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21st Century Skills of Secondary School Teachers in the Philippines

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Abstract: This survey focused on 21st century skill classes in the Philippines and conducted a questionnaire survey to assess teachers' practice and perception. It is a descriptive survey in which the author created a questionnaire on the Likert scale, conducted the survey, and tabulated the response results. This study uses a purposive sampling for 20 Araling Panlipunan teachers of Los Baños National High School Batong Malake. Quantitative data was treated with frequency, percentage and mean. The 21st century skills are composed of several inter-related skill sets: Learning and Innovation Skills, Information Media and Technology Skills and Life and Career Skills. The teachers must integrate these skills framework into their daily instructions with various tools for effective learning.

Based on these findings, the mean value of sampled teachers' practice for information, media and technology skills are lower than that of other skills. Because of the lack of school facilities, that makes it hard for all of them to use tablet terminals or the Internet in their class. On the other hand, the teachers' perception towards all new skills is generally high. Respondents have noted that despite limited facilities and large number of students in school, they are ready to cope with the teaching challenges in practicing a set of new skills to empower students.

Key words: 21st century skills; learning and innovation skills; information and media technology skills; life and career skills

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I. Introduction

The twenty-first century, is known to be as Information and Technology Age or Fourth Industrial Revolution. Having that, it requires much more skills for a student to be prepared in the "World of Work". In the Philippines, through the Department of Education, schools and their curriculum must reflect those skills that are essential for success. The continuous flow of changes and developments on economic, technological information, demographic and political forces have transformed the way the people work and live.

Today, the challenges of daily life and work have undergone changes brought about by rapid development in technology and globalization. Many employers and educators have noted that a new set of skills is required to succeed in this world of new challenges. Solutions that will depend on fixed knowledge and linear thinking are being replaced by new solutions that requires greater collaboration, flexibility and innovation in order to adopt in a range of changing perspectives and new technologies. These major challenges affect the current economy and its

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state of global competitiveness and it remains the biggest task on how to cope up. The country must take full advantage of the nation's labor force potential and create high performance workforces through K-12 education aligned with the 21st century skills. Filipino educators who are tasked with fostering students to live in the 21st century must possess knowledge and skills that must be transferred to the student in order for them to meet the requirements for the demand of global competitiveness in educational qualifications.

But the margin between the knowledge and skills that students learn in school and those are needed in the 21st century communities and workplaces is big, due to lack of sufficient school facilities and resources that are essential for their learning of technical or occupational skills necessary to obtain employment.

In efforts to empower students who attain a set of new skills, the Araling Panlipunan (Social Studies) Department of Los Baños National High School Batong Malake in the Philippines anchored with the Department of Education K-12 curriculum. The teachers are committed to ensure that student graduates are equipped with the skills needed for college, work and life in the global community. This study attempts to evaluate teacher's practices and measure their perception of their teaching practices in line with the K-12 classifications of 21st century skills.

2. 21st Century Skills and Araling Panlipunan Curriculum

The 21st century skills are composed of several inter-related skill sets: Learning and Innovation Skills, Information Media and Technology Skills and Life and Career Skills. The goal of K-12 Curriculum is to achieved "Education for All" (Education for All 2015) and the K-12 Philippine Basic Education Curriculum Framework. Its main objective is to promote the 21st century skills in order to produce "functionally literate and developed Filipino." Its contents, content standards, and performance standards on each grade levels are contributing to meet the said objective. In order to meet the objective, Araling Panlipunan Curriculum set its goal to develop citizens who are; inquisitive, reflective, accountable, productive, has love for country and environment, and humane citizen with national and global perspectives and value for historical and social issues.

In achieving this objective, it follows learning theories such as; constructivism, collaborative learning, and experiential learning. It also uses contextual and thematic-chronological method, conceptual, inquiry based, integrative, interdisciplinary and multidisciplinary approaches. To achieve the said goals, the curriculum aims to develop critical thinking, perspective and historical valuing and other Araling Panlipunan discipline by molding learners' knowledge and skills.

From grade one to grade twelve, topics, content and performance standards of each units are anchored on Araling Panlipunan seven themes: 1) people, environment and society, 2) time, continuity and changes, 3) culture, accountability and nationality, 4) rights, responsibilities and citizenship 5) power, authority and governance, 6) production, distribution and consumption 7) and regional and global cooperation. The skills on different Araling Panlipunan discipline such as: creativity, critical thinking and good decision making, research/investigation, history and social skills, communication and enhancement of global perspective are developed according to their needs for learning.

As a whole, the objective on teaching K-12 Araling Panlipunan is to developed students understanding on issues on history, geography, politics, economics and other related disciplines so that students can achieved the four pillars of learning (know, do, be, and live together). The curriculum gives emphasis on deeper understanding of concepts and terms. As a proof of deeper understanding, students must formulate his own meaning and own

definition of each lessons and must contextualize and apply these lessons on real life with an out most sense on his own life and the society where he lives.

3. Related Literatures

Boholano (2017) conducted a research entitled, Smart Social Networking: 21st Century Teaching and Learning Skills, it was found out that Smart social networking requires critical‐thinking and metacognitive skills and the ability to integrate and evaluate real‐world scenarios and authentic learning skills for validation.

Aguila (2015) a research entitled, 21st Century Skills of Nueva Vizcaya State University Bambang Campus, Philippines, Determined the 21st Century Skills of students in Nueva Vizcaya State University, First Semester, SY 2014-2015. Specifically, it shows students' profile, their 21st century skills learning and innovation skills, information, media and technology skills and life and career skills. It is also found out that there is a significant correlation exists between profile variables and the 21st century skills and significant correlations exist between and among the dimensions of the 21st century skills. It also proved that there was a very significant correlations exist between and among the dimensions of the 21st century skills

Chernobilsky, Granito (2012) conducted a research on The Effect of Technology on a Student's Motivation and Knowledge Retention. It was found out that technology can be a powerful educational tool for those who have interest in it. For students with no interest in using technology, they will still benefit through the use of traditional methods in teaching learning processes. This research indicates the fact that assigning a computer-based project without planning to a group of students will not guarantee to generate a high test score. The first thing to consider is a need for interest and motivation with the use of technology for students to succeed. In order to achieve good result with any instructional topic, technology must be introduced at the early stage.

Miller (2009) conducted a research about the development of 21st century communication, collaboration, and digital literacy skills of students at the high school level through the use of online social network tools. The significance of this study was based on evidence that high school and college students are not graduating possessing the requisite skills of communication, collaboration, and digital literacy skills but employers see these skills essential for their success as employees.

Jacqueline (2007) through an interpretative case study dealing with demands for 21st century education, it examined the dilemma of secondary educators and found out that in order to cultivate better-prepared high school graduates, teachers must develop new educational practices that gears students to understand the economic change, global competition, shifting labor markets, and technological advances.

4. Methodology

This is a descriptive type of research that uses a self-constructed questionnaire using likert scale. This study uses a purposive sampling for Araling Panlipunan teachers of Los Baños National High School Batong Malake. Quantitative data was treated with frequency, percentage and mean. Findings from this study will help to identify 21st century skills teachers practice on their class and teachers' perceptions on their practices in attaining 21st century skills of their students.

The respondents are 20 teachers from Araling Panlipunan (Social Studies) Department composed of 5 male and 15 female. 5 are teaching grade 7 Asian Studies, 6 are teaching grade 8 World History, 4 are teaching grade 9 Economics and 5 are teaching grade 10 Contemporary Issues. As for their years in service, 3 of teachers are 1 year

in service, 1 is 2 years in service, 4 are 5 years in service, 1 is 6 years in service, 1 is 7 years in service, 3 are 10 years in service, 1 is 12 years in service, 1 is 14 years in service, 1 is 18 years in service, 1 is 21 years in services, 1 is 22 years in service, and 1 is 27 years in service.

The authors asked respondents about teaching practices and perceptions that might support students' learning of the 21st century skills: (1) Life and Career Skills, (2) Information, Media, and Technology Skills, and (3) Learning and Innovation Skills. There are limits to these skills that students can learn at school. Teachers with a higher level of perception toward the development of students' capacity are integrating strategies designed to attain 21st Century Skills for students into their teaching practice.

Specifically, this research will address the following questions:

1) How do teachers practice learning 21st Century Skills on their class?
2) What is the level of teacher's perception in attaining 21st century skills for students?

As for the first question, the authors give the examples of practices in 21st century skills. The respondents choose one from the following five alternatives:

1) Almost never
2) A few times per grading period,
3) 1-3 times per month,
4) 1-3 times per week,
5) Almost daily.

For the second question, the authors check the teachers' perceptions on 21st century skills. Likert scaling for the degree of agreement are the following:

1) Strongly disagree
2) Disagree
3) Neither agree nor disagree
4) Agree
5) Strongly agree

For the respondents' demographic profile, there is an average age of 39 and the average length of service is 10 years. Majority are female 15 or 75% while male is 5 or 25 %. From the 20 teacher respondents, 5 or 25% are teaching grade 7, 6 or 30% are teaching grade 8, 4 or 20% are teaching grade 9 and 5 or 25% are teaching grade 10.

(1) Life and Career Skills

The following items (a, b, c, d, and e) are some examples of practices that may help students learn Life and Career Skills. The authors asked the respondents how often they do the following in their teaching,

a) Use instructional materials integrating current works environment
b) Practice students' flexibility in assigned tasks
c) Teach students to learn initiative and self-direction
d) Help students to interact effectively with others
e) Conduct activities which develop productivity and accountability

The following are the computed mean scores on teachers' practices of Life and Career Skills. a) with a mean value of 3.9, the respondents uses instructional materials integrating current works environment on their class 1-3 times per week, b) with a mean value of 3.85, the respondents practice students' flexibility in assigned task 1-3 times per week, c) with a mean value of 3.85, the respondents teach students to learn initiative and self-direction

1-3 times a week, d) with a mean value of 4, the respondents help students to interact effectively with others 1-3 times per week, e) with a mean value of 3.7, the respondents conduct activities which develop productivity and accountability in their class 1-3 times per week. With a weighted mean of 3.86, teachers' practices Life and Career Skills 1-3 times per week on their class.

The authors asked the respondents, "To what level do you agree with these statements about your CLASS?"

a) I have tried to develop students' life and career skills as a tool for learning
b) Most students have learned to use life and career skills while in my class
c) I have been able to effectively assess students' life and career skills for learning

The following are the computed mean scores on teachers' perceptions on Life and Career Skills Practices. a) with a mean value of 4 the respondents agreed that they have tried to develop students' life and career skills as a tool for learning, b) with a mean value of 4.05, the respondents agreed that most students have learned to use life and career skills while in their class, c) with a mean value of 3.9, the respondents agreed that they have been able to effectively assess student's life and career skills for learning. With a weighted mean of 3.98, the respondents agreed that life and career skills are being practiced on their class. With a total weighted mean of 3.51 respondents agreed that 21st century skills are being practiced.

(2) Information, Media, and Technology Skills

The following items (a, b, c, d, e, f, g, h) are some examples of practices that may help students learn to use information, media, and technology as a tool for learning. The authors asked the respondents how often they do the following in their teaching,

1) Use technology or the Internet for self-instruction (e.g., videos, tutorials, self-instructional websites, etc.)?
2) Select appropriate technology tools or resources for completing a task?
3) Evaluate the credibility and relevance of online resources?
4) Use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.)?
5) Use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.)?
6) Use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.)?
7) Use technology to interact directly with experts or members of local/global communities?
8) Use technology to keep track of their work on extended tasks or assignments?

The following are the computed mean scores on teachers' practices on Information, Media and Technology Practices. a) with a mean value of 3.55, the respondents said that students' use technology or the internet for self-instruction 1-3 times per month, b) with a mean value of 3.35 the respondents select appropriate technology tools or resources for completing a task 1-3 times per month, c) with a mean value of 3.2, the respondents evaluate the credibility and relevance of online resources a few times per grading period d) with a mean value of 2.7, the respondents use technology to analyze information on their class a few times per grading period, e) with a mean value of 3.1, the respondents use technology to help the students share information on their class 1-3 times per month, f) with the mean value of 2.8, the respondents use technology to support students' team work or collaboration a few times per grading period, g) with a mean value of 2.25, the respondents use technology to interact directly with experts or members of local/global communities on their class few times per grading period, h) with the mean value of 3.2, the respondents use technology to keep track of their work on extended tasks or

assignments few times per grading period. With a weighted mean of 3.05, the respondents practice information, media and technology few times per grading period.

The authors asked the respondents, "To what level do you agree with these statements about your CLASS?"

1) I have tried to develop students' skills in using technology as a tool for learning
2) Most students have learned to use technology as a tool for learning while in my class
3) I have been able to effectively assess students' skills in using technology for learning

The following are the computed mean scores on teachers' perceptions on Information, Media and Technology Practices. a) with a mean value of 4 the respondents agreed that they have tried to develop students' skills in using technology as a tool for learning, b) with a mean value of 3.55, the respondents agreed that most students have learned to use technology as a tool for learning while in their class, c) with a mean value of 3.3, the respondents agreed that they have been able to effectively assess student's skills in using technology for learning. With a weighted mean of 3.62, the respondents agreed that information, media and technology skills are being practiced on their class.

(3) Learning and Innovation Skills

The following items (a, b, c, d, and e) are some examples of practices that may help students learn about learning and innovation skill. The authors asked the respondents how often you do the following in their teaching of the class,

1) Use idea creation techniques such as brainstorming or concept mapping?
2) Generate their own ideas about how to confront a problem or question?
3) Test out different ideas and work to improve them?
4) Invent a solution to a complex, open-ended question or problem?
5) Create an original product or performance to express their ideas?

The following are the computed mean scores on teachers' practices on Learning and Innovation Skills. a) with a mean value of 3.85, the respondents use idea creation techniques such as brain storming or concept mapping 1-3 times per week, b) with a mean value of 4.05, the respondents generates students' own ideas about how to confront a problem or questions 1-3 times per week, c) with a mean value of 3.7, the respondents test out students' different ideas and work to improve them 1-3 times per week, d) with a mean value of 3.75, the respondents invent students' solution to a complex, open-ended question or problem 1-3 times per week, e) with a mean value of 3.6, the respondents create students' original product or performance to express their ideas 1-3 times per week. With a weighted mean of 3.79 the respondents practice Learning and Innovation Skills 1-3 times per week on their class.

The authors asked the respondents, "To what level do you agree with these statements about your CLASS?"

1) I have tried to develop students' creativity and innovation skills
2) Most students have learned creativity and innovation skills while in my class
3) I have been able to effectively assess students' creativity and innovation skills

The following are the computed mean scores on teachers' perceptions on their Learning and Innovation Skills Practices. a) with a mean value of 3.95 the respondents agreed that they have tried to develop students' creativity and innovation skills, b) with a mean value of 3.85, the respondents agreed that most students have learned creativity and innovation skills while in their class, c) with a mean value of 3.95, the respondents agreed that they have been able to effectively assess student's creativity and innovation skills. With a weighted mean of 3.92, the

respondents agreed that learning and innovation skills are being practiced on their class.

5. Summary of Findings

Based on the gathered data, here are the summary of findings which answers the research questions:

On practicing 21st century skills, with a weighted mean of 3.79 the respondents practice of Learning and Innovation Skills 1-3 times per week. With a weighted mean of 3.05, the respondents practice Information, Media and Technology few times per grading period. With a weighted mean of 3.86, teachers' practices of Life and Career Skills are 1-3 times per week.

On the perception of 21st century skills, with a weighted mean of 3.92, the respondents agreed that learning and innovation skills are being practiced. With a weighted mean of 3.62, the respondents agreed that information, media and technology skills are being practiced. With a weighted mean of 3.98, the respondents agreed that Life and Career Skills are being practiced.

The findings from this study help teachers identify their educational practices in 21st century skills and their perceptions of students' acquisition of 21st century skills.

6. Conclusions

Based on the research findings, the following two conclusions were drawn:

1) Compared with other skills, teachers' practice of information, media and technology skills are lower than that for other two skills. Because of the lack of sufficient school facilities and resources that makes it hard for all of respondents to use technology or the Internet in their class in the same period.
2) The mean values of the degree of agreement are over 3.60. Which means that the teachers' perceptions towards all new skills are generally high. Despite limited facilities and large number of students in school, respondents have noted that the 21st century skills are required for a new generation of students to succeed in the society. They are ready to cope with the teaching challenges in practicing a set of new skills to empower students.

Recommendations

In this paper, the researchers evaluated teacher's practices and measured perception of their teaching practices in line with the 21st century skills. This study uses a descriptive discourse and interprets data that was collected from 20 teachers in one selected National High School, Philippines. The following recommendations were drawn:

1) Replicating this study with a larger number of respondents.
2) Teachers to participate on Trainings and Workshop on 21st Century Skills specifically on Information, Media and Technology.
3) A study on the correlation of students and teachers' perception on practices of 21st Century Skills.

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