Senior High School

PE and Health

Quarter 1 – Module 4: Physiological Indicators in Dance

(Week 7-8)

MELC: Analyzes physiological indicators such as heart rate, rate of perceived exertion and pacing associated with MVPAs to monitor and/or adjust participation or effort.

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Introductory Message

For the facilitator:

Welcome to the P.E. and Health 12 Alternative Delivery Mode (ADM)Physiological Indicators in Dance !

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:

As a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the P.E. and Health 12 Alternative Delivery Mode (ADM) Physiological Indicators in Dance!

The hand is one of the most symbolized part of the human body. It is often used to depict skill, action and purpose. Through our hands we may learn, create and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:

What I Need to Know

This will give you an idea of the skills or competencies you are expected to learn in the module.

What I Know

This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers

correct (100%), you may decide to skip this module.

What's In

This is a brief drill or review to help you link the current lesson with the previous one.

What's New

In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.

What is It

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.

What's More

This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.

What I Have Learned

This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.

What I Can Do

This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.

Assessment

This is a task which aims to evaluate your level of mastery in achieving the learning competency.

Additional Activities

In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.

Answer Key

This contains answers to all activities in the module.

At the end of this module you will also find:

References	This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!

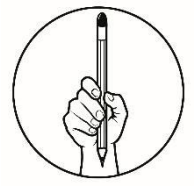
What I Need to Know

This module was designed and written with you in mind. It is here to help you the skills in physiological indicators in dance. You will demonstrate understanding of dance in optimizing one's health; as a requisite for physical activity assessment performance, and as a career opportunity. The skill will also teach you to lead dance events with proficiency and confidence to result in independent pursuit and in influencing others positively. The topic in this material will help the learner to realize the importance of the topic for a lifelong wellness and real life situation.

The module is about Physiological indicators such as heart rate, rate of perceived exertion and pacing associated with MVPAs to monitor and / or adjust participation or effort.

After going through this module, you are expected to:

1. Identify physiological indicator such as heart rate, RPE and pacing;
2. Explain indicators as it is associated with MVPAs;
3. Demonstrate indicators to show own heart rate, RPE and pacing in dance;
4. Appreciate the value of these indicators in monitoring one's progress



What I Know

Match column A with Column B. Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. This requires a large amount of effort and causes rapid breathing and substantial increase heart rate.
   A. Frequency
   B. Intensity
   C. Moderate physical activity
   D. Vigorous physical activity

2. Grand jete and pirouette are dance steps. Which form of dance that represents these examples?
   A. Ballet
   B. Cheer dance

C. Festival dance
D. Folk dance

3. Which of the following requires a moderate amount of effort and noticeably accelerates the heart rate.
   A. Frequency
   B. Intensity
   C. Moderate physical activity
   D. Vigorous physical activity

4. What form of dance which tells about the culture and tradition of the people in a community?
   A. Ballet
   B. Festival dance
   C. Folk dance
   D. Hip hop dance

5. Which of the following dance that is not included in ballroom dance?
   A. Foxtrot
   B. Pirouette
   C. Tango
   D. Waltz

6. Which of the following is NOT an activity that spends a large amount of energy and increases heart rate?
   A. Assemble
   B. Locking
   C. Popping
   D. Waltz

7. Which of the following that increases self confidence and self-esteem represents benefit of dance?
   A. Cultural benefit
   B. Physical health benefit
   C. Psychological benefit
   D. Social benefit

8. Which of the following dance steps with a step pattern of slide cut hop?
   A. Galop
   B. Kuradang
   C. Mazurka
   D. Mincing

9. Which of the following that consist of two steps?
   A. Heart Rate
   B. Pace
   C. Pace factor
   D. Vigorous activity

10. This dance step has a step description of spin and twirl.
    A. Assemble
    B. Galop
    C. Pirouette
    D. Split

11. This is a way of determining the number of paces needed to travel from one point to another point.
    A. Pace
    B. Pace factor
    C. Pacing
    D. Stepping

12. Which of the following physiological indicators that tells the number of heartbeat per minute?
    A. Heart rate
    B. Maximal heart rate
    C. Resting heart rate
    D. Rate of perceived exertion

13. Which of the following can measure exercise intensity?
    A. Frequency
    B. Heart rate
    C. Pacing
    D. RPE

14. Which of the following describes travel from point A to point B?
    A. Heart Rate
    B. Pace factor
    C. Pacing
    D. RPE

15. Which of the following dance benefit that promotes culture?
    A. Cultural benefit
    B. Physical health benefit
    C. Physiological benefit
    D. Social benefit

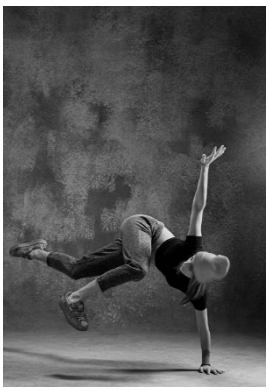
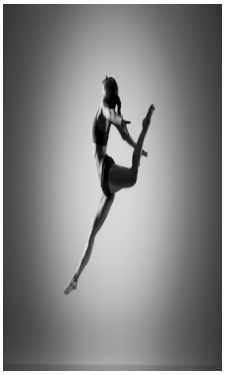
1.

Physiological Indicators in Dance

There are several indicators used to check one's health but, in this module, it is limited to heart rate, rate of perceived exertion and pacing to be associated in moderate to vigorous physical activities, particularly in dance. Results from these indicators will serve as guide of the learners to monitor and adjust and help them assess their own wellbeing with regards to their participation in dance activities. Be reminded that results vary according to age thus doing the activities with anyone in the family will make indicators differ.

What's In

Previously, you studied about moderate to vigorous physical activities. It was suggested that each one of us should at least spend 60 minutes most days of the week in doing moderate to vigorous physical activities to maintain a healthy lifestyle. Let us see if you still remember: Identify the activities in the picture whether it is moderate physical activities or vigorous physical activities:

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

What's New

How do you monitor yourself if you are hypertensive or not?

How do you check if your heart is functioning well especially when it is under stress?

How do you monitor your weight?

What is It

Physiological indicators such as heart rate, rate of perceived exertion and pacing associated with MVPAs to monitor and or adjust participation or effort will show your level of participation in dance activities. The intensity of doing moderate physical activities and vigorous physical activities is monitored through these indicators.

Dancing is an excellent alternative exercise for improving health related physical fitness elements. Dance performance requires support from enhanced physiological requirements necessary for dancers including cardiovascular fitness, muscle flexibility, muscular strength/power. A reduction in muscular strength associate with injury risk and many dancers succumb to problems such as the overtraining syndrome. Improvement in lower body muscular strength appears to have positive effects on aspects of dance performance and injury prevention. The qualities and benefits offered by dancing depend on the dance forms concerned but as a general rule, it improves physical health by developing strength, suppleness, coordination and balance in varying amounts.

Firstly, the **Heart Rate** is an indicator wherein the intensity of the activity is measured by the percentage of the personal maximal heart rate during exercise or dancing, which shows the number of beats in a minute. Last time you know already the formula of **prediction equation** which individual max heart rate. Be reminded also that as we grow older our PMHR decreases. There are adults that are suffering from some cardiovascular diseases but are undiagnosed. One of the tests given to them is the stress test done in a treadmill or stationary bike. And there are other devices used to monitor heart rate.

Rate of Perceived Exertion - is how hard you feel like your body is working. It is based on the physical sensations a person experiences during physical activity, including increased heart rate, increased respiration or breathing rate, increased sweating, and muscle fatigue.

Another way of monitoring one's intensity level is using a guide, Borg's Rate of Perceived Exertion. Dr. Gunnar Borg has designed this scale for us to be guided on how we feel when doing the physical activities.

According to Gialogo and Gialogo (2016) RPE can determine intensity together with prediction equation. Feeling felt by the person doing the physical activities is given by a ratio scale and that the higher the number, the level of force exerted by the person doing is, has corresponding percentage equivalent. Personal Maximal Heart Rate of the person is determined with a formula in which value can be combined with Prediction Equation based on the person's age. The formula of which was discussed previously. Determining the heart rate of the person may be through the counting of the exact pulse rate which can be obtain through the wrist, neck and beat of the heart in the chest within 15 seconds multiplied by 4, or 30 seconds multiplied by 2 or full 60 seconds. Below is the table:

Standard	Rating	Activities	Percentage
No effort	1	Resting, lying in bed, reading, Watching TV	10%
Very less effort	2	Nail cutting, Writing	20%
Very light	3	Household chores, like sweeping the floor	30%
Light	4	Dance like folk dance	40%
Moderately hard	5	Social dances like ballroom dance, Zumba	50%
Hard	6	Ballet	60%
Slightly Hard	7	Ballet	70%
Very hard	8	Break dancing	80%
Very very hard	9	Cartwheel in Cheer dance	90%
Maximum	10	Competitive Athletic activities	100%

Source: Borg G.A. Psychophysical bases of perceived exertion. *Medicine and Science in Sports and Exercise*. 1982; 14:377-381.

For example if an individual is 18 years, subtract the age to 220 which is the highest heartbeat, is equal to 202, and his effort is 50% based on the above table,

the heart rate would be 101 beats per minute and this prediction equation according to Gialogo and Gialogo 2016 has an error of between 10 – 20 beats per minute.

How would you increase your intensity, so you can determine improvement in doing different activities? Keeping being active is doing a regular physical activity whether in a moderate physical activity to vigorous physical activity. Remember lesson in FITT principle.

Pacing

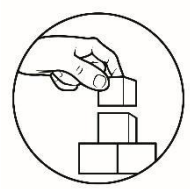
Pace according to Merriam-Webster it is a rate of movement, or a rate of progress, rate of performance or delivery. Movement, progress and delivery of performance in dance are all in one. Pace is equivalent to two steps, and pace factor as a way of determining the number of paces when you travel from point to point (Aparato,Brebante,Callo,Dajime 2017).

Say in folk dancing, steps are patterned. Doing **Mazurka steps** which has a step pattern of : slide cut hop; slide R foot in second position at count 1, cut R sideward with the left foot at county 2, hop on the Left foot and beat in rear or in front the Right foot close to the ankle of the Left foot at count 3.; this has a direction of forward, obliquely forward, sideward or at any point , and vice versa.

The above presentation shows that pace in this Mazurka step starts from the right foot to the point where you hop, and this is equivalent to one pace. So, in this case, number of pace depends on how many mazurka steps is ask in a kind of dance. The movement is the direction, as it is ask in a dance and it progresses as it is ask on the dance and thereby it delivers performance as you demonstrate the dance.

Another example is doing **pirouette** in ballet. From a point where a dancer starts the step to another point where it will start, the same step or movement to another point. The number of paces depends on how many spin and twirl will the dancer will take according to how many is ask, and music and progress continuous until full performance is delivered. And it goes with other dance forms.

Pace factor (Aparato,Brebante,Callo,Dajime 2017) is a way of determining the number of paces needed in traveling between two points. Example, in 15 feet a dancer did 10 pirouette for 1st try from Point A to point B, and from point B to point A is 8 pirouette for 2nd try and Point A to B again is 6 pirouette for the 3rd try,; get the total number of pirouette and averaged by dividing by 3. 10 +8+6 = 24 divided by 3 is 8 according to the pace of the performer. But how about the time? How much time did he she spend for that if done at a speed of 2 miles per hour? So, in this presentation, pace factor is the number of pirouettes in each point as far as the pacing of a performer in ballet is concerned. The average also showed that pacing depends on the competence, how active, and endurance of the performer. So, the result in each point may also be higher or lower. How much time would it be for these three points? The formula for getting the time is Time = distance divided by speed. So, say your distance is 15 feet divided at a given speed of 2kph. How much would be your time?



What's More

Activity 1.1 Record all results in your log.

1. Count the number of heartbeat while sitting for 60 seconds. Choosing a way from the wrist, carotid and chest.
2. Determine your Maximal Heart Rate with this formula: 220 – age = Heart Rate max
   and Training Heart Rate identifying the lower and higher limit.
3. Compute your pace factor in 20-meter distance using Galop step in 2/4 time signature from Point A to Point B for 1st try, 2nd BA and 3rd AB.

Activity 1.2

Do the following:

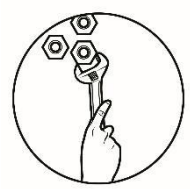
1. Warm-up for 5 minutes compose of stretching in fast music
2. 10 minutes of the following: Jog in place, lunges, squats, push-ups, grapevine/shuffles
   Jumping jack.
3. Dance workout with music (2mins minimum, 4mins max). Example: https://www.youtube.com/watch?v=PcuL6L8xqRE
4. Cooldown: stretching in slow music (1min)
5. All must be in recorded video and submit to your teacher.
   (Rubrics will be use in rating the outputs)

What I Have Learned

Finish the following statement:

1. What I remember about physiological indicator lesson is . . . . . .
2. I learned that . . . . . .
3. I was able to realize that lessons about physiological indicators are . . . . . .
4. I need to be aware always about my heart rate because . . . . . .
5. I then was able to discover that the right way of . . . . . .

was able to discover that the right way of . . . . . .



What I Can Do

Activity 1.1. Get your heart rate either from your wrist or neck. Record in your log.

Activity 1.2. Compute your maximal Heart Rate.

Activity 1.3. Compute your training heart rate at moderate intensity (50% and 60%. What is your lower limit and higher limit?

Activity 1.4. What is the distance in meters from your door to the kitchen in front of your stove where you are cooking your food? How many steps from point A (door) to point B (stove), steps from Point B to point A and point and another point AB.

Get the average of your 3 tries. Do you think this distance is enough for doing any moderate to vigorous physical activities? Why? How many minutes/seconds was your time in doing the 3 points?

Assessment

Multiple Choice. Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. Which is an indicator wherein the intensity of the activity is measured by the percentage of the personal maximal heart rate during exercise or dancing, which shows the number of beats in a minute?
    A. Heart Rate
    B. Pace Factor
    C. Maximal Heart Rate
    D. Rate of Perceived Exertion

2. If you are 17 years old, how much would be your Maximal Heart rate?
    A. 203
    B. 204
    C. 205
    D. 206

3. Base on the correct answer in number 2, what is your training heart rate in moderate physical activities at 50% and 60%?
    A. 102.50 – 131.8
    B. 101.60 – 121.10
    C. 101. 50 – 121.8
    D. 102. 60 – 132.8

4. What indicator which involve the counting of the exact pulse rate obtain through the wrist, neck and in the chest?
    A. Heart Rate

B. Pace
C. RPE
D. Vo2 max

5. What way of determining the number of paces needed in traveling between two points.
   A. Heart Rate
   B. Pace
   C. RPE
   D. Vo2max

6. What is the average pace factor in these three points of travel: In a given distance of 15 ft., Point AB is 5 pirouettes for 5 seconds, Point BA 3 pirouette for 8 seconds, and point AB for 10 pirouettes for 6 seconds?
   A. 6
   B. 7
   C. 8
   D. 9

7. Based on the number 6 question, what would be the speed?
   A. 1 Second
   B. .8 second
   C. .9 seconds
   D. .10 seconds

8. How do you do pirouette?
   A. Step point, step point
   B. Spin and twirl
   C. Slide, cut, hop
   D. Step, step, point

9. The following are step pattern in folk dancing, which among these is Mazurka?
   A. Step point, step point
   B. Spin and twirl
   C. Slide, cut, hop
   D. Step, step, point

10. What is the highest heart rate of a person?
    A. 200
    B. 201
    C. 202
    D. 220

11. Who designed the Rate of Perceived Exertion?
    A. Gunner Borgs
    B. Gunnar Borg
    C. Ganner Borg
    D. Genner Borg

12. What intensity is between 50% and 60%?
    A. Maximum

B. Moderate intensity
C. Very very hard
D. Vigorous Intensity

13. If you are 19years old and very active athlete, what would be your training heart rate in 70% and 80% ?
    A. 140.7 – 160.8
    B. 140.6 – 180.6
    C. 140.9 – 181
    D. 140.5 – 161.8

14. In reference to your answer in number 13, what is the lower limit?
    A. 140.5
    B. 140.6
    C. 140.7
    D. 140.9

15. In number 13 there is an answer for 70% and 80%, what is the higher limit?
    A. 160.8
    B. 161.8
    C. 180.6
    D. 180

Answer Key

What I Know

1. D
2. A
3. C
4. C
5. C
6. B
7. A
8. C
9. C
10. B
11. C
12. B
13. A
14. D

What's More

Activity II-B

1. C
2. B
3. B
4. C
5. C

Assessment

1. A
2. A
3. C
4. A
5. B
6. A
7. B
8. B
9. C
10. D
11. B
12. B
13. A
14. C
15. A

	Excellent **5 pts**	**Good** **4 pts**	**Fair** **3 pts**	**Poor** **2 pts**
Warm up and Stretching	Movements were low impact and rhythmic to safely increase blood flow. Warm-up was a minimum of 5 minutes long. Proper form of static stretching was exhibited, and applicable muscles identified.	Movements were low impact and rhythmic to safely increase blood flow. Warm-up was a minimum of 5 minutes long. Proper form of static stretching was exhibited, but applicable muscles were not identified.	Warm-up was too high impact for the varying fitness levels of the participants and did not meet the minimum time requirement of 5 minutes. Proper form of static stretching was exhibited, but applicable muscles were not identified.	Warm-up was too high impact for the varying fitness levels of the participants. Utilized ballistic stretching and did not identify applicable muscles.
Choreography	Choreography was suitable for all fitness levels and modifications were demonstrated. Smooth cueing and flowing transitions were evident.	Choreography was suitable for all fitness levels and modifications were demonstrated. Some trouble with cues and transitions.	Few modifications were demonstrated. Some trouble with transitioning and cues.	No modifications were demonstrated, consistently off the beat, trouble with cueing.
Music Selection	BPM is appropriate for the type of class. Music is 32-count phrasing.	BPM slightly too fast for the type of class. Music is 32-count phrasing.	BPM is not suitable for the complexity of the choreography. Music is 32-count phrasing.	Inconsistent BPM, no 32-count phrasing.
Preparedness	Memorized routine	Occasionally paused to remember routine	Frequent pauses	Not memorized the routine

References:

Books:

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https://www.randall.k12.wi.us. Fitness Focus Components of Health-Related Fitness
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https://www.youtube.com/watch?v=JWLy4IKqd1M Auti Kamal Ballet for beginners
https://www.youtube.com/results?search_query=miss+auti+ballet+vocab+
https://www.youtube.com/watch?v=Ka6EJtQEiVk&t=152s

Beginning Contemporary Dance I Follow Along Class With @MissAuti

Images:

Dreamstime.com. Images. Cheerleading
Lagro High School Sayaw Sining Dance Troupe
Freepik.com, Fitness
Peter Dazely, Getty Images Pinterest