A Survey on the 21st Century Skills of Education Graduating Students

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Abstract — This study assessed the 21st-century skills of graduating Bachelor of Secondary Education, students at Northern Iloilo Polytechnic State College Batad Campus. The study utilized a descriptive-correlational research design and a survey questionnaire as the primary instruments for data collection. The questionnaire covered the students' demographic profile, perceived level of 21st-century skills, and the relationship between their demographic variables and 21st-century skills. The research is crucial in recognizing the importance of teaching and improving 21st-century skills to prepare students for the changing needs of the global economy.

The study found that the respondents perceived their Learning and Innovation Skills and Information, Media, and Technology Skills as "very good," while their Life and Career Skills were "satisfactory." The correlation between respondents' demographic profile and 21st-century skills showed that sex had a highly significant relationship with Learning and Innovation Skills. In contrast, age was significantly related to Learning and Innovation Skills and Information, Media, and Technology Skills.

The findings suggest that students need to improve their Life and Career Skills, while their Learning and Innovation Skills and Information, Media, and Technology Skills are high. The research results provide a basis for future studies to develop and enhance students' 21st-century skills. This study's significance lies in emphasizing the importance of improving students' 21st-century skills to prepare them for the changing needs of the global economy.

Keywords — 21st-Century Skills, Bachelor Of Secondary Education Learning And Innovation Skills, Global Economy

I. Introduction

To attain global competitiveness and sustainable development through quality education, the United Nations General Assembly declared the Decade on Education for Sustainable Development (DESD, 2004). as an educational tool with its objectives of providing opportunities to improve and promote the vision and transition to sustainable development in all forms of education, awareness and community training; and to provide an enhanced profile of the vital role of sustainable development in education.

To develop globalization through sustainability and efficiency in all aspects, Asia followed DESD as the U.N. decreed. Thus, ASEAN integration is directed to build a stable and sustainable society designed to provide economic, social, cultural, and environmental development. However, regardless of the potential benefits, it can provide for the efficiency and sustainability of Asian countries and the world, it can pose a threat to industries from the public or private sectors and

large or small manufacturing or services. The workforce possessing knowledge and skills in industries is directly and entirely affected.

Job network evaluation report (2012) shows thirty-one (31) percent of entrepreneurs worldwide struggle to find qualified workers because of the difference in talent between qualified workers and skills and specific combinations of skills that entrepreneurs want. Today's skills are broad and deep, reducing the industrial sector and affecting more than eighty (80) percent of the companies evaluated. Human capital performance skills threaten the ability of our country to compete and come out as the most critical business issue in our country.

Problems facing human resources in job mismatches, and lack of knowledge and skills, can lead to inefficiencies, lower production, and unstable business. Therefore, the education sector has an essential role in providing the knowledge, skills, and attitudes needed for human resources to meet global commitment is changing needs and requirements. Therefore, education at all levels must be met with intense and ongoing challenges for change to achieve excellence and sustainable development.

While sustainable education should be tailored for individual learners, identified skills in the context of sustainable development. It consists of envisioning, critical thinking, and reflection to help people learn to examine economic, environmental, social, and cultural structures, systemic thinking, building partners, and participation in decision-making to empower people (www.21stcentury.org).

In the current information age, the main task is applied to sustainable education worldwide. Recent educational revisions of educational systems focus on literacy, skills, and standards to support interdisciplinary thinking. It is the driving force and leading the role of the educational system in the global economy.

Our country, the Philippines, made the first step to competing globally. One of its manifestations is adopting the Enhanced Basic Education Act or RA 10533 in the K-12 curriculum. This move increases the visibility of translating the country's education framework into global standards and simultaneously responding to the goals of ASEAN integration. Therefore, adopting 21st-century skills and studies in youth should take steps to achieve these goals.

With the rapid development of technology, the country develops toward information systems, in which ideas or knowledge function as products and commodities. It is essential to realize that the community is facing not only the changing types of work required, but today's youth also need to be skilled and educated for jobs that do not yet exist.

The Partnership for 21st Century Skills, formed in 2002, has advocated for 21st-century skills and made it at the center of K-12 education. P21 Framework (2009) reported that our world economy has evolved from the industrial era to the information age and is now moving into an era of temporary creativity.

Wagner (2008) added, "our schools are not designed to prepare students for this reality." The 21st-century skills are crucial in supporting the youth to survive and excel in a new global environment. The same author mentions that this is a world where comfort with ideas and abstractions is a passport for sound learning, where creativity and innovation are the keys to a good life, where the level of higher education which is a very different kind of education most of us have the only security available. Furthermore, Baniaga (2010) mentioned that education turned to evidence of technology integration. This integration "can help the schools provide a world-class education that will enhance student achievement and develop 21st-century skills and provide educators with a valuable tool for teaching, developing and strengthening 21st-century skills by dramatically changing options for inquiry, analysis, and expression".

21st-century skills will require workers to possess the ability to solve problems, collaborate, innovate, communicate, adapt, and analyze information. The educational sector must acknowledge the need to teach and enhance these skills and embrace the opportunities in our country and economy today.

In order to address the shift of trends and threats brought about by ASEAN Integration, the need to assess existing knowledge and skills is considered vital to students. Because educational institutions provide the needs of community workers, a unique and essential role is required in ensuring excellent industrial and academic skills.

STATEMENTS OF THE PROBLEM

This study determined the skills of 21st-century skills of the Bachelor of Secondary Education graduating students of Northern Iloilo Polytechnic State College Batad Campus.

Specifically, this attempted to answer the following objectives:

What is the demographic profile of the Secondary Education Students of NIPSC Batad Campus in terms of age, sex and educational attainment of father and mother?

1. What is the perceived level of 21st Century Skills of the Secondary Education Graduating Students of NIPSC Batad Campus in terms of learning and innovation skills; information, media and technology skills; and life and career skills?

2. Are there significant relationship between the profile variables and the 21st Century skills of the respondents in terms of learning and innovations skills; information, media and technology skills; and life and career skills?

NULL HYPOTHESIS

1. There is no significant relationship that exists between the profile variables and the 21st century skills of the respondents in terms of learning and innovations skills; information, media and technology skills; and life and career skills.

THEORETICAL FRAMEWORK

The framework for this study was investigated through the globalization theories of Thomas L. Friedman (2007). His review of globalization shifts, offer insight into the need to teach 21st century skills in our schools. He also provides a timeline for the forces that led to this need. Friedman's insights offer the first indicators that education does not adequately address the 21st century skills needed for life in a shifting global economy.

These "globalization skills" need to be addressed by society as a new focus of education in order to prepare a new generation for a future economy that hangs in the balance. In his book The World is Flat (2007), Friedman describes the evolution of globalization as having occurred during three great eras; globalization1.0, 2.0, and 3.0. The evolution of these eras can best be described as the global community moving from one that operated in isolation, to one that operates collaboratively. This is made possible by the convergence of the personal computer and fiber optic cable (Friedman, 2007). Communication has grown exponentially, and will continue to do so as technology catches up with infrastructure.

Currently, globalization provides individuals the opportunity to collaborate and communicate from anywhere, regardless of the distance between them (Friedman, 2007). With the ease of communication and sharing of information, individuals will need to compete internationally for jobs. In this era, employees will need to possess specific skills that will allow them to be marketable in the new global economy. Education will play a vital role in society's ability to survive and thrive in this economy.

Educators that comprehend these forces, and embrace the instructional opportunities they present, can better prepare students for future innovation and the opportunities they present. This new era of globalization necessitates a renewed purpose to educate relevant skills needed for the 21st century. Wagner argues that the emergence of our rapidly changing society will require a shift from instructing for memorization and recall to instructing the skills needed for work, life, and citizenship in the 21st century. In today's classrooms, students need relevant instruction rich in the skills that will be needed for their future.

CONCEPTUAL FRAMEWORK

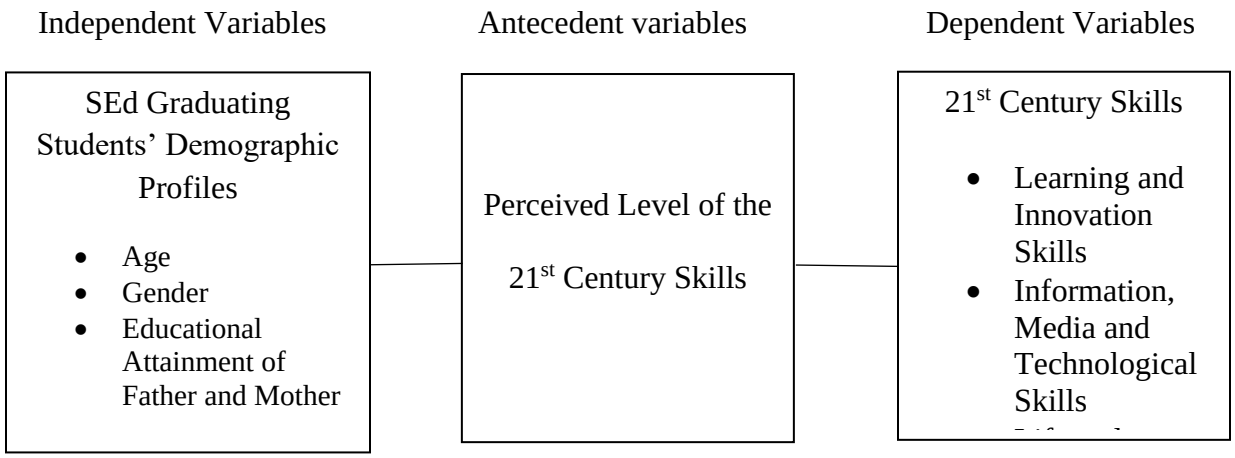

Figure 1. This Figure Illustrates the Independent and Dependent Variables of the Study.

II. Methodology

STATISTICAL TREATMENT

This section discusses the statistical treatment and formula necessary to evaluate correctly the data gathered. The data gathered were tabulated, analyzed and interpreted.

The mean was used to describe the demographic profile of the respondents and the perceived level of the 21st century skills. Pearson r was used to determine whether there is significant relationship that exist between the respondents' demographic profile and their 21st century skills.

Mean. The average of the set of scores and responses on the demographic profiles and 21st century skills survey divided by the total numbers of scores. The formula is as follows:

$$\overline{X} = \frac{\sum X}{N}$$

Where: $\sum X$ = summation of observed frequency

N= total number of respondents

For the relationship between the demographic profile and 21st century skills of the respondents in terms of learning and innovation skills, information, media and technology skills and life and career skills, the Pearson Product–Moment Correlation was employed using the given formula:

Where: r- refers to the Pearson correlation coefficient

$$r_{xy} = \frac{N\sum XY - (\sum X \sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

X- refers to the first variable

Y – refers to the second variable

$\sum_X$ Y - is the summation of X&Y

Degree of Correlation

$0 < | r | < 0.30$ Weak Correlation

$0.31 < | r | < 0.70$ Moderate Correlation

$0.71 < | r | < 1.00$ Strong Correlation

METHOD AND INSTRUMENT

The study made use of the descriptive method and a designed survey tool which consists of a profile checklist and a 15 item-questionnaire developed by the researchers and validated by NIPSC Batad Campus Statisticians with 0.79 as very high positive correlation. The items in each skill were based on the indicators provided in P21 www.p21.org.)

Thirty (30) respondents were chosen using purposive sampling. According to Zulueta F. and Perez J. (2010), for correlational research, 30 is the minimum acceptable sample size. Quantitative data along ascertaining profile variables and 21st century skills were treated with frequency and mean respectively. The Pearson-r was used to determine the correlation between profile variables and the 21st century skills and the correlations between and among the dimensions of 21st century skills.

The five-point Likert scale was used to describe responses in all dimensions and was used in a similar way to establish an efficient description for the area mean.

III. Results and Discussion

Out of thirty respondents, nine are males with the mean of 0.30 and 21 are females with the mean of 0.70.

As to age, 24 respondents belong to the age bracket of 19-20 with the mean of 0.80, five (5) belong to 21-22 with the mean of 0.166 and 1 belongs to 23-above with the mean of 0.33.

As to educational attainment of the respondents' mother, eight (8) are college graduate with the mean of 0.266, 22 are high school graduate with the mean of 0.73, and zero (0) elementary graduate. As to educational attainment of the respondents' father, 18 are college graduate with the mean of 0.60, 12 are high school graduate with the mean of 0.40, and zero (0) elementary graduate.

Table 1 shows the results.

Table 1. Demographic Profile of the Respondents in terms of Sex, Age and Educational Attainment of the Respondents' Parents (both father and mother).

Respondents	Frequency	Mean
Sex		
Male	9	0.30
Female	21	0.70
Age		
19-20	24	0.80
21-22	5	0.166
23-above	1	0.33
Parents' Educ. Attainment		
Mother		
College Graduate	8	0.266
High School Graduate	22	0.73
Elementary Graduate	0	0
Father		
College Graduate	18	0.60
High School Graduate	12	0.40
Elementary Graduate	0	0

Perceived Level of the 21st Century Skills of the Respondents in terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Life and Career Skills

The respondents Learning and Innovation Skills has a mean of 3.57 which is described as "very good" in the arbitrary skills; the information, media and technology skills have a mean of 3.01 which is also described as "very good"; and life and career skills have a mean of 2.96 which is "satisfactory" only.

Table 2 shows the results.

Table 2. Perceived Level of the 21st Century Skills of the Respondents in terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Life and Career Skills

Dimensions on the 21st Century Skills	Mean	Description
Learning and Innovation Skills	3.57	Very Good
Information, Media and Technology Skills	3.01	Very Good
Life and Career Skills	2.96	Satisfactory

Arbitrary Scale	Description
4.0	Excellent
3.0 – 3.99	Very Good
2.0 – 2.99	Satisfactory
1.0 – 1.99	Poor

Table 3A shows that sex and learning and innovation skills has an r-value of .000 which is highly significant at 0.05 alpha level. Sex and Information, Media and Technology Skills have an r-value of -0.277 which is not significant. Sex and Life and Career Skills have and r-value of -.425* which is also not significant.

Table 3A shows the results**.**

Table 3A. Relationship Between the Respondents' Demographic Profile(Sex) and their 21st Century Skills in Terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Career Skills.

Correlated Variables	Pearson r	Description
Sex Learning and Innovation Skills	.000	Highly Significant
Sex Information, Media and Technology Skills	-0.277	Not Significant
Sex Life and Career Skills	-.425*	Not Significant

Relationship Between the Respondents' Demographic Profile (**Age**) and their 21st Century Skills in Terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Career Skills.

Table 3A shows that sex and learning and innovation skills has an r-value of 0.036 which is significant at 0.05 alpha level. Sex and Information, Media and Technology Skills have an r-value of 0.021 which is also significant. Sex and Life and Career Skills have and r-value of -0.309 which is not significant.

Table 3B shows the results.

Table 3B. Relationship Between the Respondents' Demographic Profile (Age) and their 21st Century Skills in Terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Career Skills.

Correlated Variables	Pearson r	Description
Age Learning and Innovation Skills	0.036	Significant
Age Information, Media and Technology Skills	0.021	Significant
Age Life and Career Skills	-0.309	Not Significant

Relationship Between the Respondents' Demographic Profile (**Mothers' Educational Attainment**) and their 21st Century Skills in Terms of Learning and Innovations Skills; Information, Media and Technology Skills; and Career Skills.

Table 3C shows that Mothers' Educational Attainment and the 21st century skills of the repondents have an r-value of -.158 which is not significant at 0.05 alpha level. Mothers' Educational Attainment and Information, Media and Technology Skills have an r-value of -.230 which is not significant. Mothers' Educational Attainment and Life and Career Skills have and r-value of -.192 which is also not significant.

Table 3C shows the results.

Table 3C. Relationship Between the Respondents' Demographic Profile (Mothers' Educational Attainment) and their 21st Century Skills.

Correlated Variables	Pearson r	Description
Mothers' Educational Attainment Learning and Innovation Skills	-.158	Not Significant
Mothers' Educational Attainment Information, Media and Technology Skills	-.230	Not Significant
Mothers' Educational Attainment Life and Career Skills	-.192	Not Significant

Relationship Between the Respondents' Demographic Profile(Fathers" Educational Attainment) and their 21st Century Skills of the Respondents.

Table 3D shows that Fathers" Educational Attainment and the 21st century skills of the respondents have an r-value of -.253 which is not significant at 0.05 alp level. Mothers' Educational Attainment and Information, Media and Technology Skills have an r-value of -.368 which is not significant. Mothers' Educational Attainment and Life and Career Skills have and r-value of -.368 which is also not significant.

Table 3D shows the results.

Table 3D. Relationship Between the Respondents' Demographic Profile(Fathers'' Educational Attainment) and their 21st Century Skills of the Respondents.

Correlated Variables	Pearson r	Description
Fathers" Educational Attainment Learning and Innovation Skills	-.253	Not Significant
Fathers" Educational Attainment Information, Media and Technology Skills	-.368	Not Significant
Fathers" Educational Attainment Life and Career Skills	-.368*	Not Significant

IV. Conclusion and Recommendation

The findings of the study revealed that there is no significant relationship between sex and the 21st century skills of the respondents. As to age and the 21stcentury skills, there is a significant relationship. Between mother's educational attainment and the 21st century skills of the respondents, there is no significant relationship, the same with the father's educational attainment and the 21st century skills of the respondents.

To conclude, only one demographic profile of the respondents which is age, had high correlation with their 21st century skills. For the rest of the variables, the relationship is not significant.

For recommendations, schools should provide world-class education that will enhance student achievement and develop 21st century skills and provide educators with a valuable tool for teaching, developing and strengthening 21st century skills by dramatically changing options for inquiry, analysis and expression (Baniaga, 2010).

Students should encourage parents to benefit from alternative study or informal learning to develop their knowledge and skills to help improve the personal and academic growth of their children, as this study identified the level of academic attainment of parents with greater influence and contribution to the development of their children.

21st century skills such as learning and innovation skills, information media and technology skills, as well as life and career skills, are the crucial and primary skills that have to be developed among students. With these, they are encouraged to develop critical thinking by being creative and innovative through experimentation, exploration, prediction, interpretation, visualization, information integration and evaluation as rudiments of critical thinking skills. In addition, students should also be involved in collaboration with groups to adapt, learn, explore and apply alternative perspectives to enhance their problem solving skills.

Teachers, on the other hand, can enhance student creativity by encouraging intrinsic motivation and problem solving. They need to promote regular brainstorming sessions, allowing students to have multiple ideas and need to create an encouraging learning environment. When students see their ideas inspired and accepted, they can become more creative, bringing potential change to classrooms.

Parents need to be aware of their attitudes and their influence in developing the 21st century skills of their children. Therefore, they need to take initiatives and take advantage of opportunities to develop their knowledge and skills.

Because school should have the primary role to play in learning new skills at the information age of training, it should provide a collaborative learning environment, because the

creativity and the ability to study together to achieve the goal. Information, media and technology skills are corresponding skills to harness the learning and innovation skills among learners.

For curriculum designers, the English curriculum should include additional courses that will enrich students with the ability to understand and use practical and conceptual tools for current technology applicable to education and professional life that students expects to adopt..

Trainings or seminars for students should be conducted annually to develop their ability to understand, adapt, evaluate and continue to use the advancements in information technology, media and ICT-based literacy and come up with an intelligent decision about adopting new technologies.

Researchers should conduct similar studies to assess sociological and cultural diversity and their impact on life among millennial workforce of professionals in the academic sector.

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