Volume: 5 | Issue: 9 | September 2019 || SJIF Impact Factor: 5.614||ISI I.F Value: 1.188 ISSN (Online): 2455-3662

EPRA International Journal of
Multidisciplinary Research (IJMR) *Peer Reviewed Journal*

PERCEPTION AND PRACTICES OF 21ST CENTURY SKILLS OF SECONDARY SCIENCE AND MATHEMATICS TEACHERS

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ABSTRACT

This study aimed to determine the frequency of the practices of 21st century skills of the secondary science teachers in Medina district. In addition, the teaching and assessment of the 21st century skills of the students were determined. Respondents were asked to answer the survey questionnaire developed by Jason Ravitz. The 33 teacher-respondents answered the questionnaire related to the 21st century skills. The teachers perception results revealed that communication skills, critical thinking, collaboration and creativity and innovation were rated as 3.96, 3.95 and 3.75, 3.62 and 3.57 respectively which can be interpreted as "to a great extent". In addition, results revealed that the teacher's practices in communication, collaboration, creativity and innovations kills were 3.91, 3.85, 3.79 and 3.61 respectively which is interpreted as "1-3 times per week" of practices. Critical thinking skills had the lowest rating which is 3.30, which can be interpreted "1-3 months per week". Based on the results, the respondents have great perception towards teaching and assessing the 21st century skills. Finally, the teacher-respondents practiced the 21st century skills frequently in their respective classrooms.

KEYWORDS: *21st Century skills, Perception & Practices*

1. INTRODUCTION

Year 2016 was a milestone for the basic education system in the Philippines because of the implementation of the last phase of the K to 12 program which is the Senior High School. The K to 12 curriculum promises to develop an individual into a whole person by equipping them with 21st century skills such as collaboration, critical thinking, creativity and communication (**Michigan's Regional Literacy Training Centers, nd)**. At present, the world are globally and digitally connected and that acquisition of new skills and knowledge through the 21st century skills is necessary (Ross, 2017). In the Philippine context, the 21st century skills would be very vital to the Filipino learners because it would result to a graduate who is ready for employment, entrepreneurship and higher education (Department of Education, 2015). Based on the following reasons, there is a need to look into the 21st century teaching and assessment and the frequency of practices by the teachers to the various 21st century skills in their classes.

In this work, 19 science teachers and 14 mathematics teachers in a certain district were chosen as the respondents since it is expected that they are the prime movers of 21st century skills due to the nature of the subject that they are handling.

This work determined how much teachers perceive having taught and assessed each of the 21st century skills. In addition, the frequency of practices

of the respondents in the 21st century skills was also assessed.

2. OBJECTIVES

1. To determine how much the teacher perceive having taught and assessed each of the 21st century skills.
2. To determine the frequency of practices of science teachers on the 21st century skills.

Mean	Interpretation (Part I)	Interpretation (Part II)
4.5-5.0	to a very great extent	almost daily
3.5-4.4	to a great extent	1-3 times per week
2.5-3.4	to a moderate extent	1-3 times per month
1.5-2.4	to minor extent	a few times a semester
1.0- 1.4	not really	almost never

3. METHODOLOGY

A letter was sent to the principals of the Schools involved to seek permission in administration of the questionnaire. The respondents were given and asked to accomplish the questionnaire. The questionnaire was adapted from the study of Ravits (2014). The first and second part of the questionnaire can be interpreted as follows:

4. SAMPLING DESIGN

In this work, all the secondary science and math teachers of Medina district in the division of Misamis Oriental, Region X, Philippines. Census was utilized due to small number of science and math teachers in Medina District.

5. STATISTICAL DESIGN

This work utilized qualitative and descriptive research design to address the research questions. All public secondary science and mathematics teachers in a certain district of Misamis Oriental served as the participants in this work. Furthermore, qualitative data through a focus grouped discussion was employed to justify the quantitative results of the work.

6. GEOGRAPHICAL AREA

The research locale is a comprehensive high school of the Division of Misamis Oriental, Region X, Philippines and belongs to a 3rd class municipality. The school belongs to rural area and is situated at the Eastern part of Misamis Oriental. The municipality where the data are gathered is in Medina, Misamis Oriental. Below is the location of Medina District.

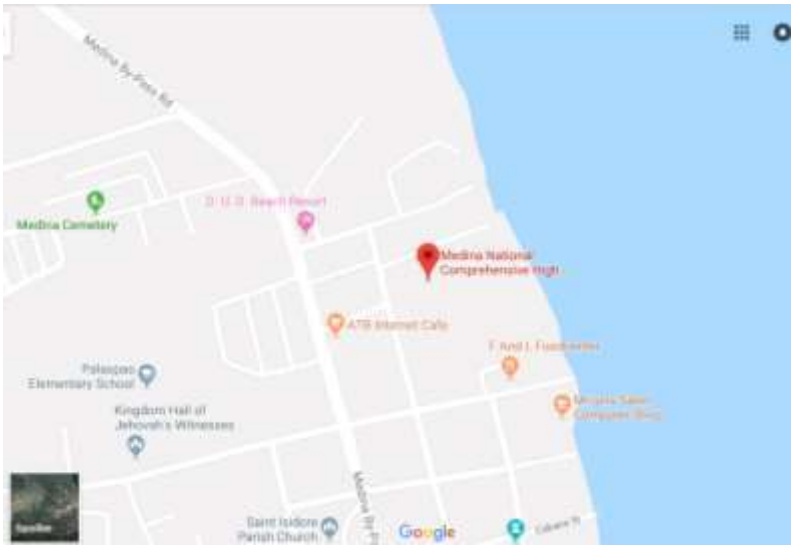

Figure 1. The Geographical Location of MNCHS

7. RESULTS

21st Century Skills	Mean Rating	Verbal Interpretation
Communication	3.96	To a great extent
Critical Thinking	3.95	To a great extent
Collaboration	3.75	To a great extent
Creativity and Innovation	3.62	To a great extent
Using Technology as Tool for Learning	3.57	To a great extent

Table 1. How much Teachers' Perceived Teaching and Assessment of 21st Century Skills

Table 1, revealed that communication, critical thinking, collaboration, creativity and innovation and using technology as tool for learning have a ratings of 3.96, 3.95, 3.75, 3.62 and 3.57 respectively. The teachers' perception of having taught and assessed these 21st century skills in their classes can be verbally interpreted as "to a great extent".

In addition, table 1 revealed that among the 21st century skills involved it was communication skill was taught and assessed by the participants had the highest rating. When interviewed the participants reasoned that allowing the students to communicate would require less preparation on the part of the teachers. On the other hand, teaching and assessing using technology as tool for learning was the least rated skill (3.61). This can be attributed to the lack of technological tools that can be used to for teaching and assessing the students. However, this rating can be interpreted as "to a great extent" which is similar to that of the other 21st century skills. According to the respondents, some schools have limited technology to be used for teaching and assessing while others have the access to technology particularly computers. Furthermore, some teachers allow the students to use their personal gadgets in the class.

21st Century Skills	Mean Rating	Verbal Interpretation
Communication	3.91	1-3 times per week
Collaboration	3.85	1-3 times per week
Creativity and Innovation	3.79	1-3 times per week
Using Technology as Tool for Learning	3.61	1-3 times per week
Critical Thinking	3.30	1-3 times per month

Table 2. Frequency of Practices of the 21st Century Skills

Table 2 showed the frequency of practicing the 21st century skills of the participants in their classes. Communication had the highest rating which was 3.91 followed by collaboration, communication, using technology as tool for learning which were 3.85, 3.79 and 3.61 respectively.

In addition, the table above revealed that communication had the highest rating (3.91) in terms of frequency of teaching the skill. When interviewed about this result, the respondents mentioned that they asked the students to report and that most of their formative assessment is in the form of oral recitation. Collaboration was rated second in term of frequency of being practiced in the classroom because the students were ask to work collaboratively to address various tasks. On the other hand, critical thinking skills was least practiced which has a mean rating of 3.30 which can be interpreted as 1-3 months. This is due to the difficulty and lack of time in designing activities that would require critical thinking skills according to the teacher-respondents.

8. SUGGESTIONS

As a suggestion, this work must cover a wider scope to generalize the results. In addition, the teachers must sustain the teaching and assessment in their classes. Activities related to the enhancement of critical thinking skills of the students must be done frequently.

9. CONCLUSION

In this particular setting, all the 21st century skills are taught and assessed "to a great extent" as perceived by the teacher-respondents. Communication, Collaboration, Creativity and Innovation and using technology as tool of learning are frequently practiced by the teacher (1-3 times per week) but the practices of critical thinking skills is low (1-3 per month). The results in this work cannot be generalized to the whole institution since only one district is covered. As to how much teachers perceive having taught and assessed 21st century skills, the teachers in this particular district are able to teach and assess the 21st century skills thereby preparing their students to opportunities in the future.

In the case of frequency of practices, the students are ready and exposed frequently to various 21st century skills except for the critical thinking skills. The frequency suggests that these 21st century skills are honed due to the exposure of students to such 21st century skills except for the critical thinking skills.

10. REFERENCES

1. *Department of Education.(2015). K to 12 Infographics. Retrieved from: http://www.deped.gov.ph/infographics/k-12-infographics*
2. *Michigan's Regional Literacy Training Centers. (nd). Michigan's Mission: Literacy. Retrieve from: http://www.missionliteracy.com/mission-literacy-promotional-flyer.html*
3. *Ravitz, J. (2014). A Survey for Measuring 21st Century Teaching and Learning: West Virginia 21st Century Teaching and Learning Survey. Retrieved from: https://www.researchgate.net/publication/289377968_A_survey_for_measuring_21st_century_teaching_and_learning_West_Virginia_21st_Century_Teaching_and_Learning_Survey_WVDE-CIS-28*
4. *Ross, David (2017). Empowering Our Students With 21st Century Skills for Today. Retrieved from https://www.gettingsmart.com/contact/*