

ATENEO DE MANILA UNIVERSITY

**Examining the effects of the Application of a Student Response System in teaching  
Media & Information Literacy to Senior High School Students**

A MICRO-RESEARCH PROPOSAL SUBMITTED TO THE

FACULTY OF EDUCATION DEPARTMENT

IN FULFILLMENT FOR THE COURSE

ED201

METHODS AND MATERIALS OF RESEARCH

EDUCATION DEPARTMENT

BY

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## **Introduction**

Undoubtedly, we live in a wired, globalized and interconnected world, in which communication & collaboration are possible 24/7. What made it possible? Technology. It is the driving force that created this interactive environment. It unceasingly transforms every aspect of life and society, and will continuously do so as time progresses.





As years have passed, innovations are becoming better and it's significantly develops as a part of our day-to-day routine of activities. People use technology to communicate with other people near or far, through the use of cellular phones, personal computers, laptop computers, and even tablet computers. People also use technology as a medium of entertainment through listening to their favorite music, video streaming, and viewing, downloading and sharing photos. And most importantly, people use technology to enhance the quality of their work.

But how about enhancing the quality of teaching? Producing well-rounded learners? How about the purpose of achieving quality education? Since teachers, being one of the essential components of the profession, they must realize that there's a huge paradigm shift from the traditional way of conveying information (teacher-dominated instruction), to the modern-day viewpoint of teaching students (learner-centered instruction). They can achieve a quality teaching and learning process, through seamlessly incorporating appropriate technology-driven instructional materials to their instruction, which will aid them in developing lifelong 21<sup>st</sup> century learners.

But the internet has one essential dimension that truly dominates the world up to this day, and continues to improve, that is the utilization of the internet. It serves as the gateway towards unlimited access to the World Wide Web, which in turn, offers a conduit to a spectrum of interactive facilities. The learning process exceeds the traditional classroom environment, making it more concrete and authentic. The computer alone, can provide various dimensions in contrast to just reading books, and can create a “virtual world” comprising different realities based from the actual world.

Also, it has transformed from static webpages where users could find and copy information from multiple sources, where they can only create and post information. Another significant change is the transition from using desktop-based applications to online tools. It encourages collaboration and shared ideas to enhance the task-at-hand. Clearly, almost everyone can participate in the internet. From an isolated and “one-way” platform, to a collaborative and “multiple ideas accepting” venue that encourages and practices collaboration.

Table 1.1 Concise description of the shift from Web 1.0 to Web 2.0

<b>WEB 1.0</b>		<b>WEB 2.0</b>
Application based		Web based
Isolated		Collaborative
Offline		Online
Licensed or Purchased		Free

Single creator	→	Multiple collaborators
Copyrighted Content	→	Shared/collaborated content

No wonder technology prominently affects how today's learners live, communicate and learn. They say that technology is the answer. The greater and more stable is the access, the more it will be beneficial for them to live and learn.

To support this, Prensky (2008) describe today's digital learners, they:

- Think and process information way to different than before
- Native speakers of the digital language.
- Strong believers in the power of technology to enrich/enhance their learning experience

As 21<sup>st</sup> century educators, being the agents of change, we can't just sit down and be lax on the sidelines watching these changes happen. We must have to:

- ✓ Harness these technological innovations that contribute to the students' total development.
- ✓ Reflect on students' strong utilization of technology, and its impact on their learning and in their lives at-large.

### **Significance of the Study**

Today's technological advancements are truly interactive. Thus, it really suits the personality of 21<sup>st</sup> century learners. It is truly unquestionable that it's progressively

becoming an essential and significant component on their everyday activities, and one of the commonly used tools in modern technology is through the usage of the internet. It considerably affects how students acquire information on a daily basis.

As for students, with the aid of technology, they now have limitless access to information at a single click of a button, enabling them to be much more resourceful in terms of finding reliable and accurate information and getting their assignments accomplished. This study may also help them in becoming more engaged in the learning process, as well as becoming more aware of the effects of integrating technology in terms of how they learn and how it will aid in their development as 21<sup>st</sup> century learners.

As for schools, seamlessly integrating the use of technology, specifically the student response systems into the currently implemented curriculum, may improve the quality of teaching, which contributes to the development of both the school and the teachers professionally, and for establishing a more accurate, reliable, and consistent monitoring of student performance, as well as cooperative and collaborative planning of teachers and other stakeholders, regarding the development of their learners, as well as planning for their activities, for their daily lessons.

The researcher selected student response systems and academic achievement as the variables of this research because according to the previous studies gathered and conducted, they have a significant relationship towards one another, and it is so much applicable in the current situation of our learners, which demands an interactive and learner-centered methodology of teaching.

## **Definition of Terms**

### 1. Student Response Systems

- Sometimes called a personal response system, student response system, electronic audience response system, classroom response system or audience response system. (Bruff, 2018)
- Allows students to interact during class in an anonymous and engaging way. (Bartsch, R & Murphy, W, 2011)

### 2. Senior High School

- Covers the last two years of the K to 12 program and includes Grades 11 and 12. (DepEd, 2018)
- Students will go through a core curriculum and subjects under a track of their choice. (DepEd, 2018)

### 3. Media & Information Literacy

- A Core subject in the Senior High School that “*empowers citizens to understand the functions of media and other information providers, to critically evaluate their content, and to make informed decisions as users and producer of information and media content*”. (UNESCO, 2015)

## **Hypothesis**

1. The appropriate utilization of student response systems can facilitate high levels of engagement during lectures and discussions.

2. The appropriate utilization of student response systems can facilitate the process of drawing out prior knowledge, maintaining student attention, and creating opportunities for meaningful learning.

### **Research Questions**

The researcher is aiming at an extensive, in-depth research study about the effects of student response systems in teaching Media & Information Literacy to Senior High School students. The researcher will focus only on the effects of using student response systems, especially to the academic performance of senior high school students. Key research questions were formulated which will serve as the guides for the research:

- 1.) What are the significant characteristics of student response systems?
- 2.) What are the positive (if any) and negative effects of student response systems to students?
- 3.) What are the possible, preferable modifications/enhancements concerning the usage of student response systems to improve students' learning?

### **Theoretical Framework**

Mainly there are two (2) supporting models which will serve as the backbone of this research, and will strengthen its significance. The constructivist learning theory and gamification.



## **Constructivism**

This theory indicates that knowledge is not something finished and complete. Thus, the individual must actively construct it through *the interaction with the physical and social environment*. To further support it, **Active Learning** a methodology designed to support constructivism through the involvement of students in their learning process, allowing them to make analysis, synthesis and evaluations, therefore developing their thinking and reasoning abilities. (Caceffo & Azevedo, 2014).

## **Gamification**

Integrating game design elements into a non-game environment is what makes this concept suitable in the field of education. (Deterding, Zichermann & Cunningham, 2011) Modern student response systems such as Kahoot, Quizziz, Quizalize are the most appropriate examples of “gamified” student response systems.

However, one significant problem with gamification is that it can reduce the internal motivation that the user has for the specific activity or task, as it replaces internal motivation with external motivation.

As a solution if, the game design elements can be made meaningful to the user through information, then internal motivation can be improved as there is less need to emphasize external rewards, making the learning process more fruitful and engaging to the learner.

## Conceptual Framework

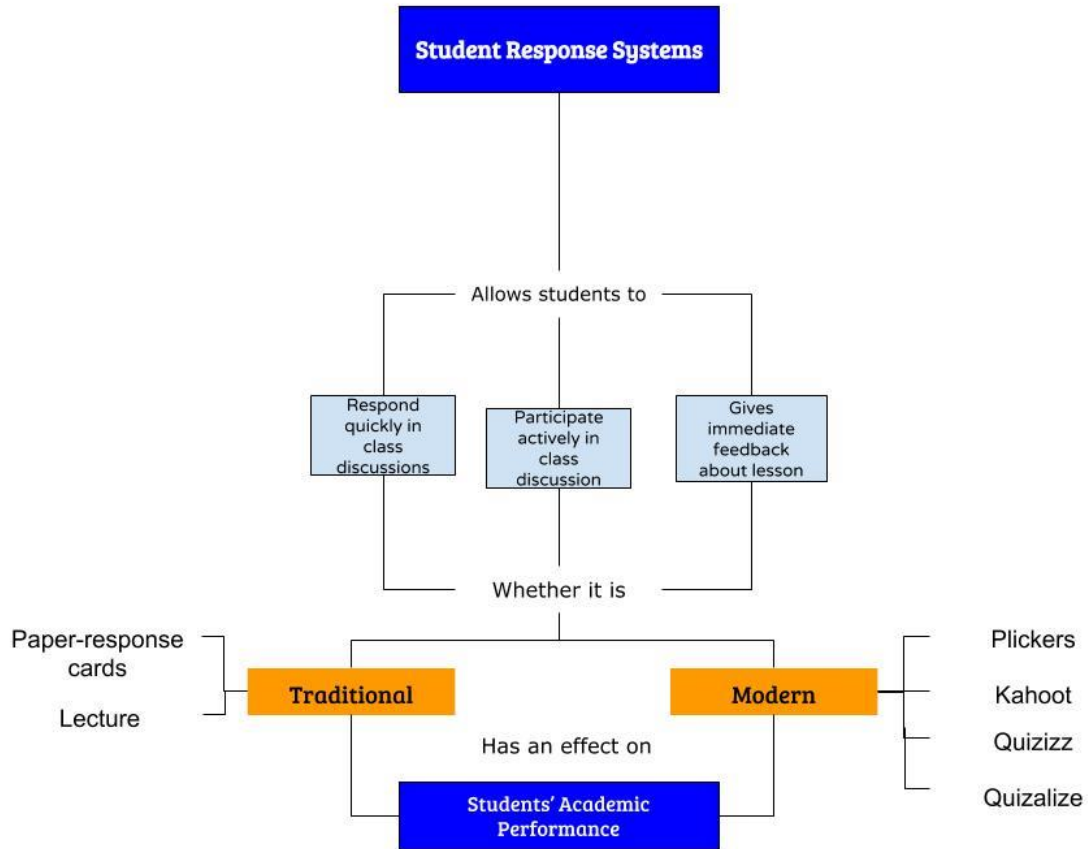


Figure 1.2 Conceptual Framework of the relationship of Student Response Systems and Academic Achievement

The conceptual framework, explains the relationship of the two (2) variables, along with the concurrent factors that explains and fortifies their relationship. The development of student response systems over time, from the traditional lectures and other modified materials, until the development of technology-driven responses systems, the need for the students to be actively involved in the learning process is the core consideration, along with recognizing individual differences and motivation.

## **REVIEW OF RELATED LITERATURE**

In today's context of 21<sup>st</sup> century learners, in order to achieve a meaningful teaching and learning process, one vital ingredient to it is **Interactivity**. Numerous studies suggested that enhancing interaction in the classroom could lead to better and more engaging learning process. Moreover, when it is present in the classroom, students become:

- More motivated to learn
- More attentive
- More participative
- More likely to communicate and exchange ideas with teachers and fellow students.

But the most important effect of interactivity in the classroom is that will influence students' learning outcomes, such as attitude and achievement.

But other studies also suggested on integrating another inevitable component interwoven on the lives of our learners today: **Technology**.

Technology can be embedded in teaching to deliver educational activities more efficiently and effectively and to facilitate participation a

### ***Student Response Systems: What is it really called?***

Student Response Systems, also called Audience Response Systems, Classroom Response Systems or Electronic Student Response Systems is an emerging technology, used to actively engage students within a learning environment, be it in a lecture theatre,

tutorial room, classroom or laboratory setting. It also provides immediate feedback regarding their understanding of the learning material.

When it is seamlessly embedded in instruction to support the cognitive and social processes of learning, classroom responses systems can provide unique opportunities for educators and learners (Siau, Sheng & Fui-Hoon Nah, 2007). It also promotes and encourages student involvement (Johnson & McLeod, 2005; Moredich & Moore, 2007; Ribbens, 2007).

***Student Response Systems: What are its Uses?***

<b>CATEGORIES OF USES OF STUDENT RESPONSE SYSTEMS</b>	
<b>Monitoring the classroom</b>	<ul style="list-style-type: none"> <li>- The teacher uses the classroom response system as a method to encourage attendance and basic level of attention and participation, but makes very few intentional changes to the sequence, delivery, or duration of lecturing on a given concept or topic.</li> <li>- The teacher utilizes the student response systems to gather <b><u>real-time information</u></b> about student</li> </ul>

	<p>comprehension of a given concept/topic.</p> <ul style="list-style-type: none"> <li>- From the responses, the teacher is able to determine whether he/she should spend more time elaborating an idea, or if the majority of the class understands it, allowing her to move on to the next topic.</li> <li>- The students' aid set the pace of instruction with clear indication of their comprehension or confusion.</li> </ul>
<p><b>Instruction and questioning</b></p>	<ul style="list-style-type: none"> <li>- In class, the teacher presents concepts and materials, interspersed with slides or questions asking for feedback from students, either in true or false or multiple choice format.</li> <li>- They can be placed in before, during or after with regular lecture presentations so the teacher can gather feedback on-the-spot,</li> </ul>


	<p>without switching applications during the course of the lecture.</p> <ul style="list-style-type: none"> <li>- Students are typically given a short period of time to key in responses that comes in various forms.</li> </ul>
<p><b>Response and Display</b></p>	<ul style="list-style-type: none"> <li>- In terms of modern response systems, it instantly tabulates and graphs student responses, and these simple graphs can be displayed on the following presentation slide.</li> <li>- Once students see the distribution of responses, many instructors take the opportunity to encourage discussion, asking students to reconsider the question in groups and to reach an agreement about the best response.</li> <li>- Instructors often follow the discussion with a second cycle of questioning, response, and display before wrapping up the presentation</li> </ul>

	<p>of a given concept. This approach is often referred to as “peer instruction.”</p>
<p><b>Analyzing and managing data</b></p>	<ul style="list-style-type: none"> <li>- Most classroom response systems allow instructors to export and save response data for future analysis and assessment, allowing instructors to save and track student responses over the course of the school year, and simplifies the assessment process. (Deal, 2007)</li> <li>- Classroom response systems often involves a transformation in the teacher’s teaching philosophy and methodologies. This approach involves combining the presentation of key concepts with question and response cycles, followed by periods of discussion where students explain or defend their responses</li> </ul>


	<p>and try to persuade classmates with their reasoning.</p> <ul style="list-style-type: none"> <li>- Discussions are typically wrapped up with another question and response sequence where students can indicate their new response to the same question.</li> </ul>
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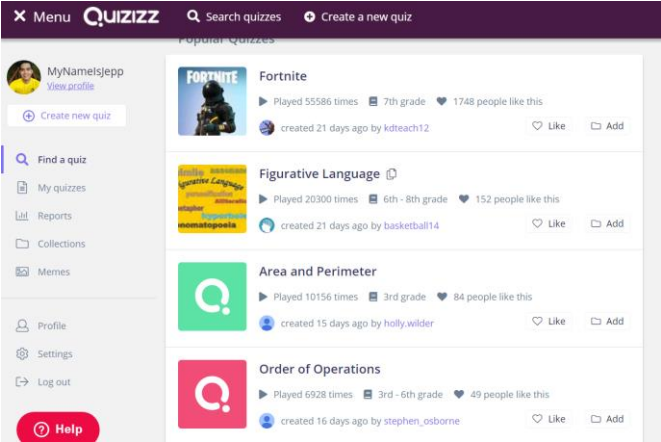
*Student Response Systems: What are its examples?*

**Traditional**

Modern Student Response Systems		
EXAMPLE	DEFINITION	SAMPLE SCREENSHOTS
Kahoot	A game-based learning platform used for any subject, any age, and with any device - and players don't even need to register for an account. Our platform is designed to make	



	<p>learning fun and engaging. (<b>Kahoot Library, 2017</b>)</p>	
<p>Quizalize</p>	<ul style="list-style-type: none"> <li>• An online platform for classroom polling and assessing that can be accessed by computer, tablet, or mobile phone.</li> <li>• Teachers can create quizzes to test students' knowledge in the classroom, then see the results propagated in the Teacher</li> </ul>	

	<p>Dashboard through data reports. (Shen, 2015)</p>	
<p>Quizizz</p>	<ul style="list-style-type: none"> <li>• Is a free formative assessment tool that allows you to conduct fun assessments both in class and as homework, working on all device. (Quizizz, 2018)</li> </ul>	 <p>The screenshot shows the Quizizz website interface. At the top, there is a navigation bar with a 'Menu' button, the 'Quizizz' logo, a search bar for quizzes, and a 'Create a new quiz' button. Below the navigation bar, the page is titled 'Popular Quizzes'. A sidebar on the left contains navigation options: 'Create new quiz', 'Find a quiz', 'My quizzes', 'Reports', 'Collections', 'Memes', 'Profile', 'Settings', and 'Log out'. The main content area displays a list of quizzes:</p> <ul style="list-style-type: none"> <li><b>Fortnite</b>: Played 55586 times, 7th grade, 1748 people like this. Created 21 days ago by kdteach12.</li> <li><b>Figurative Language</b>: Played 20300 times, 6th - 8th grade, 152 people like this. Created 21 days ago by basketball14.</li> <li><b>Area and Perimeter</b>: Played 10156 times, 3rd grade, 84 people like this. Created 15 days ago by holly.wilder.</li> <li><b>Order of Operations</b>: Played 6928 times, 3rd - 6th grade, 49 people like this. Created 16 days ago by stephen_osborne.</li> </ul>

***Student Response Systems: Is it Really Effective?***

Researches had shown that actively engaged students will absorb and retain more content (Moredich & Moore, 2007; Trotter, 2005). It was also proved that using a variety

of teaching/learning methodologies enhances learning for students with differing learning styles (Barell, 2003; Fink, 2005).

In addition, it clearly supports a learner-centered teaching approach and the creation of significant learning experiences are advertised as means of creating interaction in the classroom (Weimer, 2002; Barell, 2003; Fink, 2005).

With regards to its effects on students, they come to class more prepared and motivated as they know if there will be a quiz or any type of assessment, and it supports stimulating discussion among students about the plausibility of quiz responses (Fitch, 2004; Hatch, et al., 2005; Johnson & McLeod, 2005; Moredich & Moore, 2007; Ribbens, 2007; Skiba & Barton, 2006; Trotter, 2005).

Furthermore, it provides immediate feedback to both teachers and students. For the teachers, they utilize the gathered responses to determine:

- The possible concept/s that requires supplemental instruction.
- The possible concept/s that has been mastered.
- Possible adjustments/modifications in teaching strategies to be used to el

Overall, student response systems, traditional or digital is:

- Provides enjoyment and maintains student interest (Bartsch, R & Murphy, W, 2011)
- Encourages student participation , discussion, and quality of learning (Dangel & Wang, 2008)
- Promotes higher levels of student engagement and motivation (Firsing III, S, et.al 2017)

- Improves student feedback, formative and summative assessment (Kay & LeSage, 2009)
- Improves student performance (Stowell, J & Nelson, J, 2007)

## **METHODOLOGY**

### **The Research Design**

This study uses a quasi-experiment to identify to examine the utilization of student response systems in teaching Media & Information Literacy to senior high school students, and in-line with the main goal of the researcher, which is to determine the effects, either positive or negative, of its usage to the participants.

### **The Participants**

The data were collected from the participants of this study are female senior high school students of an all-girls catholic school in Marikina City, enrolled for the current academic year 2018-2019. In detail, the sample consisted of 2 sections, 76 participants, and ages 17-18 years old. There will be 38 students per section, 21 from the HUMMS (Humanities and Social Sciences) Strand and 17 from the ABM (Accountancy Business and Management) Strand.

### **The Materials**

The following are the materials to be used during the experiment:

<b>SECTION 1</b>	<b>SECTION 2</b>
------------------	------------------

Semi-detailed Lesson Plan ( <i>without technological integration</i> )	Semi-detailed Lesson Plan ( <i>with integration of a student response system</i> )
Classroom ( <i>Whiteboard, Whiteboard Markers</i> )	Quizizz (student response system)
	Computer Units
	Stable Internet connection
Media & Information Literacy Teacher ( <i>facilitates and teaches</i> )	
Pre and Post Tests	

**The Data Gathering Procedure**

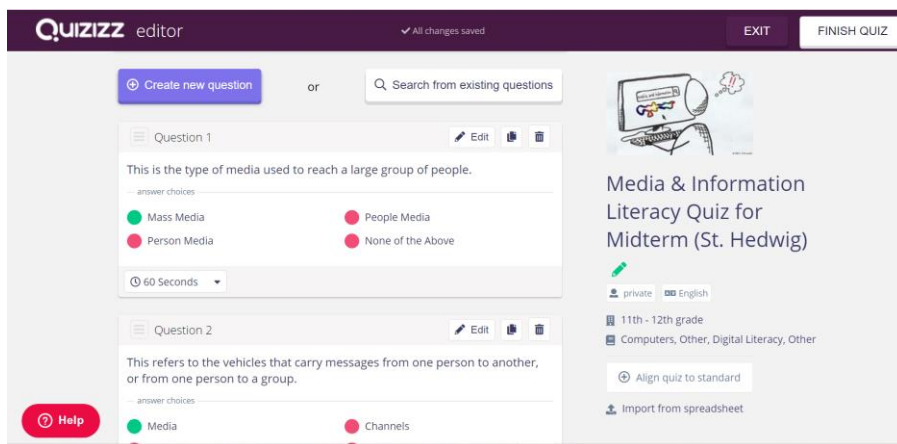
Before the instrumentation of the tests, the researcher prepared the necessary requirements for conducting the test to the sample population. The letter of request was sent to the School Principal of the High School Department, who will read and sign the letter, and upon her approval, the administration of the test will pursue.

After preparing and the approval of the appropriate letter of request, the next step is to ensure the validity evidence of the instruments by reviewing the questionnaire for the following criteria: (1) Objectivity of words used, (2) relevance of the items to the topic/title, (3) use of the language, (4) absence of biased words and statements, (5) item construction, and (6) clearness of the directions/ instructions.

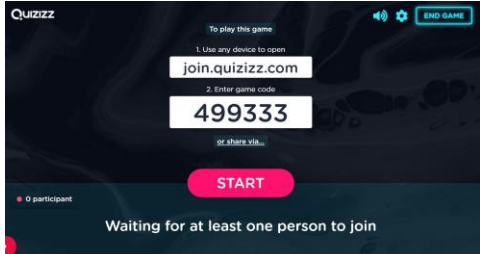
For 20 minutes, the two sections will first answer a pre-test conducted by the MIL teacher, which consists of 10-20 multiple choice questions pertinent to the lesson indicated

in the lesson plans. After 20 minutes, both sections will now go with the lesson proper. The main difference is that 1 section will learn without any technological integration (traditional method) inside the regular classroom, while the other section will learn with the utilization of Quizizz, a digital student response system, which will be utilized as a form of summative assessment inside the computer laboratory.

After the execution of the lesson both classes will experience the summative assessment designed for the traditional method and student response system, Quizizz.



The summative assessment consists of the following details:

Section 1	Section 2
Pen-and-paper	Quizizz 

Multiple Choice (25 Items)	Multiple Choice (25 Items)
Sequenced order of questions	Jumbled order of questions
NO TIME LIMIT per question	30 seconds per question
Manual Checking (red ballpen)	Checked after each question
Without immediate feedback	With immediate feedback (memes)
Collected after time limit given to answer	Scores are immediately given after the time limit given to answer.
	Automatically generated item analysis (Microsoft Excel)

## The Measures

In-line with the type of experiment used in this research, the following are the statistical treatments to be used:

<b>STATISTICAL TEST</b>	<b>BRIEF DESCRIPTION</b>
T- Test	<ul style="list-style-type: none"> <li>• Used to compare to independent groups of participants and the data collected from those groups.</li> <li>• Compares the means of the data sets to determine if there is a statistically significant difference.</li> <li>• In the context of this research:</li> </ul>

	Students who experienced Traditional Assessment vs. Student Response System
ANCOVA (Analysis of Covariance)	<ul style="list-style-type: none"> <li>Reduces the initial differences between groups, which is important due to the lack of randomization, by making compensating adjustments to the data.</li> </ul>

**The Validity**

To ensure that what is supposed to measure is accurate, the following measures will be made:

1. The experiment will be conducted at the **same timeframe**.
2. The contents of both pretest and posttest are the same and prepared by the researcher.
3. All gathered data from the summative assessments will be processed carefully and statistically treated.
4. An interview will be conducted after the entire lesson proper for both sections to gather authentic responses based from their experiences.



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**Appendices**

a.) Sample of generated data from Quizizz (Microsoft Excel) Part 1: Class Level

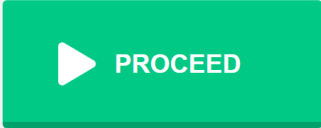
Quiz started on: Thu 08, Feb 01:59 AM Total Attendance: 38 Average Score: 16544					
Questions	Class Level				
	# Correct	# Incorrect	# Unattempted	Sabrina Feliciano	Bernadette Sison
This is the type of media used to reach a large group of people.	38	0	0	Mass Media	Mass Media
This refers to the vehicles that carry messages from one person to another, or from one person to a group.	14	24	0	Media	Channels
Media is a broad term that refers to ANY facts or details about a subject that depict meanings to a person, event or phenomena.	17	21	0	FALSE	FALSE
Which of the following is NOT a 21st Century Skill?	35	3	0	Sequestration	Sequestration
This refers to the set of abilities which require individuals to recognize when information is needed to locate, evaluate and utilize it effectively.	38	0	0	Information Literacy	Information Literacy
Coming up with informed decisions through careful evaluation				Media and Information	Media and Information

b.) Sample of generated data from Quizizz (Microsoft Excel) Part 2: Player Level


Quizizz: Media & Information Literacy Midterm Quiz (St. Frideswida)				
Quiz started on: Thu 08, Feb 01:59 AM Total Attendance: 38 Average Score: 16544				
Players	Score	Accuracy	Started At	Info
Sabrina Feliciano	21680	92%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other
Bernadette Sison	21670	92%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other
Soleil Sotin	21030	88%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other
Gabrielle Carangian	20880	92%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other
Paula Arganda	20570	88%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other
Lissa Andrea De Mesa	18870	84%	Thu 08, Feb 03:04 AM	IP Address: 121.58.237.102 Chrome on Other

c.) Quizizz Question Settings

### Media & Information Literacy Quiz for Midterm (St. Hedwig)



Question Settings




**Shuffle Questions**

Jumble the order of questions for students



**Shuffle Answer Options**

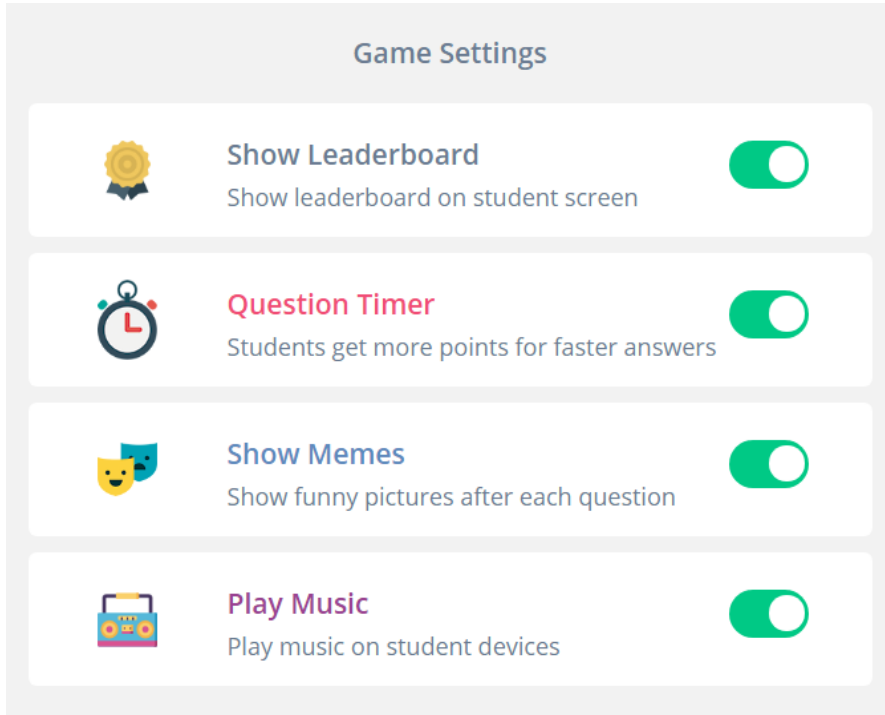
Jumble the answers for each question



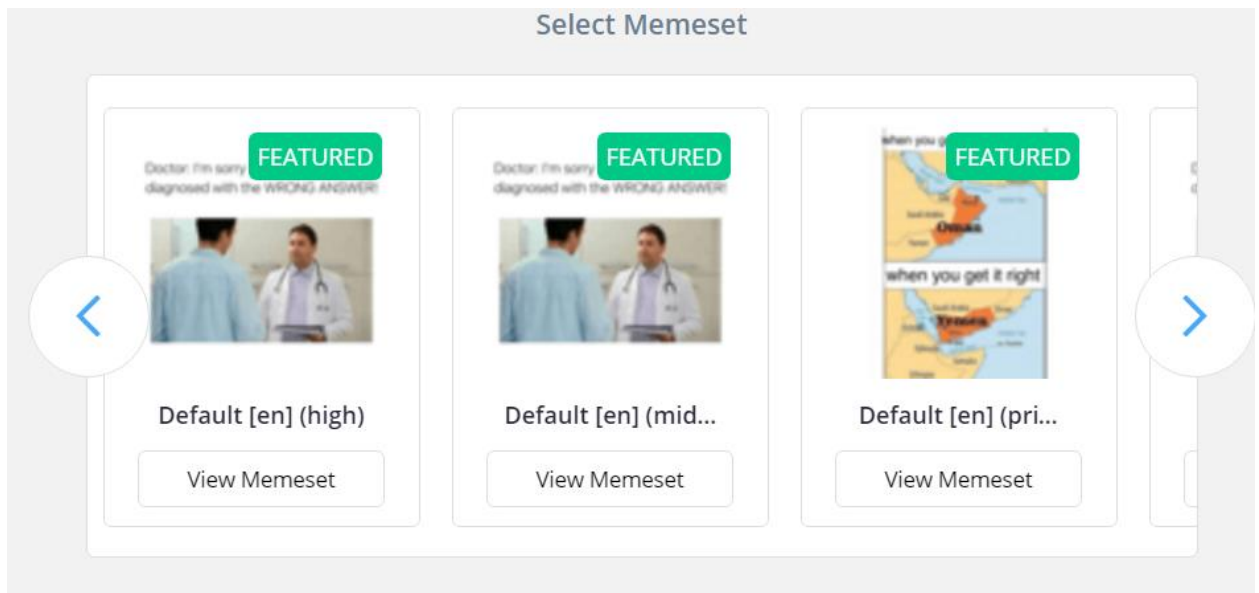
**Show Answers**

Show answers after questions

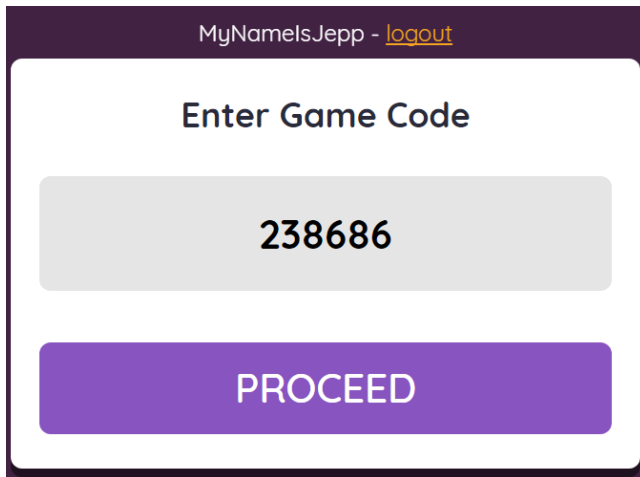
#### d.) Quizizz Game Settings



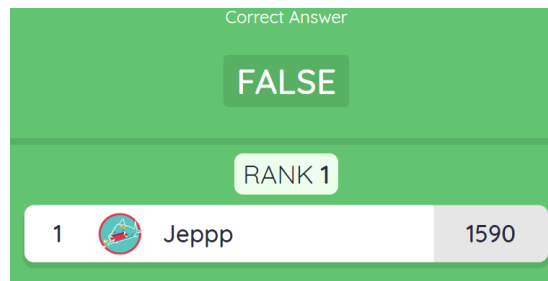
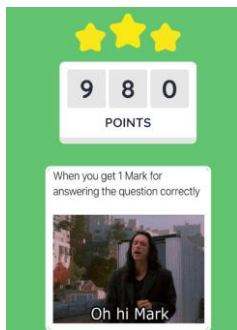
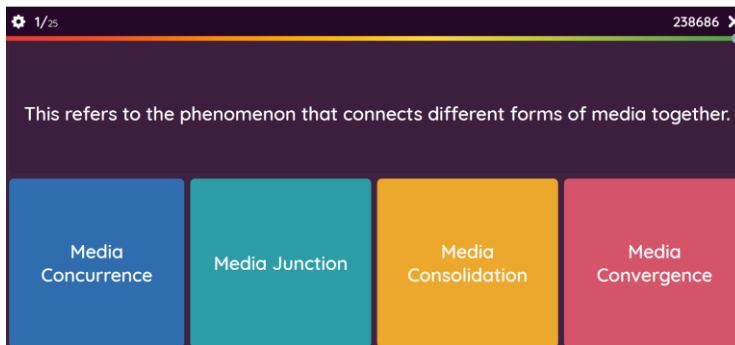
#### e.) Quizizz Memeset (for feedback)



f.) Quizizz student interface (before play)



g.) Quizizz student interface (during play)



h.) Quizizz student interface (after play)

The screenshot displays the Quizizz student interface. At the top, there are two tabs: "Leaderboard" and "Questions", with "Questions" being the active tab. Below the tabs, it says "25 Questions" and "Sort by Accuracy". A row of question numbers from 1 to 25 is shown, with question 4 and question 19 highlighted in teal. Below this row, questions 22, 23, 24, and 25 are also visible. The main content area shows question Q.1: "This is the type of media used to reach a large group of people." To the right of the question, it says "Avg. time taken 0 secs" and "0 correct, 0 incorrect". Below the question, there are four multiple-choice options: a) Mass Media, b) People Media, c) Person Media, and d) None of the Above.

25 Questions Sort by Accuracy

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

22 23 24 25

Q.1 This is the type of media used to reach a large group of people. Avg. time taken 0 secs 0 correct, 0 incorrect

- a) Mass Media
- b) People Media
- c) Person Media
- d) None of the Above