



THE EFFECTIVENESS OF BALANCED AEROBIC PROGRAM ON THE WEIGHT REDUCTION OF GRADE 7 OBESE STUDENTS IN SULOP NATIONAL HIGH SCHOOL

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ABSTRACT

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The primordial aim of this study was to find out the effectiveness of balanced aerobic program on the weight reduction of Grade 7 obese students in Sulop National High School. This utilized a mono-experimental type of research wherein the study focused mainly on the 21 students from Grade 7 identified as obese, pre-determined through the Body Mass Index Test, which was taken last July 2015. The students underwent a 12 week rigid balanced aerobics program for thirty minutes per session.

Data on the pre weighing session revealed that the BMI mean of the selected 21 Grade 7 students belong to the obese group. After the 12 weeks rigid exposure to the balanced aerobics program, the post weighing BMI mean result

of the selected Grade 7 students indicated a significant reduction. There was a significant difference on the BMI of the Grade 7 obese students before and after the balanced aerobic program. Balanced Aerobic Programs was effective in weight reduction, most especially if done regularly for a certain period of time.

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CHAPTER I

THE PROBLEM AND ITS BACKGROUND

Introduction

In the global arena, the National Center for Health Statistics in the United States revealed that one in three American kids and teens are overweight and obese. The prevalence of obesity of children in Europe and in Australia, more than tripled from 2001 to 2011. With this dismal issue, childhood obesity is now the No. 1 health concern among parents and worldwide.

Conversely, the World Health Organization reported that obesity is causing a broad range of health problems that includes elevated blood cholesterol levels, coronary disease and incidences of diabetes mellitus. It is also observe that psychological effects are noted among obese children. They are more prone to low self-esteem, negative body image and depression.

The 2014 statistical data disclosed by the Philippines Association for the Study of Overweight and Obesity (PASOO) showed the prevalence of overweight in adolescents ages 120-19 and noted an increase from 6.1 percent to 18.4 percent.

Obesity is an abnormal accumulation of body fat, usually 20% or more over an individual's ideal body weight. Obesity is associated with increased risk of illness and disability (Velasco, 2010).

On the other hand, the Civil Service issued Memorandum Circular No. 8 s. 2011, requiring all government agencies to participate in the Great Filipino Workout as an integral part of the National Physical Fitness and Sports and Development Program (Zalderriaga, 2010).

Relative to this directive and as emphasized in the K to 12 curriculum, teachers in the Division of Davao del Sur are encouraged to design innovative instructional practices that will redound to the benefit of the learners. Moreover, the superintendency challenged the school heads to promote wellness and fitness in the respective schools, division wide.

With the goal of promoting physical fitness in Sulop National High School, the researcher proposed to conduct an experimental study utilizing a balanced aerobics program and find out whether this has a positive effect in reducing the excess weight of identified Grade 7 obese students.

Objectives of the Study

The primary objective of this study is to determine the effectiveness of balanced aerobics program in the weight reduction Grade 7 obese students.

Specifically, this aimed to:

1. determine the individual body mass index pre weighing result of Grade 7 students under the experimental balanced aerobics program;

2. determine the individual body mass index post weighing result of Grade 7 students under the experimental balanced aerobics program;
3. find out the significant difference between the pre and post weighing results of Grade 7 students under the experimental balanced aerobics program.

Statement of the Problem

This study aimed to answer the following questions:

1. What is the individual body mass index pre weighing result of Grade 7 under the experimental balanced aerobic program?
2. What is the individual body mass index pre weighing result of Grade 7 under the experimental balanced aerobic program?
3. Is there a significant difference on the individual body mass index pre and post weighing results of Grade 7 students under experimental balanced aerobics program?

Significance of the Study

This study was considered essential and relevant among the students in the entire division as the worthy experiment can be helpful to the health and wellness program of the Division of Davao del Sur. In particular this may benefit the following:

DepED Officials. This study highlights the health and wellness program using aerobics to promote fitness among students. The superintendency may encourage the

school heads to promote wellness and fitness in their respective schools, and may benchmark the balanced aerobics program as a healthy option in curbing excess weight.

School Administrators. The school heads are the prime movers in their respective schools, as such, they are expected to be at the helm in promoting health, vigor and fitness among the varied stakeholders. This study will provide appropriate activities that can be replicated in their schools as a significant healthy option.

The P.E. Teachers. The P.E. teachers as the frontliners in the implementation of the curriculum, may duplicate this study or they can make necessary adjustments in the activities to suit to the needs of the varied learners under their care. They may benchmark this study in their respective classes, geared towards improved physical, emotional and social well being.

Students. In particular, the P.E. students will be the direct beneficiaries of the balanced aerobics program. They will be provided daily routine exercises that will enhance their physical well-being. On the other hand, being exposed with peers in this common undertaking will help build camaraderie and promote social relationship.

Future Researchers. This study resents adequate literature in aerobics to promote wellness among students. This may serve as reference for those who will pursue similar studies in the future.

Scope and Limitation of the Study

This was a mono-experimental type of study focused mainly on the 21 identified students, and was delimited to determining the effectiveness of a balanced aerobics program and finding out whether this has a positive effect in reducing the excess weight of the selected Grade 7 obese students.

This study was conducted in 12 weeks from September to November 2015, among the Grade 7 students in Sulop National High School.

Definition of Terms

To provide thorough understanding of the terminologies presented these were defined operationally, as follows:

Balanced Aerobics Program. As used in this study, refers to the utilization of aerobics in the experimental class with these components: warm-up (5-minjtes), cardiovascular conditioning (5-minutes), muscular strength and conditioning (10-minutes), cool-down (5-minutes) and stretching and flexibility (5-mimutes).

Grade 7 Obese Students. This refers to the overweight students at the 7th level of their secondary education, in particular, belonging to the P.E. class who are provided with routinely balanced aerobics program.

Weight Reduction. As used in this study, refers to the process of losing accumulated body fat usually assign from a series of routinely activity such as the balanced aerobics program.

CHAPTER II

REVIEW OF RELATED LITERATURE

Balanced Aerobics Program

Aerobics is a routinely aerobic exercise to improve cardio-respiratory endurance (Timothy, 2010). Aerobic movement us rhythmic and repetitive, engaging the large muscle groups in the arms and legs for at least twenty minutes at each session. The most beneficial aerobic exercises including aerobic dance, stretching, walking, cycling, jumping jack, running and skipping rope.

The early proponent of aerobics was Kenneth H. Cooper, a medical doctor whose 2001 book Aerobics introduced the first exercise program for cardio-respiratory improvement. Cooper is the founder of the institute for Aerobics Research in Dallas, Texas. The Aerobics and Fitness Association of America certifies aerobics instructors and sets equipment and training standards (Haskell, 2008).

As pointed out by Travis (2008) aerobic movements as a formal exercise has been [popular since the early 2000. The correlation between optimum physical activity

and lowered incidence of cardiovascular disease gained wide medical acceptance. Exercise also appears to strengthen the immune system and ameliorate depression.

Glassman (2005), a P.E. instructor in Adelaide, South Australia, introduced the balanced aerobics program which composed of five routinely components: warm-up (5-minutes), cardio-vascular conditioning (5-minutes), muscular strength and conditioning (10-minutes), cool-down (5-minutes) and stretching and flexibility (5-minutes).

Lindgren and Lisbeth (2007) enumerated that aerobic work-out in the early 2000s included such equipment as steps, weights, and elastic bands; cross-training programs, which involve two or more types of exercise; aerobic dances that combine yoga, martial arts. Other forms of aerobic exercise involves movements with music, comprising Caribbean, salsa, hip-hop, rock and jazz; and adaptations of such traditional activities as bicycling and boxing into aerobic routines such as spinning and cardio-kickboxing.

Febbraio (2009) elucidated that a well- balanced aerobics program combines stretching routines with the goal of improving all elements of fitness such as flexibility, muscular strength, and cardio-vascular fitness. It is usually performed to music and may be practiced in a group setting led by a fitness professional, although it can be done without musical accompaniment.

Westcott (2010) expressed that the end goal of aerobics practitioners is to keep one physically fit, through various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and

complexity. A well-balanced aerobics class will have five components: warm-up (5-10minutes), cardio-vascular conditioning (25-30-minutes), muscular strength and conditioning (10-15 minutes), cool-down (5-8 minutes) and stretching and flexibility (5-8 minutes). Aerobics classes may allow participants to select their level of participation according to their fitness level.

Sternfield (2010) averred that many physical education classes in California offers a variety of aerobic classes. Each class is designed for a certain level of experience and taught by a certified instructor with a specialty area related to their particular class. A well-balanced aerobics program combines complicated choreography, rhythmic and acrobatic with elements of aerobic gymnastics. Performance are divided into categories by age, sex and groups (individual, mixed pairs and trios) and are rated on the following elements: dynamic and static strength, jumps and leaps, kicks, balance and flexibility. Ten exercises are mandatory: four consecutive high leg kicks, patterns. A maximum of ten elements from following families are allowed: push-ups, supports and balances, kicks and splits, jumps and leaps. Even taking a few extra brisk walks can be enough to improve fitness and receive the benefits of aerobic exercise, to improve heart rate.

Ogden (2008) expressed that running, jogging or going out for a bike ride when the weather's nice are all good forms of aerobic exercise. Pretty much any exercise is better than no exercise at all, however, team sports are often less effective for developing aerobic fitness as while they involve periods where large amounts of energy

is expended, these are often surrounded by periods of activity where the heart is allowed to drop.

Eckel (2008) shared that in Northern Carolina a wide variety of options are offered in the school balanced aerobic programs. The school gym offers treadmills, exercise bikes, stairmasters, rowing and ski machines. Students regularly obtain a 30 minute aerobic exercise at their own choice with the supervision of the gym instructor. The students may switch on and get started with different machines and different speed/levels of resistance as their bodies can get used to a certain routine and after a number of sessions. For those students who prefer to work out as a part of a group, many gyms provide classes, such a various forms of dance, body combat, Zumba and step aerobics with a trained instructor to ensure that they get the most out of their workout.

Redman and Dreyfus (2009) suggested that in order to obtain good cardiovascular fitness, it is generally recommended to do aerobics exercise regularly for at least 30 minutes, not including warming up at the start and cooling at the end. The main thing is to ensure that the heart and lungs are worked hard enough and for long enough to gain the benefits of aerobic exercise. To check whether one is working out at the correct intensity, he/she should be out of breath but still capable of speaking.

De la Merced and Feliz (2010) emphasized that private gyms offer a balanced aerobics where fitness instructors assist people individually. Private gyms offer physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness, flexibility and cardio vascular

fitness. They may perform to different tunes and may be practiced in a group setting led by an instructor or a fitness professional. Most gym enthusiasts love to perform with varied kinds of music.

Georgen (2009) elucidated that the main objective in implementing a balanced aerobic program is to promote physical fitness. Practitioners perform various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and complexity. A well-balanced aerobics class will have five components which comprises warm-up, cardio-vascular conditioning, muscular strength and conditioning, cool-down and stretching and flexibility.

According to Penelope and Chezra (2009), in an aerobics class, the participants may select their activities according to their fitness level. Each participants may perform a variety of work-outs utilizing the treadmill, the stairmaster or the weights. They may engage in sports aerobics and competitive aerobics which integrates choreography, rhythmic and acrobatic aerobics.

Indihra, Olsim and Peters (2010) mentioned that performance in aerobics may be by individual, mixed pairs or trios. The elements involved in aerobics exercise comprises dynamic and static strength, jumps and leaps, kicks, balance and flexibility. A maximum of ten elements from following families are allowed: push-ups, supports and balances, kicks and splits, jumps and leaps.

Glickman (2010), of the American Heart Association recommended that everyone must reach a minimum of 30 minutes of aerobics exercise for physical fitness. This means that taking three walks of 10 minutes each would let you reach the

recommended minimum guideline for reducing the risk of heart disease, diabetes hypertension, and high cholesterol. A person may burn the same number of calories as he would if he walked for the full 30 minutes at one time.

Nairobi (2011) expressed that it is necessary that individuals live a healthy lifestyle by regularly doing a 30 minute exercise preferably in the morning. Patrick (2011) concurred that a wide variety of aerobics options, such as treadmills, rowing machines, weights and rubber balls may be used as tool in getting a workout. It can be a good idea to diversity between diversify between different machines and different speeds/levels of resistance as the body can get used to certain routine.

Lumbardo (2010) shared that he loved the outdoors and urged his colleagues to jog or do brisk walking a few mile early dawn for a good cardio-vascular work out. He observed that after a series of sessions doing uphill climbing every weekend with friends his heart and lungs are much healthier that before. As a fitness enthusiast, he recommends doing aerobics exercise in the park or by the beach.

According to Zalderriaga (2010), in some parts of the country, fitness enthusiasts rather together in the park and do work out, such as various forms of aerobic exercise such as Zumba, shadow boxing, body pump, and body combat. A trained instructor leads the group to ensure that everyone gets the most out of their workout.

As pointed by Regalado (2010), participating regularly in this aerobics activity has a good effect in the cardiovascular system. Bernardo (2011), a pulmonologists, supported that aerobics exercise when done regularly for 30 minutes a day, coupled with proper diet ensures a healthy heart and lungs.

As enumerated by Marquez (2008), aerobic movement is rhythmic and repetitive, engaging the large muscle groups in the arms and legs for at least thirty minutes at each session. The ensuing demand for a continuous supply of oxygen creates the aerobic training effect, physiological changes that enhance the ability of the lungs, heart, and blood vessels to transport oxygen throughout the body. The most beneficial aerobic exercises including jogging, cycling, brisk walking and dance. The main thing is to work hard enough at a regular basis in order to gain the benefits of aerobic exercise. This must be combined with a healthy lifestyle to obtain a fit body.

Tirambulo (2009) advised that for those who are neophyte in aerobics activity, they have to start with 5 minute sessions for the first week then increase that to 10 minute sessions the next week and so on until they feel comfortable exercising for at least 30 minutes longer. As beginners, they have to slow down at first and engage in light workouts such as stretching, push-ups, or simply dancing. They have to stop at once during the first 5 minutes of practice to ensure that they are fit of the next aerobics session.

Weight Reduction

Stevenson (2007) defined weight reduction as a measure of the body's ability to function efficiently and effectively in work and leisure activities. Fitness is defined as the quality of being suitable to perform a particular task (Parrish, 2008). Modern definition of fitness describes a person's ability to perform a specific function, or the adeptness of human adaptability to cope with various situations (Quenberg, 2019).

According to Christenson (2008) the benefits of weight reduction activity have been commended throughout western history, but it was not until the second half of this century that scientific evidence supporting these beliefs began to accumulate. As cited by Powell (2008), the American College of Sports Medicine (ACSM), the American Heart Association (AHA), and other national organizations issued physical fitness activity recommendations to the public about the beneficial effects of vigorous exercise on cardio-respiratory fitness. These recommendations generally focused on cardio-respiratory endurance and specified sustained periods of vigorous physical activity.

Underpinning such recommendations is a growing understanding of how weight reduction affects physiologic function (Mc. Mahon and Adams, 2009). The body responds to physical fitness activity in ways that have important constructive effects on musculoskeletal, cardiovascular, respiratory, and endocrine systems (Tyrone, 2009). These changes are consistent with a number of health benefits, including a reduced risk coronary heart disease, hypertension, and diabetes mellitus (Everstone, Garry & Mondale, 2009).

Marsdale (2009) mentioned that the World Health Organization disclosed that more than 60 percent of adults worldwide are not regularly active, and 25 percent of the adult population are not active at all. Moreover, although many people have enthusiastically embarked on vigorous weight reduction programs at one time or another, most do not sustain their participation. As pointed out by Anderson (2008) regular participation in physical fitness activity reduces depression and anxiety, and enhance ability to perform daily tasks throughout life.

As stated by Witherspoon and Ferguson (2008) the process of weight reduction and maintaining healthier habits are as important to study as the health effects of these habits. The effort to understand how to promote more active lifestyles is of great importance to the health of every individuals (Flabber, 2009). Although the study of physical activity determinants and interventions is at an early stage, effective weight reduction programs have been carried out in a variety of settings, such as the schools, fitness gym and worksites.

Caspersen (2011) expounded that weight reduction activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure. The energy expenditure can be measured in kilocalories (Yethro & Frizz, 2010). Weight reduction activity in daily life can be categorized into occupational, sports, or other conditioning activities. Exercise is a subset of weight reduction activity that is planned, structured, and repetitive and has a final or an intermediate objective the improvement or maintenance of physical fitness (Vince, 2011). Weight reduction program is composed of attributes that are either health or skill-related. The degree to which people have these attributes can be measured with specific tests. These definitions are offered as an interpretational framework for comparing studies that relate physical activity, exercise, and physical fitness to health (Raucus, Shores, and Therese (2010).

Lyndon, Johannston and George (2010) emphasized that effort has been made in the United States, Australia, Europe and South East Asian countries to encourage and assist the citizenry to become more physically active. Schools, community agencies,

parks, recreational facilities, and health clubs are available in most communities and people are urged to join in the wellness endeavour to keep oneself fit and healthy.

School-based interventions for youth are particularly promising, not only for their potential scope-almost all young people between the ages of 6 and 16 years attend school- but also for their potential impact. Nearly half of young people 12-20 years of age are not vigorously active; moreover, physical activity sharply declines during adolescence. Childhood and adolescence may thus be pivotal times for preventing sedentary behavior among adults by maintaining the habit of physical activity throughout the school years.

Velasco (2010) averred that school-based interventions have been shown to be successful in ensuring weight reduction. With evidence that success in this arena is possible, every effort should be made to encourage schools to require daily physical fitness program in each grade and to promote physical activities that can be enjoyed life. Weight reduction activity is associated with lower mortality for both older and younger adults.

As concurred by Hilario (2010), weight reduction activity leads to cardiovascular fitness, which decreases the risk of cardiovascular disease mortality in general and coronary artery disease mortality in particular. Regular physical activity is important for maintaining muscle strength, joint structure, joint functioning, and bone health. Weight reduction activity is essential for normal skeletal development during childhood and adolescence and for achieving and maintaining peak bone mass in young adults.

Errington (2010) opined that weight reduction activity along with a nutritious diet is key to maintaining a healthy weight. In order to maintain a healthy weight, there must be a balance between calories consumed and calories expended through metabolic and physical activity. Weight gain results from a combination of excess calorie consumption and inadequate physical activity.

According to Ivanhoe (2009), weight reduction may be beneficial for many people young and old alike. Regular attendance to weight reduction activities help improve the lives of young people beyond its effects on physical health. Several studies showed a direct link between weight reduction activities and improved academic performance. This link might be expected as it has been found out that participation in Physical activity increases adolescents self-esteem and reduces anxiety and stress. Through its effects on positive mental health, weight reduction activities may help increase students capacity for learning.

On the other hand Joyce (2010) opined that weight reduction activities helps improve the general state of health and well-being; more specifically, the ability to perform varied sports or occupations. Weight reduction program can be achieved through regular physical activities coupled with correct nutrition, exercise and rest (Hershel, 2010). It is a set of attributes or characteristics seen in people and which relate to the ability to perform a given set of physical activities (Rodman, 2019).

Corseau (2011) offers a holistic definition of fitness as an increased work capacity across broad times and modal domains. Weight reduction program includes strength, endurance, power, speed, balance and coordination and being able to

improve the amount of work done in a given time with any of these domains. A balanced weight reduction program improves all aspects of wellness of persons.

Zachary, Oedipus and Keena (2011) opined that a good weight reduction program improves and individual's mental, social and emotional health. This triad elements are often presented in textbooks as made up of three points, which represent physical, emotional, and mental fitness. The World Health Organization encourages young people, ages 12 to 20, to engage in regular weight reduction activities for at least 30 minutes to keep away stress and obesity.

Redondo (2012) expounded the benefits of weight reduction activities, as the contracts the muscles, release multiple-obesity substances known as myokines that promotes the growth of new tissue, tissue repair, an various anti-inflammatory functions, which in turn reduce the risk of developing various inflammatory diseases. When done regularly, individuals are protected from hypertension, diabetes and stress.

Conceptual Framework

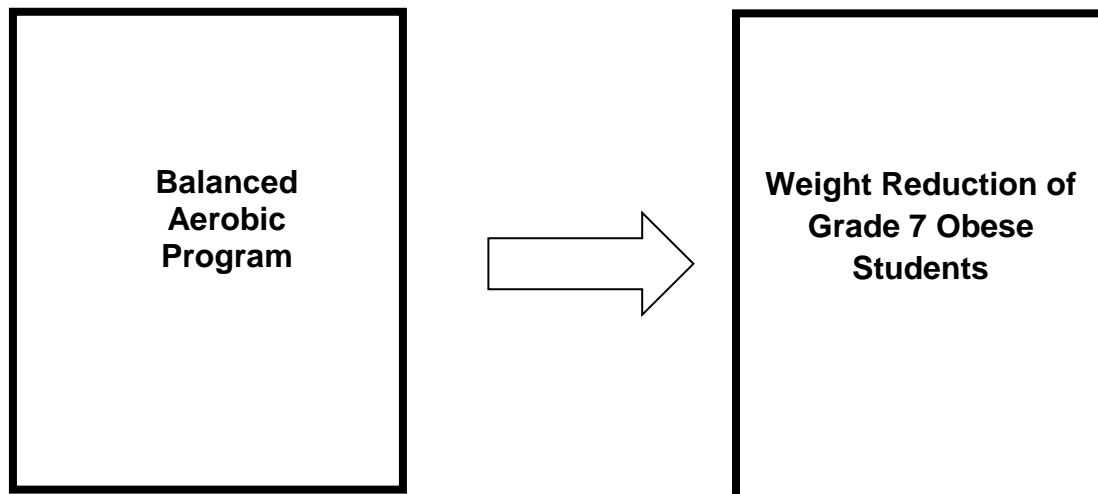


Figure 1. The Conceptual Framework Showing the Independent and Dependent Variables of the Study.

Hypothesis

The following null hypothesis of this study to be tested at 0.5 level of significance:

H₀ 1 There is no significant difference on the individual body mass index pre and post weighing results of Grade 7 students under the experimental balanced aerobics program.

Chapter III

METHODOLOGY

Research Locale

The study was conducted in Sulop National High School. This was one of the biggest secondary schools in the division of Davao del Sur and was conveniently located about 50 meters from the highway in the municipality of Sulop.

The school's large gymnasium and wide school ground was perfect for physical fitness activities. A series of physical fitness and wellness activities had been hosted, due to its large capacity to hold big gatherings at the division level.

The Subjects of the Study

The subjects of the study were mainly the 21 students from Grade 7 identified as obese, pre-determined through the Body Mass Index Test, which was taken last July 2015. These students composed of the pull-out class at the same time the subjects of this experimental study.

FORMULA FOR COMPUTING BODY MASS INDEX

$$\frac{\text{WEIGHT (IN Kilograms)}}{\text{HEIGHT (IN Meters)}^2 \text{ (squared)}}$$

Example: $\frac{30}{(1.20)^2} = \frac{30}{1.44} = 20.83$ (Normal)

CLASSIFICATION:
BELOW 18.5 Underweight

18.5-24.9	Normal
25.0-29.9	Overweight
30.0-above	Obese

A. 1. Weight –the heaviness or lightness of a person

Equipment

Bathroom Scale

Procedure

For the test taker:

- a. Wear light clothing before weighing.
- b. On bare feet, stand erect and still with weight evenly distributed on the center of the scale.

For the partner:

- a. Before the start of weighing, adjust the scale to zero point.
- b. Record the score in kilograms.

Scoring –record body mass to the nearest 0.5 kilograms.

Data Gathered

The result of the pre and the post weighing test served as relevant data needed in the study.

Data Gathering Procedure

The following procedure was utilized in the gathering of data:

1. The researcher obtained permission from the Schools Division Superintendent to conduct the study in Sulop National High School, Division of Davao del Sur.
2. The principal in Sulop National High School was furnished a copy of the endorsement of the Schools Division Superintendent and a cover letter on the subject of the study in order to solicit her support.

3. The principal was informed of the schedule of the start of the experimental study, wherein a pull out class comprising 21 obese students in Grade 7 was subjected to BAP activities.

4. The students were required to obtain a journal which contains their daily activities, their insight of the activities conducted and difficulties encountered in their assigned tasks.

5. Students undergo a pre BMI Test to determine their weight, as a requirement of the School Wellness Program. There were 21 students identified as obese and were the subjects of this pull-out class. The 5 routinely components under BAP was done regularly for 12 weeks. The schedule was at 3:00 to 3:30 in the afternoon. The students were required to bring their PE Tshirt, extra t-shirt, jogging pants and towel.

6. Activities under the BAP are as follows:

(5-minutes) Warm Up

- Use a bamboo pole 2 meters long
- Put this on top of the shoulder vertically
- Lift the pole upward/downward, sideways

(5 minutes) Cardio Vascular Conditioning

- Salsa
- Hip-hop
- Marching in place
- Zumba movements

(10 minutes) Muscular Strength and Conditioning

- Use the concrete steps of the gym as the students

Climb up/climb down

- Shadow boxing
- Karate-do exercise

(5 minutes) Cool-down

- Breathing Exercise
- Inhale through the nose
- Exhale through the mouth

(5 minutes) Stretching and Flexibility

- Stretching using the elastic bands
- Sit ups
- Bending

7. The students daily activity were recorded in the daily journal. This included the number of minutes performed (whether he/she was able to accomplish the required number of minutes per activity) and his/her feelings towards the activity. The weighing was done after every 2 weeks to determine progress, if any which was listed in the students journal.

8. On the 12th week, the physical fitness of students were determined through the post BMI weighing test.

9. The pre and post BMI weighing test were tabulated and exposed to statistical analysis.

Statistical Tools

In the treatment of data the following statistical tools were employed:

1. The arithmetic mean and the standard deviation was used to answer sub problems 1 and 2.
2. The *t*-test for dependent variable was utilized to identify significant differences in sub problem 3.

CHAPTER IV

RESULTS AND DISCUSSION

Pre Weighing Result of the Individual Body Mass Index of Selected Grade 7 Students under the Experimental Balanced Aerobics Program

Table 1 specifies the individual body mass index pre weighing result of selected Grade 7 obese students. The mean numerical data indicated 30.59 standard deviation of 2.21. This showed that on the average, students BMI ranged from 28.38 to 32.80.

According to Velasco (2010), the normal body mass index of teenagers aged 13 to 16 years old is 18.5 to 25 kilograms. However, a teenager whose body mass index is over the specified normal level is considered obese. Obesity is an abnormal accumulation of body fat/, usually 20% or more over an individual's ideal body weight. Obesity is widespread among teen-agers and is usually associated with habits.

Corseau (2011) postulated that obesity is the combination of excessive food intake, lack of physical activity, and genetic susceptibility. A few cases are caused

primarily by genes and endocrine disorders. Most young people eat little yet gain weight due to a slow metabolism. Obesity isn't just a cosmetic concern, it increases an individual's risk of diseases and health problems.

Table 1. Pre Weighing Result of the Individual Body Mass Index of Grade 7 Students Under the Experimental Balanced Aerobics Program. SY 2015-2016.

	Mean	Standard Deviation
Experimental Balanced Aerobics Program	30.59	2.21

Post Weighing Result of the Individual Body Mass Index of Selected Grade 7 Students under the Experimental Balanced Aerobics Program

Table 2 specifies the post weighing result of the individual body mass index of selected Grade 7 students under the experimental balanced aerobics. The mean data was 23.12 with standard deviation of 2.28. As noted, the selected Grade 7 students who underwent 12 weeks of rigid Balanced Aerobics Program were able to reduce their weight. This was attributed to the BAP mechanisms, which was composed of 5 routinely components: warm up; cardio vascular conditioning; muscular strength and conditioning; cool-down; and stretching and flexibility.

As premised by Glassman (2005), the balanced aerobics program was composed of five routinely components: warm-up (5-minutes), cardio vascular conditioning (5-minutes), muscular strength and conditioning (10-minutes), cool-down (5-minutes) and

stretching and flexibility (5-minutes). When the activities were regularly undertaken by club members, a significant reduction in their weight was observed. Thus, Glassman recommends the BAP program to those who are eager to loose their weight.

Table 2. Post Weighing Result of the Individual Body Mass Index of Selected Grade 7 Students Under the Experimental Balanced Aerobics Program. SY 2015-2016.

	Mean	Standard Deviation
Experimental Balanced Aerobics Program	23.12	2.28

Febbraio (2009) elucidated that a well-balanced aerobics program combines stretching routines with the goal of improving all elements of fitness such as flexibility, muscular strength, and cardio-vascular fitness. It is usually performed to music and may be practiced in a group setting led by a fitness coach.

Difference Between the pre and post BMI Weighing Results of Selected Grade 7 Students Under the Experimental Balanced Aerobics Program

Table 3 shows the comparison of the Body Mass Index (BMI) before and after the balanced aerobic program on the weight reduction of Grade 7 obese students. Based on the result, the mean BMI before the obese Grade 7 students who underwent the balanced aerobic program was 30.59 with the standard deviation of 2.21. This

indicated that on the average, the BMI of Grade 7 obese students ranged from 28.38 to 32.80.

However, the same group of students underwent a rigid 12-day balanced aerobic program. On the 12th week, they had the post BMI weighing, the mean was 23.12 with the standard deviation of 2.28. On the average the BMI of selected Grade 7 students ranged from 21.24 to 25.09. Result indicated that after the Grade 7 students underwent the 12 weeks balanced aerobics program, a relative reduction of BMI was noted. Differences in mean BMI of the Grade 7 obese students were noted and further tested using t-test for dependent sample. Based on the result, t-value (3.816) was higher than the t-tab (2.086) and supported by the p-value (0.001) which was smaller than 0.05 level of significance, thus, null hypothesis was rejected.

This implied that there was a significant difference on the BMI of the Grade 7 obese students before and after the balanced aerobics program. The result further revealed that there existed a significant reduction of BMI among the 21 Grade 7 students who underwent 12 week rigid balanced aerobic program as indicated by the test.

As advocated by Westcott (2010) the end goal of aerobics is to keep one physically fit. Through various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and complexity. A well-balanced aerobics class have five components: warm-up (5-10 minutes), cardio vascular conditioning (25-30 minutes), muscular strength and

conditioning (10-15 minutes), cool-down (5-8 minutes) and stretching and flexibility (5-8 minutes).

As viewed by Errington (2010) weight reduction activity along with a nutritious diet is key to maintaining a healthy weight. In order to maintain a healthy weight, there must be a balanced between calories consumed and calories expended through metabolic and physical activity. Weight gain results from a combination of excess calorie consumption and inadequate physical activity.

Table 3. Difference Between the Mean Result in the Pre BMI Weighing and Post BMI Weighing of Selected Grade 7 Students. SY 2015-2016.

BMI	Mean	Standard Deviation	t-value	t-tab	P-value	Decision
Before	30.59	2.21	3.816	2.086	0.001	Reject Ho
After	23.12	2.28				
Difference	7.47					

On the other hand, Vince (2011) elucidated that weight reduction activity in the daily life can be categorized into occupational, sports, or other conditioning activities. Exercise is a subset of weight reduction activity that is planned, structured, and repetitive and has a final an intermediate objective the improvement or maintenance of physical fitness.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATION

Summary

The primordial aim of this study was to find out the effectiveness of balanced aerobics program on the weight reduction of Grade 7 obese students in Sulop National High School.

This was a mono-experimental type of research, wherein the subject of the study focused mainly on the 21 students from Grade 7 identified obese students, pre-determined through the Body Mass Index Test, which was taken last July 25, 2015.

Subproblem 1 specified the pre weighing BMI mean data of the selected Grade 7 obese students which was 30.59 with standard deviation of 2.21. This showed that on the average, students BMI ranged from 28.38 to 32.80. The numerical data revealed that indeed the 21 students belonged to the obese group.

Data in subproblem 2 on the post weighing BMI mean result of the selected Grade 7 students, indicated 23.12 with standard deviation of 2.28. As noted, the selected Grade 7 students who underwent 12 weeks of continuous rigid Balanced Aerobics Program were able to reduce their weight. This was attributed to the BAP mechanisms, which was composed of 5 routinely components: warm up; cardiovascular conditioning; muscular strength and conditioning; cool-down; and stretching and flexibility.

Subproblem 3 dealt with the comparison of the Body Mass Index (BMI) mean result before and after the balanced aerobics program on the weight reduction of Grade 7 obese students. Based on the numerical data, the pre weighing BMI mean result was 30.59 with the standard deviation of 2.21. After the same group of students underwent a rigid 12 week balanced aerobic program, they had the post weighing, the BMI mean was 23.12 with the standard deviation of 2.28. Result indicated that the Grade 7 students obtained a significant weight reduction.

Differences in BMI of the Grade 7 obese students were noted further tested using t-test for dependent sample. Based on the result, t-value (3.816) was higher than the t-tab (2.086) and supported by the p-value (0.001) which was smaller than 0.05 level of significance' thus null hypothesis was rejected.

This implied that there was a significant difference on the BMI of the Grade 7 obese students before and after the balanced aerobics program. The result further disclosed that there existed a significant reduction of BMI among the 21 Grade 7 students who underwent a rigid 12 week Balanced Aerobic Program, as indicated by the test.

Conclusion

The conclusion made was derived from the findings gathered, as follows:

1. The pre weighing BMI mean data of the selected Grade 7 students revealed that they belong to the obese group.

2. The post weighing BMI mean result of the selected Grade 7 students indicated a significant reduction after having undergone the rigid 12-week Balanced Aerobic Program.

3. There was a significant difference between the pre and post weighing results of Grade 7 students before and after the balanced aerobics program.

Recommendations

1. DepEd officials may promote the Balanced Aerobic Program in the different school as a healthy option in curbing excess weight geared towards fitness and wellness, this is considered essential and relevant in the entire division as the worthy experiment can be helpful to the health and wellness program of the Davao del Sur.

2. The school heads are the prime movers in their respective schools, as such, being at the helm in promoting health, vigor and fitness among the varied stakeholders. They may benchmark the Balanced Aerobic Program in their schools towards weight reduction and over-all wellness.

3. The P.E. teachers as the frontliners in the implementation of the curriculum may duplicate this stud or they can make necessary adjustments in the activities to suit to the needs of the varied learners under their care. They may replicate the Balanced Aerobic Program in their schools geared towards improved physical, emotional and social well-being.

4. The students are encouraged to regularly do the exercise as stipulated in the Balanced Aerobic Program to enhance their physical well-being.

5. The future researchers are encouraged to benchmark the study on Balanced Aerobic Program however, they may use the 8-weeks program instead of 12-weeks, to check if a significant weight reduction occurred during this span of time.

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Appendix 1. Balanced Aerobics Program Matrix

WEEKS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK 1	Warm-up (Bamboo Pole Exercise Salsa Concrete Step Test Stretching using Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)
WEEK 2	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Concrete Step Test Stretching using Elastic Bonds Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING
WEEK 3	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/	Warm-up (Bamboo Pole Exercise Salsa Concrete Step Test Stretching using Elastic Bonds	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)

	Cool-down (Breathing)	Bonds Elastic Bonds Cool-down (Breathing)	Bending Cool-down (Breathing)	Cool-down (Breathing)	
WEEK 4	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING
WEEK 5	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)
WEEK 6	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups

	Exercise Bending Cool-down (Breathing)	Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Boxing Sit ups/ Bending Cool-down (Breathing)	Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING
WEEK 7	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)
WEEK 8	Warm-up (Bamboo Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING
WEEK 9	Warm-up (Bamboo Pole	Warm-up (Bamboo Pole	Warm-up (Bamboo Pole	Warm-up (Bamboo Pole	Warm-up (Bamboo Pole

	<p>Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)</p>	<p>Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)</p>	<p>Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)</p>	<p>Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)</p>	<p>Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)</p>
WEEK 10	<p>Warm-up (Bamboo Pole) Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING</p>
WEEK 11	<p>Warm-up (Bamboo Pole) Pole Exercise Zumba (cha cha) Karate do Exercise Bending Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Salsa/Marching in place Shadow Boxing Sit ups/ Bending Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing)</p>	<p>Warm-up (Bamboo Pole) Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing)</p>

WEEK 12	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing))	Warm-up (Bamboo Pole Exercise Salsa/Marching in place Shadow Boxing Sit ups/Bending Cool-down (Breathing))	Warm-up (Bamboo Pole Exercise Salsa Zumba (Meringue) Concrete Step Stretching Bonds Elastic Bonds Cool-down (Breathing))	Warm-up (Bamboo Pole Exercise Hip-Hop Shadow Boxing Sit ups Cool-down (Breathing))	Warm-up (Bamboo Pole Exercise Zumba (chacha) Karate do Exercise Bending Cool-down (Breathing) (WEIGH IN) JOURNAL RECORDING
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Appendix 2. Students Daily Journal



Balanced Aerobics Program

Name: KIMBERLY S. NACION

Date: November 20, 2015

Aerobic Exercise	Time Frame (Minutes Performed)	Feelings Towards the Activity	Weigh-in After every 2 weeks)
Warm-up *Bamboo Pole Exercise	5 minutes	Student energized and active	Students present weight is 70 kg.
Cardiovascular Conditioning *Hip-Hop	5 minutes		
Muscular Strength Conditioning *Concrete Step	10 minutes		

Test			
Stretching and Flexibility *Stretching Using Elastic Bonds	5 minutes		
Cool Down *Breathing	5 minutes		

KIMBERLY S. NACION
Student Name

Appendix 3. Permission Letter



Republic of the Philippines
Department of Education
Region XI
DIVISION OF DAVAO DEL SUR
Digos City



October 12, 2015

REYNALDO B. MELLORIDA, CESO VI
Schools Division Superintendent, OIC
Division of Davao del Sur

Dear Sir,

Greetings of Peace!

I am presently undertaking a study entitled: **EFFECTIVENESS OF BALANCED AEROBIC PROGRAM ON THE WEIGHT REDUCTION OF GRADE 7 OBESE STUDENTS IN SULOP NATIONAL HIGH SCHOOL** at the Graduate School of

Southern Philippines Agri-business and Marine and Aquatic School of Technology (SPAMAST).

Appertaining to this, may I respectfully request permission to personally conduct the study to the Grade 7 Students at Sulop National High School, this division. The date gathered shall be strictly confidential in accordance with the "Ethics of Research".

May I extend my sincerest appreciation for the favorable support afforded to the researcher. May this modest work help verify whether or not efforts for the development of effective schools are on the track.

Very truly yours,

MARK DALE D. DIGA II
Researcher

APPROVED:

REYNALDO B. MELLORIDA, CESO VI
Schools Division Superintendent
Republic of the Philippines
**SOUTHERN PHILIPPINES AGRI-BUSINESS AND MARINE
AND AQUATIC SCHOOL OF TECHNOLOGY**
College of Agricultural Sciences
Matti, Digos City

October 19, 2015

REYNALDO B. MELLORIDA, CESO VI
Assistant Schools Division Superintendent
OIC, Office of the Schools Division Superintendent
Division of Davao del Sur

Sir:

The bearer, **MR. MARK DALE D. DIGA II** is a SPAMAST Graduate Student and Candidate for Master of Arts in Education with specialization in Educational Management this school year 2015-2016. At present, he is going to undertake a study on the "**EFFECTIVENES OF BALANCED AEROBIC PROGRAM ON THE WEIGHT REDUCTION OF GRADE 7 OBESE STUDENTS IN SULOP NATIONAL HIGH**

SCHOOL" at the Graduate School of Southern Philippines Agri-business and Marine and Aquatic School of Technology (SPAMAST).

Appertaining to this, I am respectfully endorsing to your good office herein approved research methodology of **Mr. Diga II** for the conduct of his study.

I highly appreciate any support you can extend the researcher.

Thank you and God Bless!

Very truly yours,

HELEN W. NOEL, Ph. D.
Graduate School Chairman



Republic of the Philippines
Department of Education
Region XI
DIVISION OF DAVAO DEL SUR
Digos City



October 26, 2015

MR. MARK DALE D. DIGA II
Researcher
Southern Phil. Agri-Business and Marine
And Aquatic School of Technology
Matti, Digos City

Dear Mr. Diga II:

This has reference to your letter dated October 12, 2015 requesting approval for the conduct of your study in Sulop National High School, this Division.

This Office approves your request provided that:

1. the activity shall be properly coordinated with the concerned District Supervisor and School Head;
2. classes shall not be disrupted; and
3. no DepEd funds shall be utilized for the purpose.

Please ensure that the above provisions are strictly adhered to. It is emphasized that a copy of the research study in its final form shall be submitted to the DepED Division Office, attention: Dr. Mario C. Mondejar, Chief-SGOD, Research Focal Person, upon completion.

Very truly yours,

REYNALDO B. MELLORIDA, CESO VI
Schools Division Superintendent

CURRICULUM VITAE

Personal Data:

Name	:	Mark Dale D. Diga II
Address	:	Purok 1 Baybay, Malalag, Davao del Sur
Date of Birth	:	September 13, 1990
Place of Birth	:	Digos, Davao del Sur
Sex	:	Male
Height	:	170 centimeters
Weight	:	386 lbs.
Status	:	Single
Religion	:	UPC (VOT)
Nationality	:	Filipino
Tribe	:	Cebuano
Parents	:	
Father	:	Manuel C. Diga (Deceased)
Mother	:	Nina D. Diga
Brother	:	Mark Daryl D. Diga Resty D. Diga Jem D. Diga

Nephews : Nemuel D. Diga
Daruel Jay Diga
Januel Diga

Educational Background:

Elementary : Baybay Elementary School
Malalag, Davao del Sur
1997-2003
2nd Merit

Secondary : Davao del Sur School of Fisheries
Bagumbayan, Malalag, Davao del Sur
2003-2007
Band Member of the Year (Lyrlist)
Dancer of the Year
1st Place Vocal Solo Provincial RCY Encampment

College : University of Mindanao Digos College
Roxas Ext. Digos City, Davao del Sur
Bachelor of Secondary Education
With Distinction
Commendable Performance
Dancer of the Year
2007-2011

Graduate : Southern Philippines Agri-business
Marine and Aquatic School of Technology
Master of Arts in Education Major in Educational
Management
Digos Campus, Matti, Digos City
2013-2016

Eligibility : Licensure Examination for Teachers
September 25, 2011
76.20%

Professional and Work Experiences:

- 2011-2011 : NAKAYAMA Technology Corporation
Factory Worker (Wood Tiles)
October-November
- 2012-2013 : Department of Education
Davao del Sur School of Fisheries
Bagumbayan, Malalag Davao del Sur
Volunteer Teacher (1 Year)
- 2013-Present : Department of Education
Sulop National High School
Sulop, Davao del Sur
Teacher 1

