

Effectiveness of Module Assisted Self-Defense Training

Jerald Angelo R. Salinas*

salinasjeraldangelo@gmail.com

Master of Arts in Physical Education at Cagayan State University, Carig Sur, Tuguegarao City, 3500, Philippines
Regional Sports Focal at Department of Education Regional Office No. 2, Carig Sur, Tuguegarao City, 3500, Philippines

Abstract

This study addressed the congestion of topics in the MATATAG curriculum by integrating combative sports lessons with real-life self-defense applications through a module assisted training approach. Using a quasi-experimental pretest–posttest design, the study tested the effectiveness of a one-month self-defense module for Grade 7 students, delivered in four Saturday sessions and developed with the guidance of a professional Taekwondo black belter. Results showed significant improvements in students' self-defense skills across all modules, with posttest scores consistently higher than pretest scores, particularly in strikes and power, blocks and defenses, and takedown and escape. While gain scores did not strongly predict final defense levels, better performance was observed among male students, those with normal BMI, learners living outside the city, and physically active students. Overall, the module proved effective in enhancing students' knowledge, skills, and readiness for real-life self-defense situations, supporting its use as an innovative strategy in teaching combative sports in Physical Education.

Keywords: Module; Self-defense; PE Curriculum; Physical Education; Combative Sports; Taekwondo.

Introduction

Being proactive and preventing the future problem before it occurs is an important step to the greater minimization of the risk of experiencing more serious and complicated problems in the future. As Franklin, B. (1735) wisely asserted, “An ounce of prevention is worth a pound of cure” which puts forward the point that being prepared and acting beforehand is much more productive than chasing would have been consequences of that decision. Our adaptation to difficulties and taking advance action helps us to avoid unnecessary stresses and disappointments in the future, and this is a burden more than we can withstand. They may be human-made or natural but accidents can never be avoided, however, we can reduce their consequences. There are steps we can take to reduce the harm and guarantee increased safety even though we cannot precisely predict what, when, where, or how an accident will occur. This emphasis on prevention reflects the wisdom of putting in a little effort now, which can help us avoid the much greater time, cost, and resources needed to deal with a major accident after it occurs. In essence, planning and preparation are investments in safety and security that can prevent more serious consequences in the future.

During the preparation of the researcher for the board licensure examination for professional teacher (BLEPT) last March 2023, the researcher had a lecturer from a review center who happened to be the top-ranked nationwide from Cagayan Valley, specifically in Ilagan City, Isabela. The lecturer is one of the icons of CBRC named Roslyn Vea Damasco which emphasized the importance of aligning the curriculum with the needs of society, particularly in Physical Education (PE). Damasco suggested that “Swimming should always be included in the curriculum from the beginning because it's a valuable life-saving skill during floods.” However, the researcher was aware that swimming is already part of the PE curriculum, especially in Senior High School (SHS) and College. Considering this, the researcher thought of a two-fold solution. Self-defense could be a valuable addition to the PE curriculum since it equips students with knowledge and practical skills.

Additionally, imagine a situation where one is walking home after school on one rainy, rain-dimed day. Suddenly, a strange person comes to them and tries to forcefully pull them into their car. After the successful abduction of the criminal, they are exposed to the life of labor. Which is a sad circumstance that could have been avoided should the school offer lessons on self-defense. During a period when individual security takes precedence of all factors, learning self-defense has been an invaluable asset. Whether it is for confidently navigating the bustling streets of cities, or any part of the Philippines, choosing to learn self-defense is a practical and empowering decision.

It was reported that there has been a worrying increase in some criminal activities in the Philippines with robbery and rape still reported to be practiced. As an illustration, the cases of robbery rose by close to 7% in 2023 owing to an increased number of commercial premises opened, which has been one of the frequent victims to robbers (Garabillo, 2023). Casilao (2023) continued that rapes remain a common occurrence and this indicates that the society has always been threatened in terms of its safety, an experience that has also been observed across other local communities in Isabela. A report by 104.9 XFRM Santiago (2023) said that the LNB president of Jones, Isabela, was estimated in Santiago City regarding a statutory rape charge and a 19-year-old nursing student at the University of La Salette was found cold corpse last June 18, 2023, in Buenavista, Santiago City. In this context, self-defense training has gained significance. While it cannot eliminate crime entirely, equipping individuals with self-defense skills can serve as an effective measure to lessen the potential impact of violent encounters, potentially decreasing the number of successful criminal acts.

Learning basic self-defense skills is the necessary need of the students. The Physical Education teachers have the responsibility of instilling a knowledge of the self-defense concepts in the sphere of physical education in schools. This information considers all kinds of environmental conditions that can endanger personal safety of the individual and the people around them (Melanie et al., 2008). The students should be provided with the skills on how to identify risky scenarios and how to overcome them in case they push them into unfavorable conditions. Mastery of self-defense skills not only instills a sense of security but also nurtures confidence by enabling students to set and attain goals necessary for their progress (Kimberly, 2007). Self-defense, in fact, is a fundamental need for every individual, ensuring a life free from apprehension of harm. Once the baseline requirement of physical fitness is met, feeling safe and secure becomes the next paramount concern.

In 2006, Liebling says providing students with self-defense skills plays a crucial role in diminishing the probability of them becoming targets of criminal activities by utilizing simple yet efficient self-defense methods. And with the comprehensive research, the researcher identified the necessity of incorporating escape maneuver of the students in a module assisted self-defense training as an input for innovative delivery of the curriculum of Physical Education.

Statement of the Problem

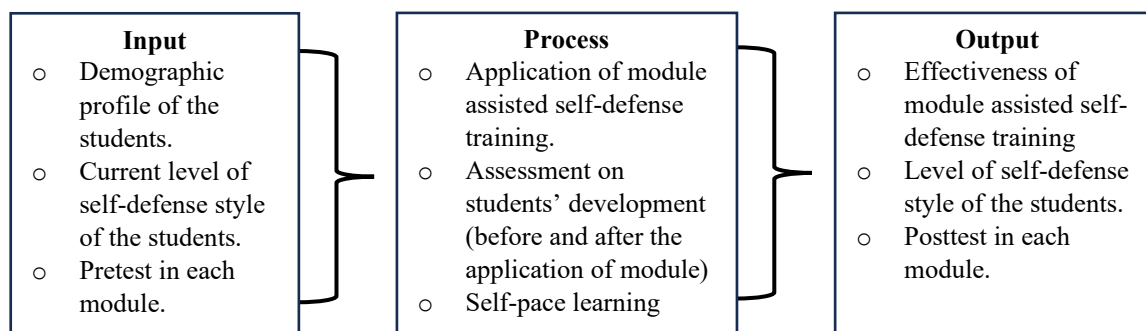
Generally, this research focuses on the effectiveness of module assisted self-defense training as an input for innovative delivery of the curriculum of Physical Education.

Specifically, it answers the following questions:

1. What is the demographic profile of the students in terms of:
 - 1.1 gender (male, female and LGBT++);
 - 1.2 BMI classification (underweight, normal and overweight);
 - 1.3 physical engagement (seldom, sometimes and frequently); and
 - 1.4 location status (urban, peri-urban and rural)?

2. What is the level of defense style of the students before (pre-assessment) and after (post-assessment) the implementation of the module in self-defense training in terms of:
 - 2.1 strikes and power;
 - 2.2 blocks and defenses; and
 - 2.3 takedown and escape?
3. What are the gain scores of the students in each module?
4. Is there a significant difference between the level of defense style of the students before (pre-assessment) and after (post-assessment) the implementation of the module in self-defense training?
5. Do the gain scores significantly explain the posttest level of defense style of the students?
6. Is there a significant difference in the post-assessment level of defense style of the students when they are grouped according to their profile?

Paradigm of the study



The study framework begins with the input phase, where a pre-assessment is conducted to gather baseline data on students' demographic profiles and their initial knowledge and skills on strikes, blocks and escape of self-defense. Pre-assessment was conducted prior to the implementation of each module, as already stipulated within the module. This data enables the researcher to establish a starting point for comparison. In the process phase, the module assisted self-defense training is implemented, which utilizes module-based, technology-assisted methods to deliver self-defense training. The program was divided into pre-assessment and post-assessment to assess any considerable changes in self-defense skills of the students after the intervention, which make the comparison of the results of the pre-test and post-tests very detailed. Moreover, the modules are already equipped with individual QR code as a guide of technological support to facilitate the understanding process skillfully, as it is a self-paced learning device. Output phase concentrates on the examination of the effectiveness of the intervention, but not only on the effect itself, but also on the great distinction depending on the demographic factors, i.e., gender, BMI classification, physical engagement and location status. This multifaceted design allows to assess the overall effect of the intervention thoroughly and conduct the analysis considering multiple demographic groups and providing a sophisticated vision of reaction on the self-defense training program of diverse subgroups.

Methodology

The research employed a quasi-experimental pretest and posttest design to assess the effectiveness of a module-assisted and technology-aided self-defense education intervention among students. Initially, pre-assessment was conducted to establish a baseline of students' knowledge, skills, or attitudes toward self-defense prior to the intervention that undergoes in Jamovi with 0.948 Cronbach alpha understood to be excellent in its level of reliability. Following the intervention, a post-assessment is measured any significant

changes in these areas, allowing for comparison between pre- and post-test results. The research also assess the development of the students at the end of each volume of the module, with evaluations provided at both the beginning and the end of each section. To further develop the analysis, the research examined the pronounced differences in the intervention effects in accordance with the demographic characteristics of the responders, including age, gender, physical activities and location to the previous self-defense status of the respondents. The design is the most appropriate because it enable us to concurrently examine the efficacy of module assisted self-defense training, and subgroup analysis that enable us to examine the dispersion between the various demographic groups.

Results

This section presents the analysis of the data gathered and discusses the results in relation to the research questions, highlighting the implications of the findings to provide clear answers to the problems addressed in this study.

Table 1. Frequency distribution of the study participants according to the profile variables.

Variables	Category	Counts	% of Total	Cumulative %
Gender	Male	56	41.5%	41.5%
	Female	59	43.7%	85.2%
	LGBTQ++	20	14.8%	100.0%
Body Mass Index	Underweight	31	23.0%	23.0%
	Normal	79	58.5%	81.5%
	Overweight	25	18.5%	100.0%
Physical Engagement	Seldom	32	23.7%	23.7%
	Sometimes	65	48.1%	71.9%
	Frequently	38	28.1%	100.0%
Location Status	Urban	73	54.1%	54.1%
	Peri-urban	17	12.6%	66.7%
	Rural	45	33.3%	100.0%
Total		135	100%	-

Table 2.1.1 Level of defense style in terms of accuracy of strikes and power before and after the implementation of the module.

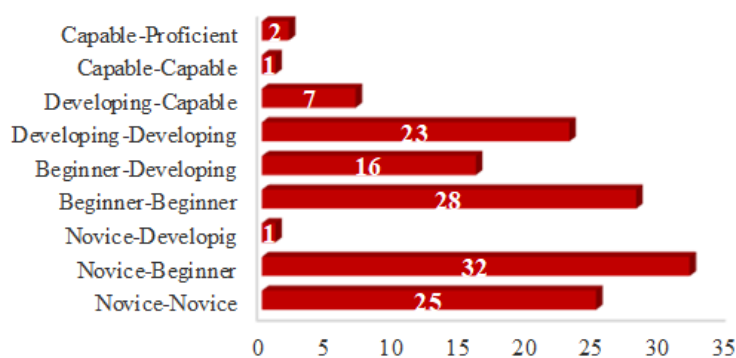


Table 2.1.2 Level of defense style in terms of power of strikes before and after the implementation of the module.

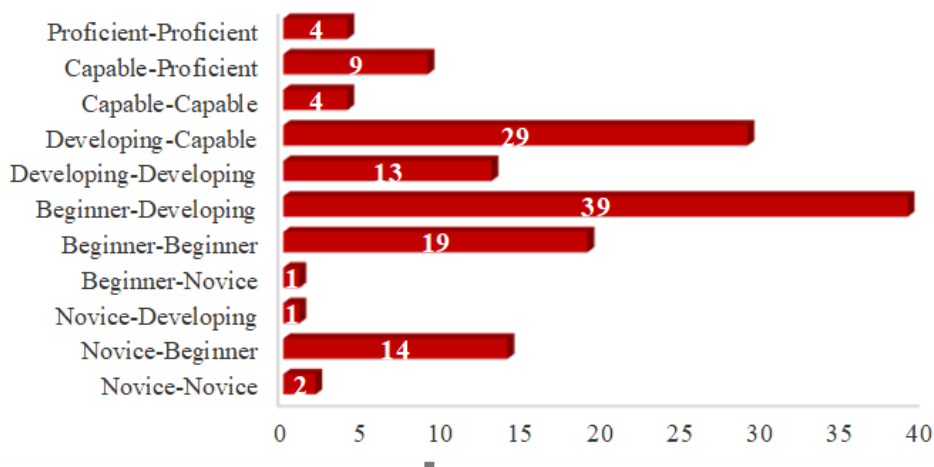


Table 2.1.3 Level of defense style in terms of technique of strikes and power before and after the implementation of the module.

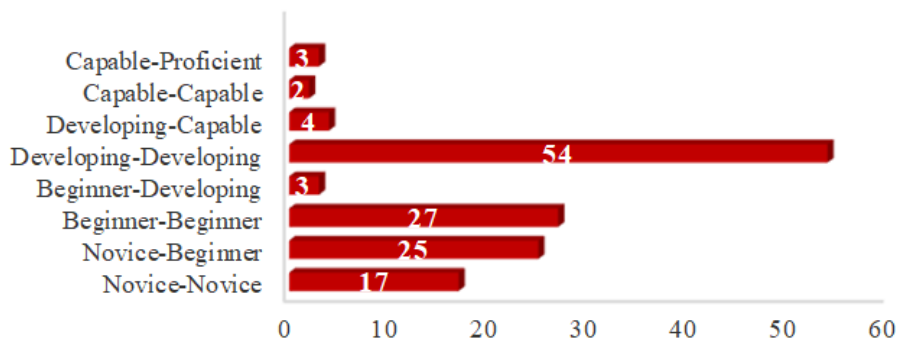


Table 2.2.1 Level of defense style in terms of timing of blocks and defenses before and after the implementation of the module.

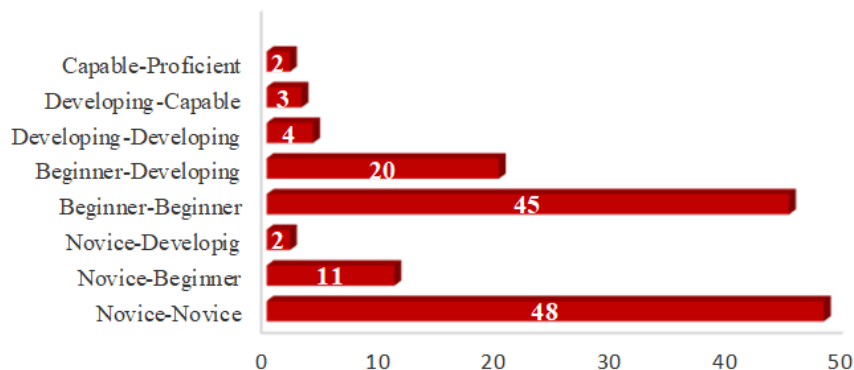


Table 2.2.2 Level of defense style in terms of efficiency of blocks and defenses before and after the implementation of the module.

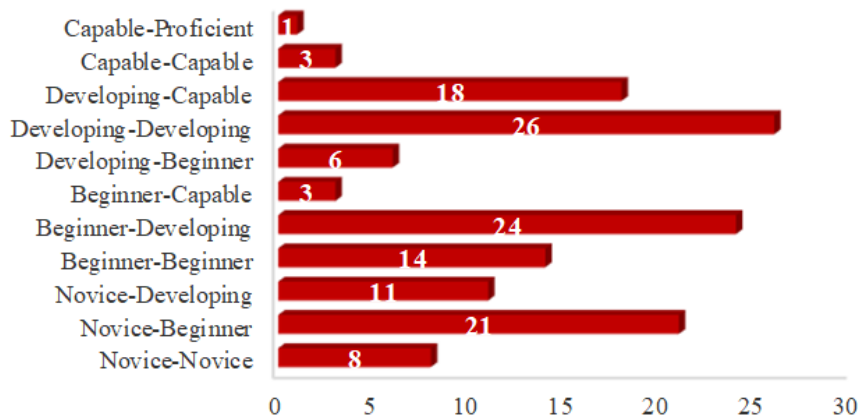


Table 2.2.3 Level of defense style in terms of awareness of blocks and defenses before and after the implementation of the module.

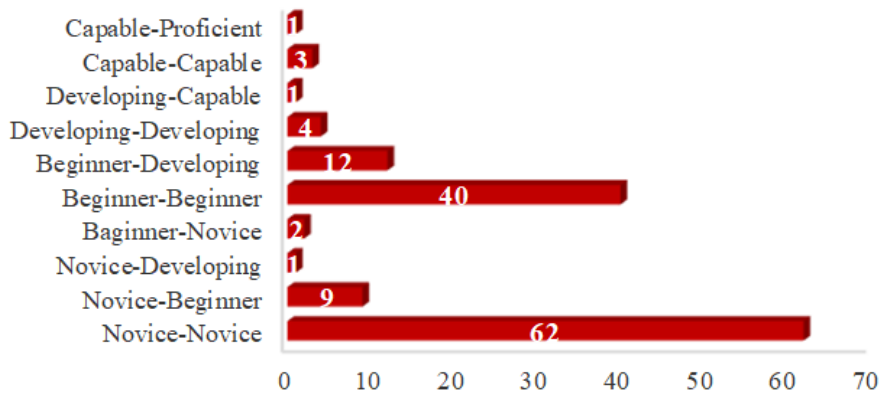


Table 2.3.1 Level of defense style in terms of timing of blocks and defenses before and after the implementation of the module.

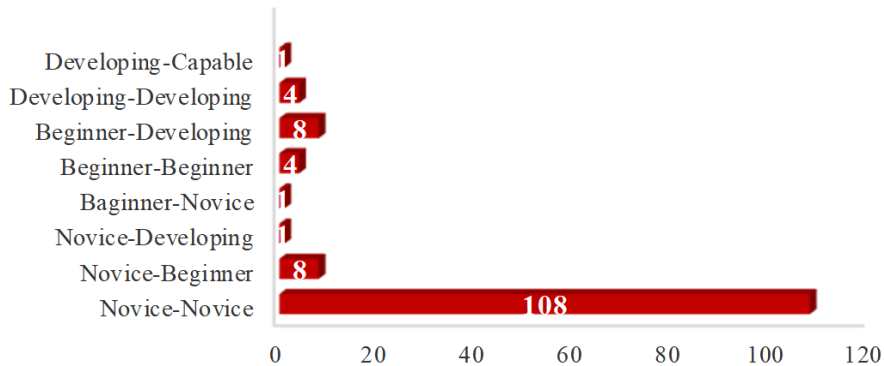


Table 2.3.2 Level of defense style of the students in terms of escape before and after the implementation of the module.

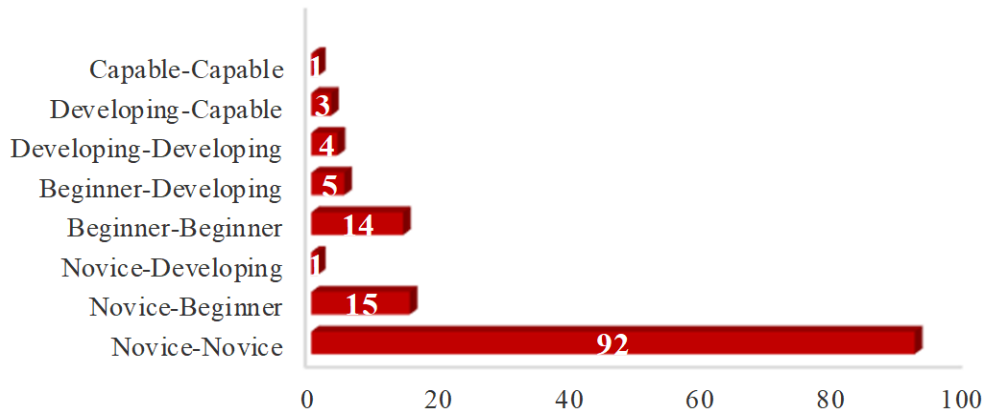


Table 2.3.3 Level of defense style of the students in terms of takedown before and after the implementation of the module.

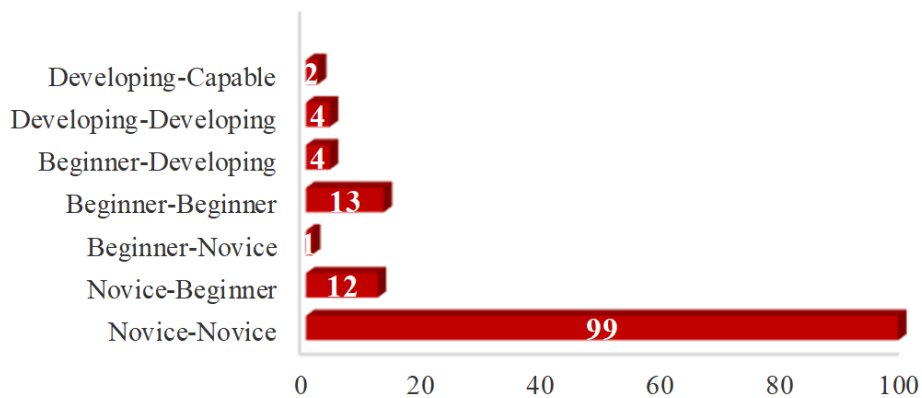


Table 3. Mean Difference between the pretest and post-test scores of the study participants.

Modules	Mean		Gain Score
	Pre-test	Post-test	
Module 1	7.87	8.76	1.68
Module 2	7.15	7.81	1.70
Module 3	6.53	7.39	2.00
Module 4	5.32	6.21	2.31
Total Score	26.87	30.18	6.99

Table 4. Comparison on the level of defense style of the study participants before and after the implementation of the module.

Skills		Mean	Median	Wilcoxon W	p-value	Effect Size
Strikes and Power	Before	6.50	6	28.0 ^a	<.001	-0.992
	After	7.87	8			
Blocks and Defenses	Before	5.33	6	236.0 ^b	<.001	-0.903
	After	6.43	6			
Takedown and Scape	Before	3.66	3	24.0 ^d	<.001	-0.932
	After	4.10	3			
Total Score	Before	15.48	15	60.0^e	<.001	-0.985
	After	18.41	18			

Note.

^a 20 pair(s) of values were tied

^b 37 pair(s) of values were tied

^d 98 pair(s) of values were tied

^e 9 pair(s) of values were tied

Table 5.1 Model Fit Measures of the Regression Model

Model	R	R ²	Adjusted R ²
1	0.0728	0.00530	-0.00218

Table 5.2 Model Coefficients

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	19.186	1.067	17.983	<.001	
Gain Scores	-0.236	0.280	-0.842	0.401	-0.0728

Table 6. Comparison on the level of defense style of the study participants after the implementation of the module in terms of their profile.

Variable	Category	Mean	Median	Kruskal Wallis χ^2	p
Gender	Male	21.4	20.5 ^A	24.2	<0.001
	Female	16.2	15 ^B		
	LGBTQ+	16.4	15 ^B		
	Underweight	15.0	14 ^A		
Body Mass Index	Normal	20.5	19 ^B	22.4	<0.001
	Overweight	16.0	15 ^A		
	Seldom	14.4	14 ^A		
Physical Engagement	Sometimes	17.6	19 ^B	32.4	<0.001
	Frequently	23.1	21 ^C		
	Urban	17.4	17 ^A		
Residency	Peri-Urban	15.0	14 ^A	16.1	<0.001
	Rural	21.4	21 ^B		

Discussions

The information on Table 1 shows that most of the respondents were male (41.5%), with the majority falling under normal in their body mass index (56.1%). Almost a half were regularly engaged in physical activities (48.1%), and most students resided in urban areas (54.1%). These findings suggest that the participants were generally healthy, active, and well-prepared for structured physical activities such as self-defense training. As to pre-assessment that shows in different sub-tables of table 2, most students performed as the novice to developing skills across the three dimensions. After the implementation of the module, their post-assessment ratings improved significantly, with many reaching capable to proficient levels. This progression indicated that the module was effective in enhancing the accuracy, power, awareness, efficiency, timing, control, and technical application of self-defense skills.

Table 3 shows the posttest scores of the students that were consistently higher than their pretest scores, a finding that clearly demonstrates the improvement of the students' performance across all four modules. Like in the Module 1, from a pretest score of 7.87 to a posttest score of 8.76 that showed the highest overall gap same in the fourth module moving from 5.32 to 6.21 mean, while Module 2 registered the lowest percentage of improvement, going from 7.15 to 7.81. This consistent upward trend across the board indicates that the students gained a better understanding of the lessons and developed stronger self-defense knowledge and application after completing the module-assisted training.

While in the comparison between the pre-assessment and post-assessment, results showed a statistically significant improvement in the students' level of defense style which is evident by the increase in mean and median scores seen in Table 4. This improvement was especially visible in the strikes and power dimension, which rose from 6.50 to 7.87, and this finding is further supported by the Wilcoxon W value and p-value being below the 0.05 significance level, confirming that the students performed better in the post-assessment.

The model fit measures and regression coefficients showed that while improvements were evident, the gain scores did not significantly predict the students' posttest levels of defense. It reveals in Table 5, a very weak relationship between gain scores and the posttest defense style, as indicated by the low correlation coefficient ($R = 0.0728$); consequently, the gain scores do not significantly predict the posttest defense level,

with the coefficient of determination ($R^2 = 0.00530$) showing that only 0.53% of the variance is explained, which suggests the gain scores have almost no predictive utility. Furthermore, in table 5.2 shows that the predictor variable, gain scores, has a negative estimate (-0.236) with a non-significant p-value of 0.401, confirming that even though the students improved overall, these gain scores were not strong predictors of their final posttest defense skill levels.

In terms of the significant difference of the post-assessment scores of the students when they are grouped according to their profiles evident in Table 6, male students demonstrated the highest post-assessment performance with a mean of 21.4, outperforming their female and LGBTQ+ peers. Students with a normal BMI also scored highest mean of 20.5, suggesting better movement efficiency than those classified as overweight or underweight. Furthermore, students engaged in regular physical activities achieved a significantly higher mean score of 23.1 compared to those with limited engagement. Lastly, students residing in rural (21.4) areas showed a slight performance advantage over their urban and peri-urban counterparts. These differences clearly highlight the importance of considering factors such as gender, health status (BMI), activity level, and environment when designing and implementing physical education interventions.

Conclusions

The demographic profile of the Grade 7 students showed that most respondents were female, had a normal BMI classification, were engaged in regular physical activities, and mostly resided in urban areas. This indicated that the participants were generally healthy and physically capable of undergoing training, which made them suitable subjects for a module-assisted self-defense program in the Physical Education setting.

In terms of skill development, the findings revealed that students started at novice to developing levels in strikes and power, blocks and defenses, and takedown and escape. After the implementation of the module, their post-assessment results significantly improved, with many advancing to capable and proficient levels. The gain scores in each of the four modules also showed consistent improvements, confirming that the students not only acquired knowledge but were also able to apply it effectively. Moreover, statistical tests confirmed a significant difference between the pre-assessment and post-assessment results, proving that the intervention was effective in improving the self-defense skills of the participants.

On the other hand, the regression analysis revealed that gain scores did not significantly predict posttest performance, suggesting that while students improved overall, other factors may have contributed to their outcomes. Finally, the post-assessment revealed that there is significant difference in the level of defense style when grouped according to their profile. Males, students with normal BMI, those who engaged in regular physical activities, and those from rural areas generally performed better than their counterparts. This highlighted that personal and environmental factors play a role in the acquisition and application of self-defense skills, emphasizing the need for flexible approaches when integrating such modules into the curriculum.

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