# LOAD REWARD SYSTEM (LRS): A VEHICLE TO IMPROVE ACADEMIC PERFORMANCE IN PANDEMIC

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# Load Reward System (LRS): A Vehicle to Improve Academic Performance in Pandemic

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## Abstract

This study aimed to investigate the Load Reward System (LRS) as a vehicle to improve academic performance during the pandemic. The study employed a static-group comparison design, in which academic achievements in a controlled group were compared to the experimental group. A total of 80 grade ten (10) students from two different sections of Barcelona National High School for the SY 2021-2022 were used. Forty students from Grade 10 section Masaligan constituted the experimental group, and forty from Grade 10 section Matinabangon in the control group. A 20-item teacher-made pretest and posttest were given to the students. Data were analyzed using descriptive statistics. Specifically, the frequency percentage is illustrated in a bar graph, mean and variance, and inferential statistics, the z-test. Using the Load Reward System, students were exposed to reward a load when they correctly answered the given question, which is aligned with MELCs. The study revealed that students exposed to LRS showed higher academic performance with the mean of 16.225 and a standard deviation value of 2.778 compared to the control group, which has 13 as a mean and a standard deviation value of 5.416. Since Load Reward System is an effective vehicle for science academic performance amidst COVID-19 pandemic, teachers should be encouraged to use it in teaching science and could also be used in other subjects in the teaching-learning process.

*Keywords: academic performance; COVID-19 pandemic, Load Reward System (LRS)*

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## Context and Rationale

The COVID-19 pandemic, or coronavirus pandemic, was declared by World Health Organization in March 2020. Countries all over the world enacted national emergency status as the data of viral contagion is abruptly rising. The abruptness and uncertainty of COVID-19 caused the education system to rush the response of shifting landscape (Dayagbil et al. 2021). A new policy has been regulated in the education sector in the teaching and learning system. Teachers and students are enjoined to to conduct the teaching and learning processes from face-to-face to online learning modality.

The online and modular learning regulation is in force in all educational institutions. Some used printed modules while others maximized using the digital platforms. This unforeseen change in some way distressed the quality of education. Some previous studies revealed that online and modular learning during the COVID-19 pandemic era had caused advantages while others have caused disadvantages. On the one hand, online and modular learning was reported to be advantageous for students because they had high interaction with rich learning materials regardless of time and place, as well as the high opportunity to experience digital learning programs (Hidayat 2020; Simamora 2020). Moreover, high interaction also occurred in virtual communication among teachers - students, and students- students, which resulted in a vast capacity for sharing information and experience (Rochman and Pertiwi 2020).

The online teaching and learning processes using computer technology resulted to upskilling and reskilling and increased the enthusiasm of both teachers and students to engage and participate. Meanwhile, online learning was also described as bringing disadvantages. The students claimed that online learning caused them headache, fatigue, or fever as health problems because of the voluminous assignments to do quickly. Some also declared they had impaired eyesight due to prolonged staring at computers or phone screens. Students also faced financial hardship because they had to buy enormous amounts of credit for the online quota (Simamora 2020). However, these factors of students' success in learning during the pandemic were substantially associated to students' motivation in online learning.

Online learning has caused some students to lack motivation to learn, whereas others were highly motivated. Cahyani, Listiana, and Larasati (2020), Simamora (2020), and Rachmat (2020), documented that students who lack motivation were significantly affected by several factors like learning time, environment, and instrumental supports, which in turn affected the educational outcomes. As online learning was conducted from home, many parents thought they could still ask for help in the household from their children during their online learning time. Improper internet connection and gadgets to access distance learning also caused frustration.

On the contrary, Fitriyani, Fauzi, and Sari (2020) and Simamora (2020) emphasized that intrinsic factors highly motivate university students to online learning. The ambition and enthusiasm to explore and learn new knowledge enabled the learners to study hard, even via online modality. Moreover, resilience and psychological condition also promoted success in online learning.

Motivating students to achieve academically highlights the different philosophical debates over intrinsic versus extrinsic motivation. Educators want to know how motivation can be increased for students with a predetermined attitude about their ability to succeed or fail. The fundamental competitive view of the economic system often dictates how many reward systems are organized to motivate students.

Student motivation and rewards issues have been highlighted for many years. It can be argued that when teachers constantly use rewards to enhance motivation,

learners tend to value the reward not the learning. Students who are strongly dedicated to learning and broadening their horizons may be more focused in merely obtaining a degree to help them secure a good job.

The pride of every school rests in its ability, at the end of the particular academic cycle, to churn out to society students with excellent academic performance, who all are round and super motivated to pursue higher education goals or delve into careers that will accord to the positive development of the nation. To achieve this, most schools have recognized and underscored the key role that teachers play in overall performance and invested heavily in mechanisms geared towards boosting morale to enhance effective teacher delivery.

The implementation and accomplishment of rewarding desired behaviors is a composite concern affected by several factors such as reward dimension, schedule of reward, contingencies in the environment, gender and environment. Lee, Sturmey, and Fiels (2007) pointed out the practical difficulties of employing reinforcement in applied settings. Reinforcement requires the reward's cost and the monitor's time and attention, who shall observe and manage the rewards. Research says that employees from different countries have various preferences on incentives and that what works in one place may not work in another (Rehu, Lusk, and Wolf 2005), further complicating relationships among variables.

Motivation is "a theoretical construct to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior" (Brophy 2010, 3). It is correlated with individual cognitive and affective dimensions of the learners and their learning environment (Schuck et al. 2013).

Some fundamental issues in motivation involve the choice of rewards, usually grouped as tangibles versus recognition or intangibles. Besides the reward themselves, the size of the reward seems to matter. Similarly, Pierce et al. (2003) found the sequencing of rewards to influencing motivation, such that when rewards are based on increasingly demanding performance standards, motivation improves.

Motivation research has been applied to the educational setting in some studies. Much has been written in the education literature about student goals and motivation. The studies suggest that student motivation may come from the students themselves, the instructors' quality, or the delivery's design. Covington (2000) reviews the literature and divides student goals into academic and prosocial goals. The academic goals may be further differentiated as learning goals and performance goals. Similarly, Hiller and Hietapelto (2001) stated that students often assume an orientation toward their studies that will allow them to achieve a level of performance rather than mastery of the material. Thus, the motivation for students becomes whether or not they have earned a grade high enough to maintain their view of themselves as capable students.

During this pandemic, the researcher noticed that the parents/guardians of Grade 10 students of Barcelona National High School of the SY 2021-2022 were very late in retrieving and submitting the modules for their sons/daughters. She also observed that the scores of students in the subject were deficient, and some of the activities in the modules needed to be answered correctly, and others did not answer the activity at all. Most students cannot update some information or lessons posted by the teacher in the group chat because they need a load for a data connection. Moreover, learners cannot contact the teacher for a more precise explanation and cannot even browse google for more elaboration on a certain topic.

Load Reward System (LRS) was used by the researcher to motivate students in their learning amidst the COVID-19 pandemic. Firstly, the researcher gave 50 pesos worth of cellphone load to a student who first got the modules for the first quarter. Then,

the researcher sent a message to her friends, who were once her students in high school. In short, they are alumni of Barcelona National High School. The first load sponsor gave 100 pesos worth of cellphone load, which made the other load sponsors give the same. The load would be given to students who can first answer correctly to the questions posted by the researcher in their group chat. The questions will be given every Wednesday per week or per module, which is aligned with science MELCs. Right after the student-winner received a load from their sponsor, the teacher posted it on her Facebook for transparency and as her way to say thanks to the load sponsor. The parents/guardians will then check if the load is used for students' lessons in the module.

**Innovation, Intervention, and Strategy**

Motivation which is characterized as an 'engine of learning' (Turner and Paris 1995), affects what, how, and when of learners' learning (Schunk and Usher 2012). In their investigations, Ryan and Deci (2000) opined that motivated learners could do challenging learning activities that engage them actively in finding appropriate strategies to ease their learning, enjoying them and indicating better persistence and creative learning.

The Load Reward System, or LRS, is a strategy that motivates learners through a reward system. This was used by the researcher to motivate students in their learning amidst the COVID-19 pandemic. Firstly, the researcher gave 50 pesos worth of cellphone load to a student who first got the modules for the first quarter. Then, the researcher sent a message to her friends, who were once her students in high school. In short, they are alumni of Barcelona National High School. The first load sponsor gave 100 pesos worth of cellphone load, which made the other load sponsors give the same. The load would be given to students who can first answer correctly to the questions posted by the researcher in their group chat. The questions will be given every Wednesday per week or per module, which is aligned with science MELCs. Right after the student-winner received a load from their sponsor, the teacher posted it on her Facebook for transparency and as her way to say thanks to the load sponsor. The parents/guardians will then check if the load is really used for students' lessons in the module.

**Table 1: Load Reward System Management 2021 Schedules**

| Date of Module's Distribution | Date of Questions Posted via GC | Date of Distribution of Rewards (LRS) | Date of Modules Completion | Date of Modules Retrieval | Reports & Feedbacking |
|---|---|---|---|---|---|
| *Sept 13* | *Sept. 15* | *Sept. 15* | *Sept. 13-17* | *Sept. 17* | *Sept. 18* |
| *Sept. 20* | *Sept. 22* | *Sept. 22* | *Sept. 20-24* | *Sept. 24* | *Sept 24* |
| *Sept. 27* | *Sept. 29* | *Sept. 29* | *Sept. 27-Oct.1* | *Oct 1* | *Oct. 2* |
| *Oct. 24* | *Oct. 6* | *Oct. 6* | *Oct. 4-8* | *Oct. 8* | *Oct 9* |
| *Oct. 11* | *Oct. 13* | *Oct. 13* | *Oct. 11-15* | *Oct. 15* | *Oct. 16* |
| *Oct. 18* | *Oct. 20* | *Oct. 20* | *Oct. 18-22* | *Oct. 22* | *Oct. 23* |
| *Oct. 25* | *Oct. 27* | *Oct. 27* | *Oct. 25-29* | *Oct. 29* | *Oct. 30* |

Table 1 shows the 2021 schedules for LRS management. It shows the date of the module distribution, the date of questions posted via group chat, the date of the

distribution of rewards, the date of module completion, the date of module retrieval, and the reports and giving feedback. Through LRS, these dates were followed, which would only mean that LRS is very effective for teaching and learning.

**Table 2: Preparatory Activities**

| Activity | Objectives | Persons Involved | Output |
|---|---|---|---|
| Outsourcing of Load Budgets | To form partnerships and linkages with alumni for outsourcing the budget | Alumni, Brigada Eskwela Coordinator, Teachers & School Head | Load Budget Allocation |
| Information dissemination on LRS | To inform the students and teachers about the Load Rewards System (LRS) | Students, Teachers, School Head | School Memorandum |

Table 2 shows the preparatory activities during the use of LRS in teaching Science 10 during the first quarter of the SY 2021-2022. Outsourcing of load budgets was the first activity. To form partnerships and linkages, the researcher contacted the alumni, Brigada Eskwela coordinators, teachers, and school heads to allocate load budgets.

Under the Load Reward System (LRS) process, first, the researcher outsourced the budget for the load as a reward for every student who can first answer the question given per week. Secondly, information was disseminated by the teacher/researcher. Students were informed through messages in the messenger. Right after the information dissemination, implementation of the LRS was followed. Lastly, monitoring and evaluation were conducted to ensure the effect of LRS on students. As shown in the figure, the arrow goes up because students' academic performance improved as the teacher/researcher used the LRS.

Table 3 presents the different duties and responsibilities of the persons involved in conducting the study, which is LRS as a vehicle to improve academic performance in the pandemic to Grade 10 section Masaligan students for the SY 2021-20022. Focal persons such as classroom teachers, students (who were in Grade 10), alumni, parents, and the school head had various duties and responsibilities.

**Table 3: Duties and Responsibilities**

| Persons Involved/Focal Person | Duties and Function |
|---|---|
| Classroom Teacher | • Create Group Chat<br>• Inform the sponsors of the load distribution schedules<br>• Prepare questions intended for the Reward System<br>• Identify the students who can answer the questions immediately in the group chat<br>• Inform the alumnus/load sponsor of the contact number of the student winner<br>• Prepare announcements for reward (for parents, students & sponsors)<br>• Prepare Reports & Feedback |
| Students | • Keep updated in the group chat<br>• Answer the questions posted in the Group Chat<br>• Work and comply with the given modules<br>• Ask questions/queries if necessary |
| Alumni | • Sent loads to student winner (as a reward) |
| Parents | • Collect the modules on the day of the schedules<br>• Return the modules on time<br>• Monitor the students to see if the load was properly used<br>• Inform the teacher in terms of progress |
| School Head | • Find source/funds or prospect sponsors<br>• Encourage teachers to do action research for personal growth and professional development |

## Action Research Questions

The researcher seeks to answer the following specific problems:

1. What kind of interventions work best with the nature of the problem?
2. What is the academic performance of the students in the control group?
3. What is the academic performance of the students in the experimental group?
4. Is there a significant difference between the performances of the students in controlled and experimental groups?
5. What effects does the LRS have on the compliance of the submission and retrieval of the learning modules?
6. How can parents become more involved in the compliance of the modules?

## Action Research Methods

### Research Design

To determine whether we accept or reject the hypothesis, this study employed a static-group comparison design (Singleton and Straits 2005), in which academic achievements in a controlled group were compared to the experimental group.

**Figure 2: Research Design Flow**

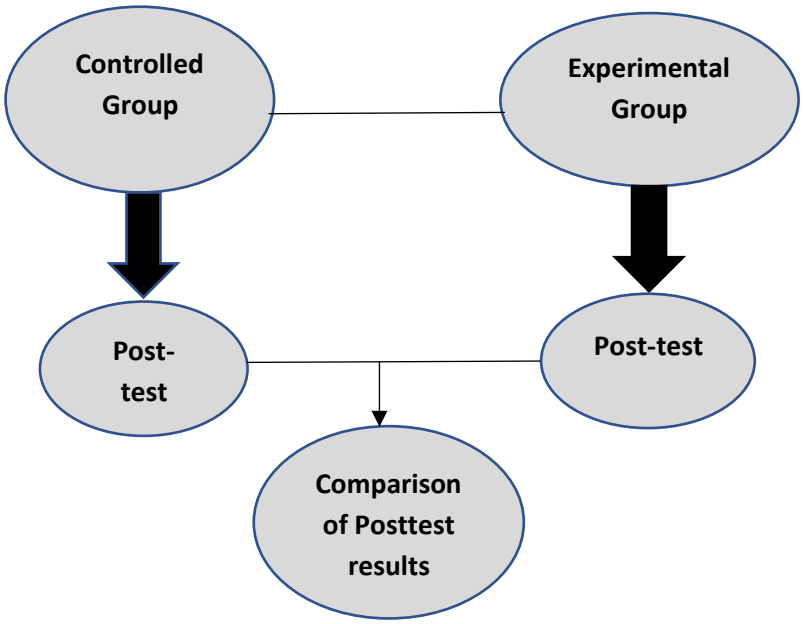



Figure 2 shows the research design flow. The researcher used the two groups in the class, the control, and the experimental group. Both groups were given a pretest and a posttest. The pretest results were the same in both groups since the two groups were homogeneous. However, as the researcher compared the results in both groups, the experimental group showed that students' academic performance was improved.

### Participants and/or Other Sources of Data and Information

Grade 10 students were the respondents of this study, specifically the eighty (80) Grade 10 students at Barcelona National High School for the School Year 2021–2022. Two sections were considered, 40 students from section Masaligan were the experimental group, while 40 students from section Matinabangon were the control group. The nature of the groups was homogeneous, where they had an equal performance during the pretest. The academic achievements, precisely the results of the modules and the compliance, were the data sources.

### Research Instruments

The study used a teacher-made 20-item survey questionnaire that was checked by the Master Teacher and the school's principal. It involves the lessons in the first quarter of Science 10 for the SY 2021-2022. In order to test the reliability and validity of the test, a table of the specification was made, which was also aligned with the MELCs.

**Data Gathering Procedure**

The researcher asked permission from the Office of the School Principal for consent to conduct the study in the school to ensure the integrity of the research conduct. The researcher also requested the informed consent of the two sections of grade 10 for the SY 2021-2022.

The participants were notified of the privacy of all information and result collected as part of the preliminaries on the data-gathering procedure. The data was used for research purposes only. The researcher also reminded the participants about the purpose of the study and its significance, and risks and benefits.

**Data Analysis**

The data gathered were analyzed and interpreted with the use of appropriate descriptive and inferential statistics, namely: Descriptive Statistics, specifically the frequency percentage illustrated in a bar graph, mean, and variance. Inferential Statistics, specifically the *z*-test, was used to determine whether to accept or reject the hypothesis.

## Results and Discussion

The researcher analyzed and interpreted the data through descriptive and inferential statistical tools.

Table 4.0 depicts the comparative data of the Controlled and Experimental Groups with a mean of 16.225 and a standard deviation value of 2.778. The Experimental Group showed greater academic performance than the Controlled Group, which has 13 as the mean and a standard deviation of 5.416.

**Table 4: Respondents' Comparative Scores**

| Scores | Test Scores | |
|---|---|---|
| | Controlled | Experimental |
| 19-20 | 8 | 11 |
| 17-18 | 5 | 10 |
| 15-16 | 6 | 7 |
| 13-14 | 6 | 7 |
| 11-12 | 3 | 4 |
| 9-10 | 4 | 1 |
| 7-8 | 3 | 0 |
| 5-6 | 1 | 0 |
| 3-4 | 2 | 0 |
| 1-2 | 2 | 0 |
| **Total** | **40** | **40** |
| **Mean** | **13** | **16.225** |
| **Standard Deviation** | **5.416025603** | **2.778004264** |

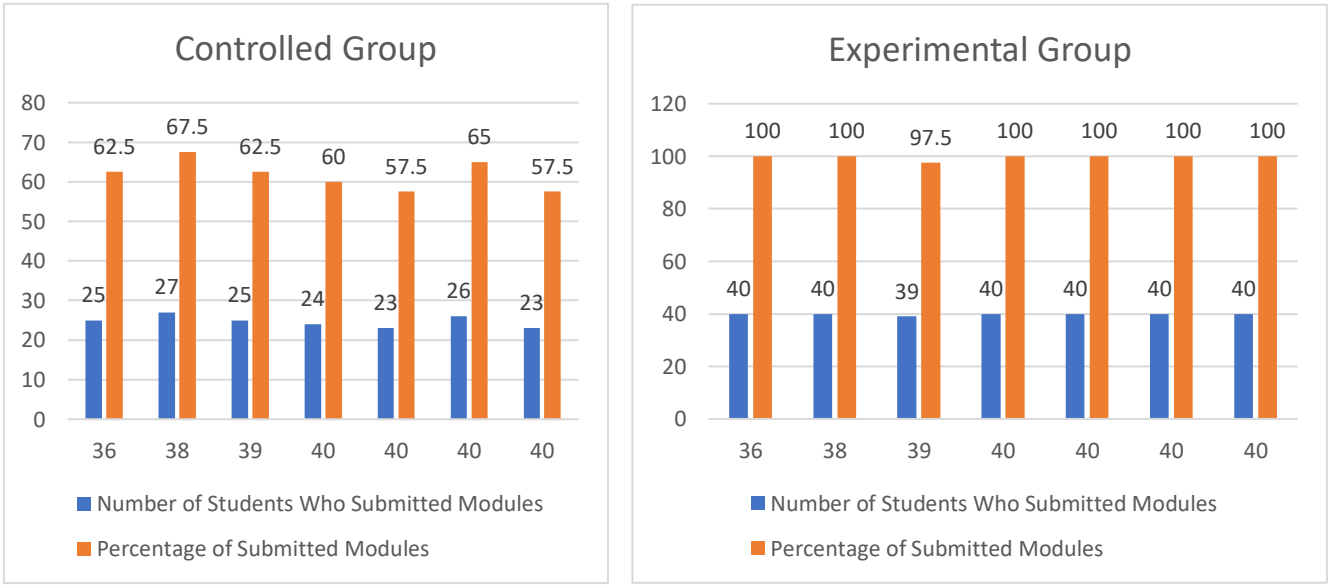
In table 5.0, with a z-test value of 2.280419369 and a Degree of Freedom of 39, the z- stat value is greater than the critical value. Therefore, this directs to reject the null hypothesis. The data implied that there is really a significant difference between the control and experimental test result. Thus, the Load Reward System (LRS) is an effective strategy to improve performance in science amidst covid-19 pandemic among the respondents.

**Table 5: Test of Difference between Control and Experimental Groups**

z-Test: Two Sample for Means

| | *Controlled* | *Experimental* |
|---|---|---|
| Mean | 13 | 16.225 |
| Known Variance | 40 | 40 |
| Observations | 40 | 40 |
| Hypothesized Mean Difference | 0 | |
| Z | -2.280419369 | |
| P(Z<=z) one-tail | 0.011291414 | |
| z Critical one-tail | 1.644853627 | |
| P(Z<=z) two-tail | 0.022582828 | |
| z Critical two-tail | 1.959963985 | |

**Graph 1: Comparative Analysis of Students' Compliance in the Schedule of Submission of the Modules**



Graph 1 illustrates the comparative analysis of the compliance in the schedule of submission of the modules. In the control group, the average submission of the module is 61.78%, while in the experimental group, it has an average of 99.64%. This implies that almost 100% of the students submitted their learning modules when Load Reward System (LRS) was introduced. Thus, the Load Reward System is effective in terms of helping the students to submit their learning modules.

***The Narrative Reflections on***
***How Can Parents Become More Involved in the Compliance of the Modules.***

Since a 100 pesos load is given to a winning student after being the first to answer correctly the question posted in the group chat, parents can save allowance for the learners. Through LRS, parents' attitudes in terms of involvement in the compliance of the modules had changed. Parents were active enough in the retrieval and submission of the modules and answer sheets of the learners. The fact that a 100 pesos load is given to the student winner is used for browsing google or communicating with teachers for further elaboration of the lessons. Parents had undergone strict monitoring of students. Guardians should see to it that the load given is used properly by the students. Parents are also motivated to get to know the learners' scores in the different activities in the modules. Guardians were very active in the retrieval of the answer sheets/modules of the learners to know the scores. They even asked the teacher the correct answer if there were wrong and had a tutorial session if they wanted to teach their sons/daughters at home the correct. They managed to transfer the knowledge they had learned from the teacher during their tutorial.

## Conclusion and Recommendations

Based on the findings presented, the researcher hereby deduced that the Load Reward System (LRS) is an effective vehicle for science academic performance amidst covid-19 pandemic. It helps boost the learners' self-confidence to answer their module and pass it earlier with less intimidation since they are very eager to win more loads and use it for searching all their queries on google or asking for explanations from their teachers virtually amidst the COVID-19 pandemic. Along with other references, the concept for a certain topic in Quarter 1, Science 10, with seven modules aligned in the MELCs, becomes more realistic and concrete to the learners' perception, which contributes to their interest in the lesson. Because of the Load Reward System (LRS), there is a great change in students' attitudes toward complying with the activity. There is also a change in parents' involvement in compliance with the modules. Learners are very active in the retrieval and completion of the modules, as well as the parents.

Anchored on the findings and analysis of data, the following recommendations are hereby deduced: (1) Load Reward System (LRS) is strongly recommended to be used during a certain lesson in modular learning to gain students' interest. It is a great avenue to help learners better grasp the concept and elaborate it using the load as their reward to browse google for their queries. Moreover, learners can communicate easily with their teacher since they already have their load; (2) Teacher(s) or classroom facilitators should see that the Load Reward System (LRS) is appropriately used to enhance modular learning among students amidst the covid-19 pandemic. It cannot only help to deepen students' knowledge but also help them to communicate with their teachers for queries; (3) As part of the motivation, there's a need for a teacher to supplement materials to a certain lesson, so students are active in terms of

participation. The Load Reward System is one way to motivate not only the learners but also the parents. Moreover, it should be introduced and implemented not only by science teachers but by all; (4) Instead that DepEd providing sim cards to teachers, it should be a load for the students or both; (5) DepEd might train teachers on the different strategies to motivate students to learn, especially the load reward system, to aid teachers in promoting learning among learners amidst COVID-19 pandemic; and (6) The researcher can conduct further research on the study in order to support and strengthen the results of the study.

## Action Plan

On the basis of this empirical study, the researcher suggests to teachers, master teachers, head teachers, school heads, supervisors, and the higher authority in the Department of Education as bases of their programs, projects, and activities. The action plan prepared by the researcher can hereby be offered.

| Objective(s) | Strategies / Activities | Time Frame | Persons Involved | Expected Output |
|---|---|---|---|---|
| To orient teachers with regard to the Load Reward System (LRS) | LAC Session | 3rd Friday of March 2022 | Teachers who used Load Reward System (LRS) to motivate students | Teachers get oriented on how effective the Load Reward System is as a form of motivation |
| To discuss the process and methodology of using a Load Reward System (LRS) as a form of motivation which is an effective vehicle for academic performance | Orientation/ Write-shop on the process and methodology of using a Load Reward System (LRS) as a form of motivation which is an effective vehicle for academic performance | 4th Friday of March 2022 | Teachers who used Load Reward System (LRS) to motivate students | Teachers get oriented on the process and methodology of using Load Reward System (LRS) as a form of motivation which is an effective vehicle for academic performance |

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| **Financial Report** | |
|---|---|
| | |
| **Particulars** | **Cost** |
| Photocopy of Research Questionnaires | 40.00 |
| Printing of Manuscripts | 40.00 |
| Copy Reader | 500.00 |
| Plagiarism Check | 1,000.00 |
| Data and Statistics Analysis | 500.00 |
| Internet Expense | 50.00 |
| Transport and other expenses | 50.00 |
| Total | 2,180.00 |

**Questionnaire**

Name: _____ Section: _____
Age: _____ Gender: _____

**MULTIPLE CHOICE: Read each item carefully and shade the appropriate letter of your answer.**

**A B C D**

0 0 0 0 1. What is the formula in finding the distance of epicenter from the station?

A. d = Td/10 seconds x 100 km
B. d = Td/8 seconds x 100 km
C. d = Td/6 seconds x 100 km
D. d = Td/4 seconds x 100 km

0 0 0 0 2. A newlywed couple wants to buy a house and lot in Dapitan City. The husband wants to know first the location of earthquake epicenters in that said city. However, the wife asked him the reason why it is important to know where in fact, earthquake is not always experienced in the area. If you were the husband, how can you explain to your wife on the importance of determining the location of earthquake epicenters in a certain area?

A. It is important because the earthquake is dangerous.
B. It is important because the earthquake is the basis for dividing the lithospheric plates.
C. It is important because the earthquake is the basis for the distribution of active volcanoes.
D. It is important because earthquake plays a vital role in laying the foundations of plate tectonics.

0 0 0 0 3. You were provided with data showing the arrival time of the P and S-waves recorded from three seismic stations. Which of these can you possibly determine?

A. The damage at the focus
B. The distance of the earthquake
C. The intensity of the earthquake
D. The location of the epicenter

0 0 0 0 4. Your parents wanted to buy a new house and lot. As a son/daughter, is it important for you to know which area are prone to earthquakes? Why?

A. Yes, so that necessary precautions could be done if you are living in one of those places.
B. Yes, so that your parents will buy a new house and lot near the earthquake epicenter.
C. No, so that necessary precautions could be done if you are living in one of those places.
D. No, so that your parents will buy a new house and lot near the earthquake epicenter.

0 0 0 0 5. Accordingly, volcanoes are not randomly distributed. Which of the following best describes the distribution of volcanoes around the world?

A. At the center of some continents
B. In the middle of some continents
C. On the edges of some continents
D. In the right parts of some continents

0 0 0 0 6. If you are a cartographer, what will give you an idea that the continents were once joined?

A. Ocean depth
B. Position of the south pole
C. Shape of the continents
D. Size of the Atlantic Ocean

0 0 0 0 7. There are two main scientific ideas for explaining plate movement. Which of the following below best explains plate movement?

A. Earthquake and gravity
B. Earthquake and subduction
C. Subduction and gravity
D. Gravity and convection currents

0 0 0 0 8. What geologic activities occurred in determining the scientific basis for dividing the lithospheric plates?

I. Earthquake
II. Volcanism
III. Mountain formation

A. I only B. II only C. III only D. I, II, and III

0 0 0 0 9. Below are the descriptions of the different types of plate boundaries. What best describes the transform fault boundary?

A. Two plates are joined together.
B. Two plates are diverged from each other.
C. Two plates slide past with each other.
D. Two plates are moved apart.

0 0 0 0 10. Himalayas is one of the youngest mountain ranges on the planet. It is the result of tectonic plate motions that collided with India into Tibet. Which of the following plate boundaries best describes the above phenomenon?

A. Divergent plate boundary
B. Oceanic-Continental
C. Transform fault
D. Convergent plate boundary

0 0 0 0 11. Which of the following best describes convergent plate boundaries?

A. Sliding each other
B. Moving towards each other
C. Moving away from each other
D. None of the above

0 0 0 0 12. When two tectonic plates collide, the oceanic crust usually subducts beneath the continental crust because it is

A. denser than continental crust
B. less dense than continental crust
C. thicker than continental crust
D. thinner than continental crust

0 0 0 0 13. Which of the following geologic feature or event will occur when oceanic and continental plate converges?

A. trench and volcanic arc
B. mountain ranges
C. rift valley
D. tsunami

0 0 0 0 14. When two plates collide, a geologic feature or event occurs. Which of the following will not occur during or after the collision?

A. Formation of Trench
B. Occurrence of earthquake
C. Creation of volcanoes
D. Occurrence of flood

0 0 0 0 15. What will happen when the two oceanic plates diverge?

A. subduction zone is evident
B. tsunami might happen
C. mid-ocean ridge is formed
D. mountain ranges are formed

0 0 0 0 16. When a spreading center develops within a continent, what happens to the crust?

A. the crust will sink
B. the crust will break into several segments
C. the crust will float
D. the crust remains the same

0 0 0 0 17. Which of the following describes the large-scale motion of seven large plates and the movements of a larger number of smaller plates of the Earth's lithosphere?

A. tectonics
B. crustal plates
C. plate movement
D. lithosphere

0 0 0 0 18. What will happen when heat from the Earth's interior causes the magma to flow, with hot magma rises while cooler magma sinks which initiate the crustal plate movement?

A. plate movement
B. slab pull
C. rift valley
D. thermal convection

0 0 0 0 19. In 1912, Alfred Wegener proposed a theory that the Earth was once a single landmass. What is the name of the Mesozoic supercontinent that consisted of all of the present continents?

A. Eurasia
B. Laurasia
C. Pangaea
D. Gondwanaland

0 0 0 0 20. According to this theory, hot, less dense material from below the earth's crust rises toward the surface at the mid-ocean ridge. Material flows sideways, carrying the seafloor away from the ridge and creating a crack in the crust. What is this theory called?

A. Continental Drift Theory
B. Seafloor Spreading Theory
C. Plate Tectonic Theory
D. Thermal Convection Theory

**Table of Specifications for Science 10 Quarter 1**

| Topics Covered | Knowledge | Comprehension | Application | Analysis | Synthesis | Evaluation | Total |
|---|---|---|---|---|---|---|---|
| Module 1 | 1 | | 2,4 | 3 | | | 4 |
| Module 2 | | 5 | | | 6 | | 2 |
| Module 3 | 8,9 | | | 7 | 10 | | 4 |
| Module 4 | | 11 | 12 | | | | 2 |
| Module 5 | 15 | | | 13 | 14 | | 3 |
| Module 6 | 16 | 17 | | | | 18 | 3 |
| Module 7 | 19 | | | | | 20 | 2 |
| Total | 6 | 3 | 3 | 3 | 3 | 2 | 20 |