE.**

Factor 1 – Intrinsic Motivation, comprising nine items, emerged as the most dominant and cohesive construct. This dimension reflects students' internal drive to participate in PE due to enjoyment, interest, and perceived personal relevance of the activities. This aligns with **Self-Determination Theory (Deci & Ryan, 1985)**, which posits that intrinsic motivation is driven by the inherent satisfaction of performing an activity. The findings are consistent with **González-Valero et al. (2019)**, who emphasize that students engage in physical activity more deeply when driven by enjoyment and personal growth. This

factor underscores that when students find PE fun and personally meaningful, their motivation is more sustainable and self-directed.

Factor 2 – Amotivation, with six items, captures a lack of intention or purpose in engaging with PE. Students in this category expressed feelings of futility and a lack of perceived benefit in participation. **Liaquat (2024)** describes amotivation as an internal absence of motivation, where individuals feel no drive or meaningful connection to the activity. **Arif (2024)** further notes that this condition may not stem from external pressures alone but from a deeper disconnect between personal goals and the perceived value of the activity. Identifying and addressing amotivation is critical, as it can significantly hinder participation and long-term health behavior development.

Factor 3 – Competence Support, now reclassified from the original factor four due to the removal of the initial factor three (which showed over-extraction and cross-loadings), includes three items that emphasize the supportive role of PE teachers. These items highlight the importance of feedback, encouragement, and tailored instruction aimed at student improvement. This is in line with **Tremblay & Lloyd (2019)**, who argue that competence support in PE contributes to students' physical, emotional, and social development by reinforcing their belief in their ability to succeed. A competence-supportive environment is essential for fostering a sense of mastery and continued engagement in physical activity.

Factor 4 – Perceived Value of PE, derived from three items, captures students' assessment of the relevance and usefulness of PE in their lives. This factor emphasizes the cognitive appraisal of the importance of PE, particularly its connection to broader educational and health goals. **Deng & Legge (2022)** found that students who perceive value in PE are more likely to participate actively and develop positive attitudes toward lifelong physical activity. Similarly, **Ceylan & Simonton (2025)** highlighted that perceived value is strongly associated with increased positive emotions and decreased resistance in class settings.The exclusion of certain factors (e.g., initial factor three and factor six due to **over-extraction** and **cross-loadings**, and factor seven due to **eigenvalues below 1**) reflects methodological rigor in line with best practices in factor analysis (Costello & Osborne, 2005; Kaiser, 1960). These exclusions ensure that only stable and interpretable factors are retained, thereby enhancing the scale's construct validity and reliability.

Parsimonious Fit of the Dimensions of Motivation Scale of Filipino Students in Physical Education

Following the completion of the Exploratory Factor Analysis (EFA), a Confirmatory Factor Analysis (CFA) was conducted to evaluate the validity and reliability of the proposed four-factor measurement model assessing motivation of Filipino students in Physical Education. CFA is a robust statistical technique used to test the relationships between observed indicators and their underlying latent constructs. The CFA was used to confirm the factor structure identified during the EFA, assessed the goodness-of-fit of the model, and examined the internal consistency, convergent validity, and discriminant validity of each construct.

Importantly, the discussion of the CFA results includes the model fit indices, reliability estimates, and validity assessments. Presented in Table 2 are the comparative model fit indices, cut-off criteria, and interpretations for both the initial and final trial versions of the confirmatory factor analysis models. To determine the adequacy of the four-factor measurement model for the Motivation of Filipino Learners Scale in Physical Education, a series of fit indices were examined.

Consequently, the model fit values for the initial and final CFA models, alongside their interpretative benchmarks are presented in table 2.1. The initial model showed fit indices suggesting the model is

adequate but not optimal. SRMR and GFI are good absolute fit and very good fit respectively, but RMSEA is marginal fit while CFI is adequate but not optimal suggesting areas for model improvement indicating that model modifications were needed. After model refinement, the final CFA model demonstrated excellent fit based on several criteria: CFI = .962 and TLI = .957, both exceeding the .95 threshold for excellent fit. RMSEA = .043 with a non-significant p-close = .869, suggests a close approximate fit. SRMR = .049 is below the cutoff of .08, supporting acceptable fit.
Additional indicators such as the Goodness of Fit Index (GFI = .990) and McDonald Fit Index (MFI = .873) also showed very good and acceptable fit

Table 2
Goodness of Fit for the Initial and Final Four-Factor Model

INDEX	CRITERION	MODEL FIT VALUE			Interpretation
		Initial	Interpretation	Final	
χ^2 (df)	p > .05	< .001	Poor Fit	< .001	Poor Fit
CFI	≥ 0.90	0.850	Adequate but not optimal	0.964	Good Fit
TLI	≥ 0.90	0.827	Moderate but suboptimal fit	0.953	Excellent Fit
RMSEA	≤ 0.06	0.088	Marginal fit	0.060	Good Fit
P-CLOSE	> 0.05	< .001	Significant/ Poor Fit	0.277	Close Fit
SRMR	≤ 0.08	0.065	Good absolute fit	0.051	Good Fit
GFI	≥ 0.90	0.990	Very Good Fit	0.995	Excellent Fit
MFI	≥ 0.90	0.873	Acceptable Fit	0.909	Acceptable Fit
ECVI	Lower better	=1.202	Parsimonious Fit	.935	Parsimonious Fit

Legend:
χ^2 (df) – Chi-Square Test *CFI- Comparative Fit Index*
TLI- Tucker-Lewis Index *RMSEA- Root Mean Square Error of Approximation*
GFI- Goodness of Fit Index *SRMR- Standardized Root Mean Square Residual*
MFI- McDonald Fit Index *ECVI- Expected Cross Validation Index*

substantially from 1.202 (initial) to .935 (final), supporting a more parsimonious and respectively. Furthermore, the Expected Cross Validation Index (ECVI) dropped
stable model structure in the final solution. These results collectively indicate that the final CFA model provides a robust representation of the data and supports the factorial structure identified in the exploratory phase though some of the items were excluded due to low loadings to refine the model that supports a parsimonious fit.

Reliability of the Developed Scale of Motivationof Filipino Students in Physical Education
Presented in Table 3.1 are the assessment results of the internal consistency and convergent validity of the measurement model. Also, several reliability statistics were computed and these include Cronbach's alpha (α),

Table 3.1
Reliability and Convergent Validity of the Four-Factor Measurement Model

Factors	Indicators	Standardized Factor Loadings	Composite Reliability (ω)	Cronbach Alpha (α)	Average Variance Extracted	Factor Variances
Factor 1- Intrinsic Motivation	Q37	0.540	0.807	0.798	0.506	1.000
	Q38	0.539				
	Q36	0.523				
	Q43	0.433				
Factor 2- Amotivation	Q56	0.512	0.795	0.792	0.563	1.000
	Q58	0.573				
	Q57	0.555				
Factor 3- Competence for Sport	Q22	0.619	0.818	0.809	0.596	1.000
	Q23	0.575				
	Q21	0.506				
Factor 4- Perceived Value of PE	Q12	0.567	0.806	0.804	0.581	1.000
	Q11	0.503				
	Q14	0.503				
Total			0.910	0.884		

composite reliability (ω), and average variance extracted (AVE) for each latent factor. All four factors demonstrated acceptable to excellent reliability. Specifically, Cronbach's alpha ranged from 0.792 (Factor 2) to 0.809 (Factor 3), while composite reliability (ω) ranged from 0.795 to 0.818, exceeding the recommended minimum a high degree of internal consistency among the observed variables within each construct.

In terms of convergent validity, all of the four constructs surpassed the recommended AVE threshold of .50 (Fornell & Larcker, 1981), indicating that a sufficient proportion of variance is explained by the indicators. The AVE values were as follows: Factor 1= 0.506, Factor 2 = 0.563, Factor 3 = 0.596 and Factor 4 = .581. Factor variances reflect the proportion of total variance attributed to each latent construct, supporting the factorial distinctiveness and structural coherence of the model.

Notably, the discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). The Heterotrait-Monotrait ratio of correlations (HTMT) is a method for assessing discriminant validity between latent constructs or factors in a confirmatory factor analysis. It evaluates how distinct each factor is from the others based on the correlations among their items. As presented below, the HTMT values in the parsimonious fit model are all below 0.85, indicating that discriminant validity is generally acceptable for all factor pairs. However, the F1–F4 pair (0.772) is relatively high, suggesting a moderate correlation. There was no need to take action regarding such issue because action is only needed if HTMT exceeds 0.85–0.90 and theoretical considerations support the concern.

These results affirm that the final four-factor model is not only psychometrically sound but also theoretically coherent, capturing the multifaceted nature of student motivation in physical education. The findings are consistent with motivation theories such as **Self-Determination Theory (Deci & Ryan,**

2000), which identifies intrinsic motivation and perceived value as critical components of engagement, along with competence feedback and amotivation as explanatory variables for differences in student participation and attitudes.

Heterotrait-Monotrait Ratio (HTMT) Discriminant Validity

Comparison	HTMT Value	Interpretation
Factor 1 – Factor 2	0.511	Good
Factor 1 – Factor 3	0.500	Good
Factor 1 -. Factor 4	0.772	Acceptable, but close to upper limit
Factor 2 -Factor 3	0.556	Good
Factor 2 -Factor 4	0.573	Good
Factor 3 - . Factor 4	0.611	Good

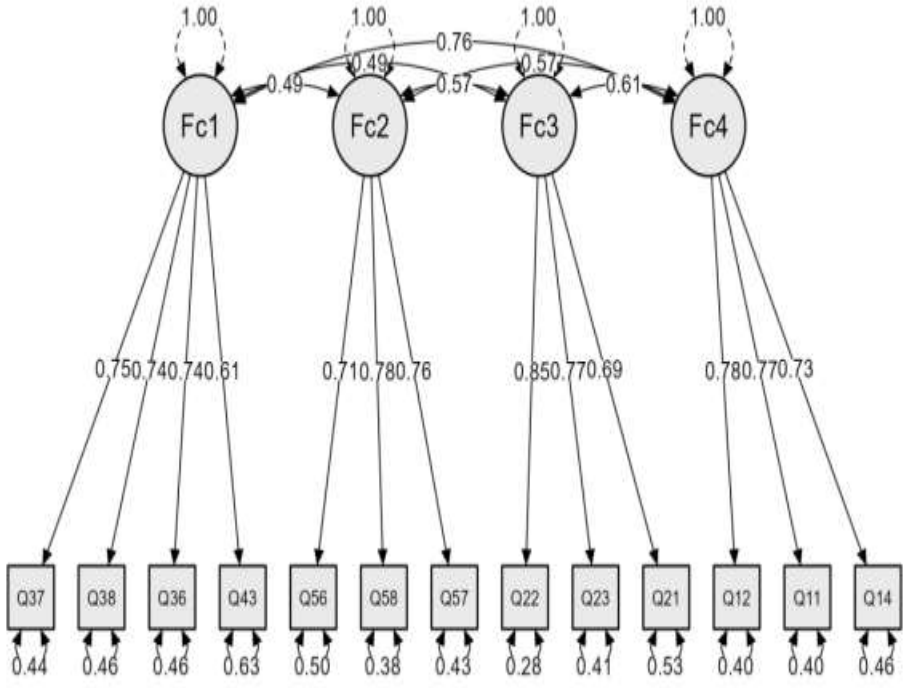
Moreover, the standardized factor loadings for all items across the four latent constructs were statistically significant ($p < .001$), indicating that the observed variables adequately represent their corresponding latent factors as presented in Figure ___. The visual representation of the measurement model demonstrates the strength and direction of the relationships.

The comparison between **Factor 1 and Factor 3 (Competence Support)** yielded a value of **0.500**, also indicating good discriminant validity. This aligns with findings from **Vallerand (2001)**, who emphasized the importance of teacher support for competence as a separate construct that influences students' motivation indirectly, especially in structured environments like physical education.

The only slightly elevated HTMT value was observed between **Factor 1 (Intrinsic Motivation)** and **Factor 4 (Perceived Value of PE)** at **0.772**, which, while still within the acceptable range, suggests a moderate correlation. This is theoretically justifiable, as students who find intrinsic enjoyment in PE are also likely to perceive it as valuable. According to **González-Valero et al. (2019)**, intrinsic motivation is closely tied to students' recognition of the broader benefits of physical education, including physical and social development, which naturally influences their perceived value of the subject. Despite the moderate association, the HTMT value does not exceed the critical 0.85 mark, thus no action was necessary to address potential construct redundancy (Voorhees et al., 2016).

Altogether, the HTMT results, standardized factor loadings, and the model visualization collectively confirm that the measurement model is both statistically and theoretically sound. It accurately captures four distinct, though interconnected, dimensions of Filipino students' motivation in physical education—intrinsic motivation, amotivation, competence support, and perceived value of PE—consistent with widely accepted theories of motivation and educational psychology.

Figure __
Standardized Path Diagram of the CFA for Model of the Motivation Scale of Filipino Students in Physical Education



In Figure ___, the standardized factor structure of the Motivation Scale of Filipino Students in Physical Education is illustrated comprising four latent constructs: Factor 1 – Intrinsic Motivation, Factor 2 - Amotivation, Factor 3 – Competence Support, and Factor 4 – Perceived Value of PE. Each construct is represented by multiple observed indicators. Standardized factor loadings are displayed on the arrows from latent to observed variables. Solid arrows represent significant paths ($p < .001$), while dashed arrows indicate fixed or constrained parameters. Curved double-headed arrows reflect inter-factor correlations. Error terms are shown as small circles adjacent to each observed variable.

Correlations among the latent constructs are also indicated with double-headed arrows. These inter-construct correlations range from moderate to high supporting the theoretical relatedness of the factors while maintaining discriminant validity, as confirmed through HTMT analysis. As illustrated in the diagram, the clear and well-fitting measurement model support the construct validity of the Motivation Scale of Filipino Students in Physical Education.

Incidentally, the confirmatory factor analysis results provided strong evidence supporting the construct validity of the four-factor model. The final model demonstrated excellent fit, adequate internal consistency, strong convergent validity for most factors, and valid discriminant validity across all constructs. These findings suggest that the measurement model is psychometrically sound and suitable for assessing the Motivation of Filipino Students in Physical Education.

As shown in table 3.2, the overall reliability of the developed Motivation Scale of Filipino Students in Physical Education is good with a Cronbach's

The visual representation includes **solid arrows for significant paths** and **curved double-headed arrows** to indicate inter-factor correlations, providing a structural overview that supports the interrelated

yet distinct nature of the constructs. The model captures moderate to strong inter-construct correlations, which is theoretically consistent with **Self-Determination Theory** (Deci & Ryan, 2000), positing that motivation is multidimensional and shaped by psychological needs such as competence, autonomy, and relatedness.

Table 3.2
The Reliability of the Developed Motivation Scale of Filipino Students in Physical Education Students

	Cronbach's Alpha	**Interpretation**
Intrinsic Motivation	0.798	Good
Amotivation	0.792	Good
Competence for Sport	0.809	Good
Perceived Value of PE	0.804	Good
Motivation of Filipino Students in Physical Education	0.884	Good

alpha coefficient of .88. In particular, the Cronbach's alpha coefficients of the four underlying dimensions of the developed and validated scale range from .79 to .81 where Amotivation obtained a Cronbach's alpha coefficient of .79 while Competence Support got a Cronbach's alpha coefficient of .81.

The internal consistency of the **Motivation Scale of Filipino Students in Physical Education** is demonstrated by the reliability statistics reported in the table. The **overall Cronbach's alpha coefficient of 0.884** indicates **excellent reliability**, suggesting that the scale as a whole possesses strong internal consistency and that the items collectively measure a coherent construct (Nunnally & Bernstein, 1994). Each of the four underlying dimensions also yielded Cronbach's alpha values within the acceptable to good rang.These coefficients meet the widely accepted benchmark of **.70 or higher**, as established by **George and Mallery (2003)**, for determining acceptable reliability in psychological scales. Notably, **Competence for Sport** emerged as the most internally consistent subscale, which aligns with prior studies underscoring the critical role of perceived competence in shaping students' motivation in physical education settings (Tremblay & Lloyd, 2019).

Furthermore, the reliability of the **Amotivation** subscale (α = .792) confirms the scale's ability to consistently capture the construct of disengagement or lack of intent to participate, a dimension emphasized in the **Self-Determination Theory** (Deci & Ryan, 2000). This aligns with research by **Liaquat (2024)** and **Arif (2024)**, who highlighted that amotivation reflects both internal and external disengagement, reinforcing the need for distinct items to accurately reflect this state.The **Intrinsic Motivation** subscale, with α = .798, is consistent with research from **González-Valero et al. (2019)**, who emphasized that students who find personal satisfaction and enjoyment in physical activity exhibit high intrinsic motivation, which tends to be reliably measurable due to the clarity and salience of the concept.

Lastly, the **Perceived Value of PE** subscale (α = .804) confirms that students consistently responded to items reflecting the perceived importance or benefits of physical education. This finding is supported by

Deng & Legge (2022) and **Ceylan & Simonton (2025)**, who showed that students' perceptions of PE's value significantly influence their participation and emotional engagement.

Suitable Measurement Tool for Assessing the Motivation of Filipino Students in Physical Education

It is shown in table 4, the four dimensions and corresponding items found suitable to measure the motivation of Filipino students in physical education. The four items (37, 38, 36, and 43) composed the Factor 1 labeled as Intrinsic Motivation while three items (56, 58, 57) belong to Factor 2 labeled as Amotivation. Adding on, three items (22,23,21) belong to Factor 3 labeled as CompetenceSupport, and three items (12, 11, 14) belong to Perceived Value of PE.

Table 4

Suitable Measurement Tool for Assessing the Motivation of Filipino Students in Physical Education

Item No.	Factor 1- Intrinsic Motivation
37	I take part in this PE class, because I enjoy learning new skills
38	I take part in this PE class, because PE is exciting
36	I take part in this PE class, because PE is fun
43	I take part in this PE class, because I can learn skills which I could use in other areas of my life
	Factor 2 – Amotivation
56	I take part in this PE class, but I do not see why I should have PE
58	I take part in this PE class, but I can't see what I am getting out of PE
57	I take part in this PE class, but I really feel I'm wasting my time in PE
	Factor 3 - Competence Support
Q22	The PE teacher emphasizes that we need to improve at each lesson
Q23	The PE teacher emphasizes always to try our best
Q21	The PE teacher makes sure students improve on skills we are not good at.
	Factor 4 – Perceived Value of PE
Q12	I feel like PE is a waste of my time.
Q11	I do not see the point of participating in PE.
Q14	I often think there is no benefit in doing PE activities

Table 4 presents a refined and culturally appropriate measurement tool composed of four core dimensions to assess the motivation of Filipino students in physical education (PE). These dimensions Intrinsic Motivation, Amotivation, Competence Support, and Perceived Value of PE, emerged from exploratory factor analysis and are supported by theoretical and empirical literature, reflecting both internal psychological drivers and external educational influences relevant to student motivation.

Intrinsic Motivation is the first and most dominant factor, represented by items 37, 38, 36, and 43. These items capture students' enjoyment, excitement, and personal interest in PE, as well as their appreciation of its broader applicability to life. This aligns with the findings of González-Valero et al. (2019), who emphasized that intrinsic motivation is rooted in the pleasure derived from learning and personal growth, rather than external rewards. Furthermore, Gottlieb et al. (2016) suggest that intrinsically motivated behaviors are computationally similar to extrinsic ones in their goal-directedness but are more sustainable because they are driven by inherent satisfaction. The strong internal consistency of this factor highlights the significant role of self-determined motivation in Filipino students' engagement in PE.

Amotivation, composed of items 56, 58, and 57, represents a clear contrast to the intrinsic dimension. These items reflect a lack of direction or purpose in participating in PE, indicating a psychological state where students feel disengaged and perceive little to no value in the activity. This is consistent with the definitions provided by Liaquat (2024) and Arif (2024), who explain amotivation as either an absence of personal interest or a result of persistent external discouragement. These findings underscore the importance of addressing both internal and contextual factors that may lead to student disengagement, particularly in the context of a structured school environment like PE.

The third factor, **Competence Support**, includes items 22, 23, and 21, which focus on the role of the PE teacher in promoting improvement, effort, and individual progress. Tremblay and Lloyd (2019) define competence support as the facilitation of physical and personal development through structured and encouraging guidance in physical education. These results affirm the essential role of the teacher in fostering a mastery-oriented learning climate, where students feel capable, supported, and motivated to improve. This aligns with Self-Determination Theory, which highlights competence as a key psychological need for motivation.

Lastly, the **Perceived Value of PE**, derived from items 12, 11, and 14,
reflects students' beliefs about the usefulness and relevance of physical education. Although the wording of these items is negatively framed, their inclusion as a distinct factor suggests that students' valuation of PE significantly impacts their motivational orientation. Deng and Legge (2022) assert that students' perceptions of PE influence not only their physical engagement but also their social and emotional development. Similarly, Ceylan and Simonton (2025) found that students who perceive PE as valuable report more positive emotional experiences during class, reinforcing the importance of promoting PE's holistic benefits to enhance its perceived relevance among students.

CHAPTER 4
CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusion, and recommendations based on the findings of the study.

Conclusions

The study examined participants experiences and perspectives regarding their motivation in Physical education class. Through insights gathered from the participant, several themes were extracted that highlighted and the study revealed that student motivation in physical education encompasses various dimensions and drawn from participants' experiences and perspectives, highlight the complexity of student engagement in PE classes. Also, insights from interviews and discussions with students provided a strong foundation for the scale's development. Their lived experiences ensured that the MPEFS captures motivation in a way that reflects actual classroom dynamics and student realities.

The MPEFS is a culturally grounded and contextually appropriate instrument that can be used by educators to assess and enhance student motivation in PE. Its validation process confirmed that it is a reliable and effective tool for educational use in the Philippines and promoting student motivation through validated tools like the MPEFS can help create more meaningful and sustainable physical education programs. The scale can guide the development of strategies that engage students and contribute to long-term healthy behaviors.

The seven dimensions of motivation scale program exhibited a parsimonious fit, indicating that the constructs were well- represented by their associated items through confirmatory factor analysis (CFA). All criteria for parsimonious fit were met, confirming a good model fit. The study identified seven distinct dimensions Intirnsic mortivation, amotivation, social relatedness, percieve competence, competence support, controlled motivation and percieve value of P.E, which collectively defined participants' motivation in the physical education class.

Moreover, the reliability of the development and validation of Motivation Scale was reliable with values for each dimension which indicated each dimension to have good internal consistency because they reflect that items are consistent with other items in the set and measure the same construct.

Recommendations

The study had many intriguing results and conclusions. Here are some suggestions for how to make the motivation scale in Physical Education program, better at promoting Motivation and getting people more committed to physical education class.

Considering the seven key dimensions of the Motivation scale, Intrinsic motivation (IM),amotivation (A), social relatedness (SR), percieve competence (PC), competence support (CS), controlled motivation (CV) and percieve value of P.E. (PV) which are designed to strengthen participants' dedication to the program, it is highly recommended that Teachers prioritize these elements. By focusing on these dimensions, teachers can effectively foster commitment among Filipino students by delivering well-structured motivation that adhere to standard procedures for teaching.

To ensure that the developed and validated tool continues to exhibit a parsimonious fit in assessing student motivation, it is recommended that a second trial be conducted. Additionally, improving the tool's effectiveness will involve strengthening the relationships between dimensions. Regular validation and updates are essential to maintaining its robustness and accuracy in capturing participants' commitment across diverse contexts and groups. Based on the reliability results of the developed scale, it is recommended to refine and improve the factor with acceptable reliability. The scale should be regularly validated and updated to maintain reliability across all factors, ensuring it consistently measures participants' commitment accurately.

Based on the results, the Motivation Scale is the most suitable tool to measure participants' commitment to the Physical education class. It is recommended to continuously refine and validate the scale to ensure its reliability and relevance across diverse participant profiles. Additionally, incorporating feedback from participants and adapting the tool to evolving trends can further enhance its effectiveness in assessing commitment levels.

To ensure the tool consistently realizes its intent in measuring the significance of differences across grouping variables, it is recommended that a designated research coordinator or evaluation team conduct regular validation and refinement of the tool, particularly focusing on items with marginally significant differences. Additionally, the research lead should oversee efforts to increase the sample size and

diversity of participants, enhancing the tool's ability to detect subtle variations among groups and ensuring robust and reliable outcomes.

The results from this study may raise awareness among top administrators in the Department of Education and Higher Education Institutions. In particular, it is suggested that the groups that make policy think about creating detailed rules that require the physical education departments of different schools and universities to develop ways to get their basic physical education students to be more active and motivated.

Lastly, future researchers may find this study valuable as a starting point for more profound investigations. It can contribute additional knowledge to the physical education curriculum and inform future studies.

These recommendations aim to refine and enhance the students motivation, encouraging more individuals to commit to an active and motivated.

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