THE 21st CENTURY TECHNICAL SKILLS OF TECHNOLOGY INSTRUCTORS OF SAMAR STATE UNIVERSITY

A Thesis

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of the Requirements for the Degree

Master of Arts in Education (MAEd)

Major in **Technology and Livelihood Education (T.L.E.)**

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APPROVAL SHEET

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Dedication

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ABSTRACT

This study aimed to determine the 21st Century skills of the Technology instructors of Samar State University (SSU), Catbalogan City, during the school year 2014-2015. This research utilized the descriptive research design which is often used to assess thoughts, opinions, and feelings. The visual/spatial intelligence ranked first as the preferred intelligence of the technology instructor-respondents. The technology instructor-respondents, however, identified as the least preferred intelligence the interpersonal intelligence. Based from Gardner's Multiple Intelligence Test, the technology teachers possess multiple intelligences, with particular emphasis on spatial intelligence which is understandable considering that they are teaching technology and technical-vocational courses. More respondents were spatial/visual and no one is an existentialist based on their scores in the test. The grand mean obtained for the 21st century skills of the technology teacher respondents is interpreted as "very good". This meant that they possessed all four macro skills of information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills. Only as regards stress management and the life and career skills of the technology instructors were significant differences were noticed. For the recommendation, the statement of skills should be included in the faculty development plan in order to provide understanding to the technology instructors as well as to the school's administration about the importance of possessing effective 21st century skills.

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Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

A typical worker in the 20th Century would "clock in" and "clock out" using a mechanical device which recorded the agreed fixed start time and finish time of work. The platform of today's work environment is a departure from the traditional world of work in terms of structure, content, and process of work. For Heerwagen (2016:1), work is now more cognitively complex, more team-based and collaborative, more dependent on social skills, more dependent on technological competence, more time pressured, and more mobile and less dependent on geography.

Subsequently, a typical 21st Century worker will be working for an organization that is likely to be very different due to competitive pressures and technological breakthroughs. Organizations today are leaner and more agile, more focused on identifying value from the customer perspective, more tuned to dynamic competitive requirements and strategy, less hierarchical in structure and decision authority, less likely to provide lifelong careers and job security, and continually reorganizing to maintain or gain competitive advantage (Heerwagen, 2016:2).

True to this challenge, the National Economic and Development Authority (NEDA) said that the majority of the unemployed were high school

graduates (31.7 percent), college graduates (21.3 percent) and college undergraduates (14.6 percent) (ICEF Monitor, 2013). However, another data yielded the results that the level of education of the unemployed with very high percentages were having attended college (22 percent) or being college graduates (19 percent) . The high level of college students who are unemployed strongly suggests they are not acquiring the right skills needed by employers (http://www.investphilippines.info/arangkada/growth/inadequate-skills-insufficient-jobs-high/). In addition, Habito (2013) stressed that the Department of Labor and Employment (DOLE) attracted a total of 36,765 job applicants in job fairs held in various parts of the country but only 1,274 found immediate placement, with another 3,340 applicants told to undergo further interviews with employers. This data suggests that less than one out of 10 applicants manages to find a job in DOLE's job fairs.

On top of the changing plane of today's workforce, the common scenario of Philippine labor force is a jobs-skills mismatch wherein the training of jobseekers simply does not match the requirements of the companies looking for people to fill their vacancies. In support to this claim, the Philippine Business for Education (PBEd), through its research partner Brain Trust Inc. (BTI), interviewed various companies' human resource officers as part of its USAID-funded Higher Education for Productivity Project (HEPP). The results reflected that the perceived technical skills mismatch appears illusory in other contexts. Human resource officers say that what they are looking for, but have difficulty

finding in their applicants, are not so much technical skills such as those obtained in science, engineering and technology courses, but more of "soft" ones such as communication and presentation skills, analytical ability, resourcefulness, creativity, motivation, ability to work in a team, honesty and the like (Habito, 2013). Here in these data it is suggested that the mismatch is not in technical training, but in something more fundamental.

There is a growing recognition among countries that 21st Century knowledge and skills not only build upon core content knowledge, but also include information and communication skills, thinking and problem-solving skills, interpersonal and self-directional skills, and the skills to utilize 21st Century tools, such as information and communication technologies. Research shows that effective instruction in 21st Century literacies takes an integrated approach, helping students understand how to access, evaluate, synthesize, and contribute to information (Policy Brief by the National Council of Teachers of English, n.d.). Along with their traditional professional skills, in the modern workplace these technicians (technology teachers) need additional skills that prepare them to be reflective and collaborative problem-solvers with a broader view than just their specific expertise.

Educational systems therefore face issues and challenges which include adaptability of contents to a very fast changing work reality, the balance between the needs of students, education and training provisions, the skills required by VET teachers and trainers, and the most effective models for engaging employers

and unions (www.eunec.eu). The objective of education, training and development is to provide for the trainees the knowledge, attitudes and skills needed for productive and gainful contribution to the process of development. To make the acquisition of high industrial skills possible, an appropriate learning environment is needed - that is, one which provides adequate facilities for technology education and skills acquisition. The real implementation of education and lifelong learning has to be integrated in educational concepts (Berthel at www.eunec.eu, 2011).

Specifically, Technology teachers in today's classrooms have multiple responsibilities that continually require more knowledge and experience than was needed in earlier years. According to Milanovich (1986), being an effective technology teacher today means having knowledge and/or experience in four areas, to wit: a specific skill area, instructional planning, implementation, and evaluation area, classroom and laboratory management area; and occupational experience. Tomorrow's vocational teachers will need to have competency in all of these areas. More importantly, they will also need to develop skills in areas seemingly distant from their primary duty of teaching.

The Samar State University (SSU) offers technical-vocational courses such as food technology, automotive, cosmetology, electronics, among others, which require highly-skilled technology teachers. Yet, amidst the challenges of the 21st Century, the technology instructors need to possess more than just their technical skills. It is important to get the right number of trained technology teachers, and

to get the right mix of skills for each vocational course offered by the University. It is this very same objective which motivated the researcher to conduct this study to determine whether the technology instructors of CIT, SSU, possess the required 21st century skills to be imparted to their students to minimize the impact of jobs-skills mismatch.

Statement of the Problem

This study aimed to determine the 21st Century skills of the Technology instructors of Samar State University (SSU), Catbalogan City, during the school year 2014-2015.

Specifically, this study sought answers to the following questions:

1. What is the profile of the Technology instructors in terms of their:
    - 1.1 intelligence quotient (IQ);
    - 1.2 emotional intelligence quotient (EQ);
    - 1.3 personality, and
    - 1.4 multiple intelligences?
2. What are the 21st Century skills of the teacher-respondents along the following:
    - 2.1 information, media and technology skills;
    - 2.2 learning and innovation skills;
    - 2.3 communication skills, and
    - 2.4 life and career skills?

3. Are there significant differences in the 21st Century skills of the respondents according to their:

3.1 intelligence quotient (IQ);

3.2 emotional intelligence quotient (EQ);

3.3 personality; and

3.4 multiple intelligences?

5. What inputs for interventions may be formulated based on the findings of the study?

Hypothesis

The following hypothesis was tested in this study:

1. There are no significant differences in the 21st Century skills of the respondents according to their:

1.1 intelligence quotient (IQ);

1.2 emotional intelligence quotient (EQ);

1.3 personality; and

1.4 multiple intelligences.

Theoretical Framework

This study was conducted on the basis of some notable theories on intelligence, emotional intelligence, multiple intelligences, and personality.

This study is based on the Human Capital Theory based on Gardner's view. According to Gardner (1999:192-193), human capital is not one-

dimensional but possess many dimensions of types of skills corresponding to his theory on multiple intelligences. Hence, a worker may be considered "unskilled" in some skills but a "genius" in other types of skills. The Human Capital Theory further argues that workers with higher skill levels receive higher compensation because they are more productive. Employee involvement may require workers with more general skills to perform more complex tasks, which might result in more rigorous selection and hiring criteria and increase the demand for and wages of more educated workers. New practices may also require more firm-specific skills, which would increase employer-provided training and wages as well.

Gardner (cited by Gilman, 2008) has identified seven distinct intelligences. Individuals are all able to know the world through language, logical-mathematical analysis, spatial representation, musical thinking, use of the body to solve problems or to make things, an understanding of other individuals, and an understanding of themselves. As applied to the workplace, individual workers may differ in the strength of these intelligences and in the ways in which such intelligences are invoked and combined to carry out different tasks, solve diverse problems, and progress in various domains. Gardner's focus on human potential lies in the fact that people have a unique blend of capabilities and skills (intelligences). People who have an affinity toward one of the intelligences do so in concert with the other intelligences as they develop skills and solve problems.

This model can be used to understand overall personality, preferences and strengths (Gardner, 2010).

In addition to the aforementioned theory, this study was likewise anchored on the Emotional Intelligence-Based Theory of Competence and Performance. This theory emphasizes an individual worker's potential for mastering personal competencies of self-awareness and self-management, and social competencies of social awareness and relationship management that translate into on-the-job success. These personal as well as social competencies are summed up as emotional competencies. Goleman (as cited in Cherniss, 2010) espoused that emotional competencies are not innate talents, but rather learned capabilities that must be worked on and can be developed to achieve outstanding performance.

On the job, people exhibit these competencies in groupings, often across clusters that allow competencies to support one another. Emotional competencies seem to operate most powerfully in synergistic groupings, with the evidence suggesting that mastery of a "critical mass" of competencies is necessary for superior performance (Boyatzis, Goleman, and Rhee, 2000). Each competence can be viewed along a continuum of mastery; at a certain point along each continuum there is a major leap in performance impact.

Translated into the workplace, there is a clear need to integrate valuation of workers' emotional competencies into the organizations' functions. Organizations need to hire for emotional intelligence along with whatever other

technical skills or business expertise they are seeking. When those with high potential are being selected and groomed, EI should be central. Given the new understanding of the crucial role emotional competence plays in organizational success, the implication for education is clear: human resource should be helping employees/workers master these competencies as essential life skills.

Finally, this study was based on the 21st Century Framework of economists Frank Levy and Richard Murnane. According to Levy and Murnane (cited in Dede, 2009:1-2), a crucial component of what constitutes 21st Century knowledge and skills: "declining portions of the labor force are engaged in jobs that consist primarily of routine cognitive work and routine manual labor - which, in today's workforce are considered types of tasks that are easiest to program computers to do; growing proportions of the nation's labor force are engaged in jobs that emphasize expert thinking or complex communication - tasks that computers cannot do.

Levy and Murnane (ibid) explained that "expert thinking involves effective pattern matching based on detailed knowledge; and metacognition, the set of skills used by the stumped expert to decide when to give up on one strategy and what to try next". Applying to the classroom situation, a skilled teacher is an expert in complex communication, able to improvise answers and facilitate dialogue in the unpredictable, chaotic flow of classroom discussions. Sophisticated information and communication technologies are changing the

nature of "perennial" skills valuable during the 20th Century classrooms, as well as creating new "contextual" skills unique to new millennium work (Dede, 2009:3-4).

Hence, the 21st Century is quite different than the 20th Century in the capabilities people need for work, in general, and for self-actualization, in particular. The types of work done by people as opposed to the kinds of labor done by machines are continually shifting as computers and telecommunications expand their capabilities to accomplish human tasks. Creating a workforce of comparable capability in the present era is thus essential if the organization intends to achieve sustainability through improved operations.

The College of Industrial Technology (CIT) should therefore define the competencies of its Technology teachers in a way that is appropriate to the expectations of the position and the work environment of the 21st Century skills.

Conceptual Framework

Figure 1 is the conceptual schema of this study. It presents in a diagram the variates to be studied, the process of this research, as well as the respondents and research environment.

As it is shown in the base frame, this study was conducted involving all the technology instructors of the College of Industrial Technology (CIT), Samar State University (SSU), during the School Year 2014-2015.

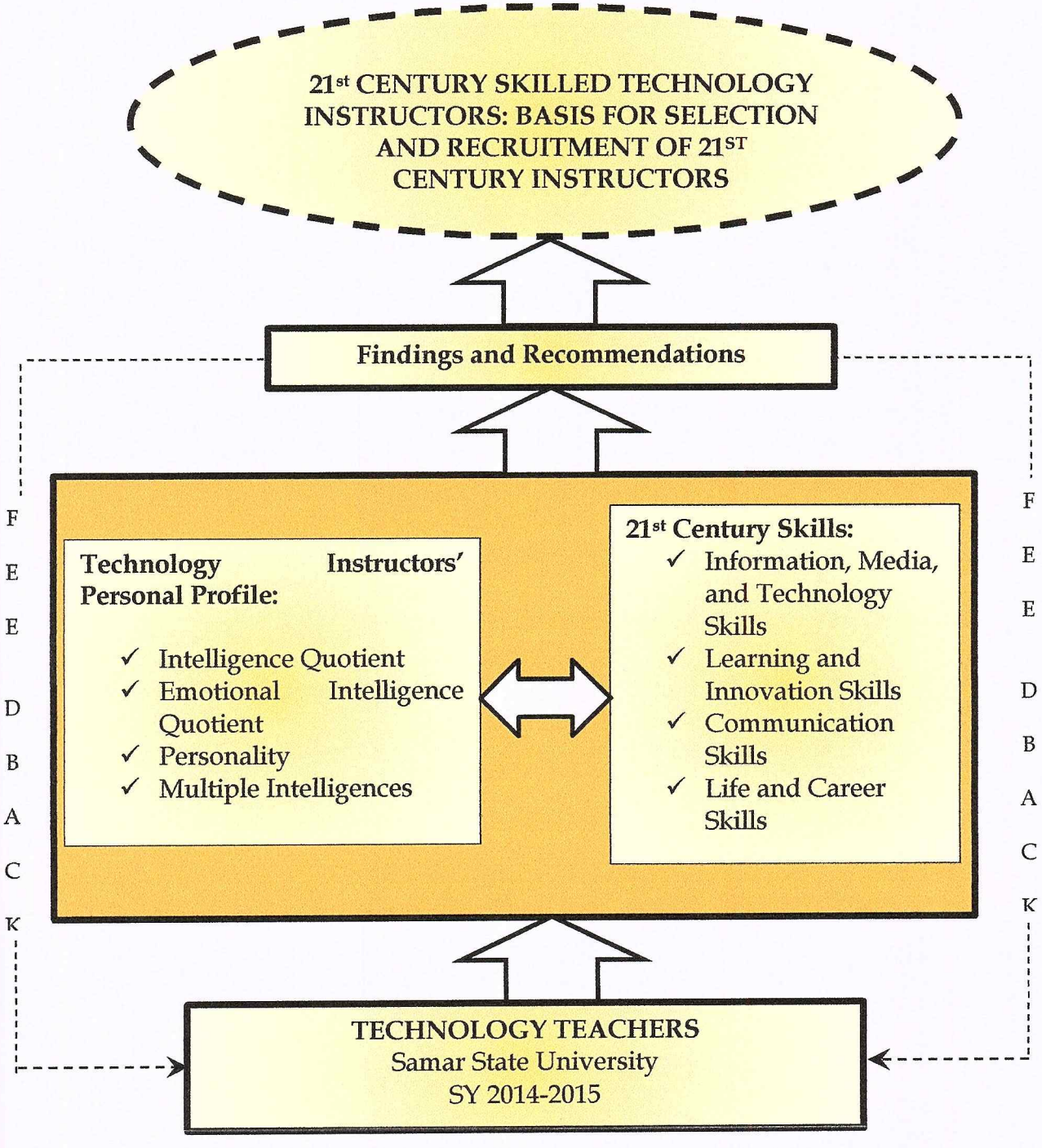

Figure 1. Conceptual Framework of the Study

There are an incredible number of pressures on today's organizations such as environmental pressures brought about by increasing globalization, rapid technological change, and tougher competition; organizational changes such as new organizational alliances, new structures and hierarchies, new ways of assigning work, and a very high rate of change; changes in the workforce, including employees' priorities, capabilities, and demographic characteristics.

Within these pressured organizations, there is a need and opportunity for the human resource function to play a critical role in helping organizations navigate through these transitions. In order to play this role, however, the human resource department will have to have realistic valuation of the employees. Organizations want people who will be successful organizational partners and who will understand the pressures of running an effective organization in today's workplace. Hence, this study which focused on the Technology instructors' 21st Century skills as influenced by their intelligence and emotional quotient, personality traits, and multiple intelligences.

Comparative analysis was done in order to determine the differences in the 21st century skills possessed by the technology teachers when grouped according to their profile of IQ, EQ, personality, and multiple intelligences. Similarly, the same method was used to determine the differences in the 21st Century skills possessed by the respondents when grouped according to their technology area/field of specialization.

Significance of the Study

This study would be of significance to the personnel, students, key officials of the University, Commission on Higher Education, and future researchers.

Technology instructors. The results of this study would provide the technology instructors with deeper sense of understanding of the different 21st century skills they possess as well as the need to update and/or upgrade their skills depending on the technical-vocational program they are handling. Moreover, this study would provide them with the opportunity to reflect on their 21st Century skills – that is, whether or not the skills they possess match their IQ, EQ, personality, and other intelligences. In the first instance, the results of this study would give them a bird's eye view of what they should do to improve, update, and upgrade the 21st Century skills they already possess. In the second instance, the results of this study would give them insights into what they should do in order to acquire the said skills. Ultimately, they would be able to update and/or upgrade their competencies in teaching the different technical-vocational courses to the students.

Students. The students would be the recipients of technology teachers who are well-versed and competent in terms of the core content and job-specific skills. The students would reap the benefits of competent, highly-skilled, and globally competitive technology instructors.

Key officials of the University. The key officials of the University would have a database as regard to the kind of human resource the University is employing. With the results of this study, the University officials would be able to formulate, enact and implement policies regarding selection and recruitment of technology teachers who possess the required 21st Century skills.

Commission on Higher Education. The officials of CHED would be able to gain insights into the need to adjust their training needs analysis for technology teachers of higher education institutions (HEIs) catering to technical-vocational educations to consider the 21st Century skills depending on the latter's IQ, EQ, personality, and other intelligences.

Future researchers. The results of this study would provide future researchers with ample literature as regards the need to validate the results of this study.

Scope and Delimitation

The researcher utilized the descriptive survey research design, with comparative analysis, in assessing the 21st Century skills of the technology teachers of the College of Industrial Technology (CIT) of Samar State University (SSU), during the School Year 2014-2015. It likewise determined the intelligence quotient, emotional intelligence quotient, personality, and multiple intelligences of the respondents.

Forty-seven technology teachers of CIT of SSU Main Campus and its satellite campuses, to wit: SSU-Basey Campus and SSU-Paranas Campus, were involved as the respondents of this study. The technology instructors were from the CIT areas, namely, Architecture, Automotive, Cosmetology, Drafting, Foods, Electricity, Electronics, Garments, and Mechanical Technology. The Otis-Lennon Intelligence Test, Bar-on Emotional Intelligence Test, 16PF Test, Gardner's Emotional Intelligence Test were the standard tests used in this study. However, a questionnaire was also used to gather data on the respondents' 21st century skills adopted from the Partnership for 21st Century Skills (http://www.21stcenturyskills.org/).

Descriptive statistical tools such as frequency count, percentage, mean, weighted mean, and standard deviation were used to compute, analyze and interpret the descriptive problems of this study. On the other hand, inferential statistical tools such as t-test for independent samples, One-Way Analysis of Variance (ANOVA), and Scheffe's test were used in order to test the hypotheses of this study.

Finally, the conduct of this study extended from January 2016 to March 2016.

Definition of Terms

The following terms were defined conceptually as well as operationally to provide the readers with better understanding of this study.

Adaptability. Day and Livingstone (2005) defined this term as the ability to be flexible and alter one's feelings with changing situations; this is a skill related to the management of change. In this study, the term was taken in the same light but was measured specifically through the technology instructor-respondents' scores in the Bar-On Emotional Intelligence Test.

Communication skills. This 21st century skills refer to the ability to articulate thoughts and ideas clearly and effectively through speaking and writing, work effectively with diverse teams, exercise flexibility and willingness to make necessary compromises to accomplish a common goal, and assume shared responsibility for collaborative work (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This was used in this study in the same context as conceptually defined.

Creativity and curiosity. This term refers to the following competencies: demonstrating originality and inventiveness in work, developing, implementing and communicating new ideas to others, being open and responsive to new and diverse perspectives, and acting on creative ideas to make a tangible and useful contribution to the domain in which the innovation occurs (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This was used in this study in the same context as conceptually defined.

Critical thinking and problem-solving skills. This 21st century skills refer to the person's competencies to exercise sound reasoning in understanding, make complex choices and decisions, understand the interconnections among

systems, identify and ask significant questions that clarify various points of view and lead to better solutions, frame, analyze and synthesize information in order to solve problems and answer questions (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This was used in this study in the same context as conceptually defined.

Emotional intelligence. This reflects the ability to deal with daily environment challenges and helps predict one's success in life, including professional and personal pursuits (Bar-On, 1997). Operationally, however, this term referred to the scores in the Bar-On Emotional Intelligence Test of the technology instructors of Samar State University.

Flexibility and adaptability. This generally refers to the ability of a person to adapt to varied roles and responsibility, and to work effectively in a climate of ambiguity and changing opportunities (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). In this study, the term was used using the same conceptual definition mentioned earlier except that it referred to the technology teacher-respondents' responses in the questionnaire made for the purpose.

General mood. This is the ability to feel and express positive emotions and remain optimistic; represents the ability to enjoy life and maintain a positive disposition (Bar-On, 1997). This term was operationally used in this study as it was conceptually defined but was specifically measured through the scores in the Bar-On Emotional Intelligence Test of the technology instructors of SSU-CIT.

Global awareness. The 21st century skill of global awareness speaks about the ability to learn from and work collaboratively with individuals from diverse cultures, religions, ideologies, and lifestyles in an environment of openness and mutual respect (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This term was taken in the same meaning as mentioned in the earlier statement.

Information, media, and technology skills. This 21st century skills refer to the ability of people to access the abundance of information, rapid changes in technology tools, and the ability to collaborate, and make individual contributions to the technology and media-suffused environment; workers/employees must be able to exhibit a range of functional and critical thinking skills relate to information, media and technology of the 21st century (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This term was taken in the same meaning as mentioned in the earlier statement.

Initiative and self-direction. Conceptually, this term refers to the monitoring of one's own understanding and learning needs, going beyond basic mastery skills to explore and expand one's own learning to gain expertise, demonstrating initiative to advance skill levels towards a professional level, defining, prioritizing and completing tasks without direct oversight, utilizing time efficiently and managing workload, and demonstrating commitment to learning as a lifelong process; includes being motivated and ready to use initiative; being highly self-reliant in everyday work (Partnership for 21st

Century Skills http://www.21stcenturyskills.org/). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Intelligence quotient. It is a total score derived from one of several standardized tests designed to assess human intelligence (Neisser, 1996). In this study, this term referred to the intellectual capacities of the technology teachers of CIT, SSU, as measured through the Otis-Lennon Test.

Interpersonal ability. It is conceptually pertaining to the ability to recognize the feelings of other people facilitated by linguistic skill; the ability to be aware of and understand others' emotions and feelings (Shearer, 2006). Operationally, this study referred to the same ability of the technology instructors of SSU-CIT measured through their scores in the Bar-On Emotional Intelligence Test.

Intrapersonal ability. This is the ability to think about and understand one's self, to be aware of one's strengths and weaknesses and to plan effectively to achieve personal goals, reflecting on and monitoring one's thoughts and feelings, and regulating them effectively (Shearer, 2006). Operationally, this study referred to the same ability of the technology instructors of SSU-CIT measured through their scores in the Bar-On Emotional Intelligence Test.

Leadership and responsibility. Leadership and responsibility skills include the ability of individuals to work with the interest of the larger community in mind, to inspire others by example, and to capitalize on the

strengths of others to achieve a common goal (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Learning and innovation skills. These skills are increasingly being recognized as the skills that separate workers/employees who are prepared for increasingly complex life and work environments in the 21st century; skills focused on creativity, critical thinking, and communication and collaboration (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Life and career skills. This refers to the ability to navigate the complex life and work environments in the globally competitive information age (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Media literacy. This skill set includes the ability to understand media bias and the ways in which media influences beliefs and behaviors, ability to understand ethical issues surrounding the production of and use of various media forms, and critique the inclusion or exclusion of opinions or factual information in media reports; 21st century media skills also refer to the ability of

individuals to effectively create and deliver media products (Andretta, 2005). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Multicultural literacy. This set of skills refer to the person's ability to produce and share content in new ways and in real-time; make sound, informed financial decisions; access and use high quality information to make health-related decisions; understand and discuss both man-made and natural environmental issues and propose or debate alternative solutions to these problems; and stay informed and understand governmental processes, participate in civic life, and recognize the local and global implications of civic decisions (Andretta, 2005). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

Multiple intelligences. These refer to Gardner's nine intelligences, namely, visual-spatial, verbal-linguistic, mathematical-logical, bodily-kinesthetic, musical-rhythmic, intrapersonal, interpersonal, naturalist, and existentialist (Gardner, 1995). This term was operationally defined in this study as the technology teacher-respondents' possession of the nine intelligences as measured through Garner's Multiple Intelligences Test.

Personality. Cattell (1990) defined personality as that which permits a prediction of what a person will do in a given situation. In this study, the term

was defined based on the results of the 16PF test administered to the technology teacher-respondents.

Productivity and accountability. Conceptually includes setting and meeting goals, prioritizing needs, managing time, working ethically, and collaborating and cooperating with colleagues and clients; employees should be able to manage projects, set and meet goals, produce results, multitask, work positively and ethically, and be accountable for results (Partnership for 21st Century Skills, 2009). This term was operationally used in this study as defined in the foregoing statement.

Risk taking. This 21st century skill includes the confidence to volunteer in helping with an important project or task, even if the type of work is unfamiliar; to step up and gain the opportunity to learn, grow, and build new skills; to venture into the unknown, where the possibilities and probabilities cannot be determined to an exact degree; to practice the art of making quick choices and adapting in a low-impact environment; and to participate in activities that build similar skills, even if they seem unrelated (Partnership for 21st Century Skills http://www.21stcenturyskills.org/). In this study, the term was operationally defined as it was conceptually referred in the previous statement.

Social and cross-cultural skills. This set of skills includes working appropriately and productively with others, leveraging the collective intelligence of groups when appropriate, bridging cultural differences and using differing perspectives to increase innovation and the quality of work (Partnership for 21st

Century Skills http://www.21stcenturyskills.org/). In this study, the term was operationally defined as it was conceptually referred in the previous statement.

Stress management. It is defined as the ability to be flexible and alter one's feelings and changing situations (Day and Livingstone, 2005). In this study, the term was taken in the same context but was specifically measured through the technology instructors' scores in the Bar-On Emotional Intelligence Test.

Technology teachers. The term pertains to the teachers who are teaching technology education and vocational-technical education to students (http://websupport1.citytech.cuny.edu/Faculty/CTTE/faq.html). In this study, the term referred to the respondents of this study, the teachers teaching the different vocational-technical education, technology education, and architecture under the College of Industrial Technology (CIT) of the Samar State University (SSU).

Visual and information literacy. It is the ability to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information; includes accessing information efficiently, evaluating information critically, and using information accurately and creatively (Andretta, 2005). This term was used in this study in the same context as it was defined but was measured through the respondents' responses in the questionnaire made for the purpose.

21st Century skills. These pertained to the skills needed by employees for marketability, employability and readiness for participation in a globally-

competitive economy, which includes thinking critically and making judgments, solving complex, multidisciplinary, open-ended problems, creativity and entrepreneurial thinking, communicating and collaborating, making innovative use of knowledge, information and opportunities, and taking charge of financial, health and civic responsibilities (www.21stcenturyskills.org, 2008). In this study, this term specifically referred to the information, media and technology skills, learning and innovation skills, communication skills, and life and career skills of the technology teacher-respondents as reflected in their responses in the questionnaire.

21st century students. It refers to a learner who possess the skills, knowledge, and expertise needed to succeed in work and life in the 21st Century such as content knowledge in the core disciplines, learning and innovation skills, information, media, and communication skills, and life and career skills (Framework for 21st Century Skills, P21 Partnership for 21st Century Learning at http://www.p21.org/our-work/p21-framework). It was used in this study in the same context as it was defined in the foregoing statement.

21st century teachers. Palmer (2015:1-2) defined a teacher in the 21st Century as teaching in a learner-centered classroom, personalized instructions, treat students as producers, learn new technologies, global, digital, collaborative, promotes project-based learning, and innovative. In this study, the term was used to refer to the technology instructors of CIT, SSU, Catbalogan City.

Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents and discusses the ideas taken from books, journals and other published materials which are relevant to the present study. This likewise includes discussions of the findings, conclusions, and recommendations of various unpublished materials which provide insights into the conduct of the present study.

Related Literature

The Philippines urgently needs to make significant and far-reaching reforms in its higher education system to prepare students and to equip them with the proper skills to face the fast changing world because these are all important tools for the Philippines' success in the global economy. Due to increased globalization and innovations in technology, there has been a paradigm shift in the qualifications needed for job seekers. New skills are needed to succeed in the global workforce.

This important challenge calls for higher education institutions to take urgent action to keep up with the new demands. According to Saxena (2013), the evolved 21st century classroom is a productive environment in which students can develop the skills they will require in the workplace and teachers are facilitators of their learning. The focus of a 21st century classroom is on students

experiencing the environment they will enter as modern day workers and developing their higher order thinking skills, effective communication skills, collaboration skills, making them adept with using technology and all other skills that they will need in the 21st century workplace. The modern day classroom should be more centered on students and teachers should take the role of facilitators and guides instead of being mere providers of knowledge.

However, the quality of today's education in the Philippines falls short in providing students with the necessary skills. The education systems are mostly focused on preparing students for standardized testing and increasing the passing rate, but with a lack of research, textbooks, and application of the learning (Mizell, 2015). Students are not developing the necessary skills to compete or prepare for the next generation's economy.

According to Partnership for 21st Century Skills (2008), certain skills such as critical thinking, communication, innovation, problem solving, research, and technological proficiency are important to compete in the new global work force. Yet, the Philippines has not yet utilized its resources to teach and to assess these skills. Consequently, the Philippines might fall behind the other Asian countries because it has not fully understood the link between students' development and the future of its economy.

As the job market becomes increasingly competitive, education is the key to developing the necessary skills to compete for improved employment opportunities and higher wages (Crosby and Moncarz, 2006). The global

community is urged to keep up with the higher expectation set forth by the advancing age of globalization and technology (Tusara at http://www.bicolmail.com, 2012). To do this, as what human capital theory suggests, the key is improving the quality of education. This realization is moving countries to provide high-quality education and training systems to prepare today's students for the workforce of tomorrow (http://hrd.apec.org).

In the 21st Century, educators must create a curriculum that will help students connect with the world and understand the issues that the world faces. Schools in the 21st Century will become nerve centers, a place for teachers and students to connect with those around them and their community (http://www.teachercertification.org). Teachers in this new environment will become less instructors and more orchestrators of information, giving children the ability to turn knowledge into wisdom. In order to educate in the 21st century, teachers and administrators need to cultivate and maintain the students' interest in the material by showing how this knowledge applies in the real world. They must also try to increase their students' curiosity, which will help them become lifelong learners.

As the 21st century skills are integrated into content, some key design principles include (a) connecting the content knowledge to real-world applications and problem situations that enable personnel to see how what they are learning connects with their lives and the world around them. The work that is asked of personnel must be authentic work that is relevant and that mirrors

real life; (b) emphasizing deep understanding of the learning by focusing on projects and problems that require personnel to use the content knowledge in new ways and to extend their understanding through collaboration with others; (c) helping personnel understand and monitor the thinking processes they are using by including metacognitive activities that ask them to reflect on their use of thinking structures and the effectiveness of the thinking strategies they employed; (d) using technology to help personnel access, analyze, organize and share what they are learning and allow them to independently locate appropriate tools for the task; (e) providing opportunities for employees to become "creators as well as consumers of published information" by providing opportunities for creating and verifying their own entries in collaborative sites and evaluating contributions of others; (f) engaging personnel in solving complex problems that require higher order thinking and application of content and that result in new perspectives and solutions to problems; (g) providing opportunities for personnel to work collaboratively as they gather information, solve problems, share ideas, and generate new ideas; (h) developing life and career skills by creating opportunities for employees to become self-directed learners who take responsibility for their own learning and who learn how to work effectively with others; and (i) helping employees make connections between subjects, concepts and ideas and with others, including those outside of the classroom (Apple, 2008).

Numerous studies and reports have emerged over the past decade that seek to identify the life, career, and learning skills needed for success in the 21st century world (Beers, n.d.). These skills are about the thinking processes and behaviors employees will use as they teach their subject area content and work with others to deepen their understanding of the content. All of the frameworks emphasize the need to ground 21st century skills in core content, and especially in an interdisciplinary fashion. Organizing instruction around important concepts and "big ideas" helps employees create conceptual structures for storing, retrieving and using information in new and unanticipated ways.

Identifying the 21st century skills of the employees need better understanding of other dynamics such as personality, emotional intelligence, general intelligence, and multiple intelligences. Foremost, personality awareness can improve how individuals communicate, motivate, and persuade others directly impacting on organizational success.

Barrick, Mount and Judge (2010) defined personality as the unique ways people think, act, and behave. It is an individual difference variable that could be viewed as important in the workplace. Employee personality takes ahead of talent and skills in so far as it transforms abilities into achievements. Several questions are thus asked: which personality type should an organization hire? Should an organization favor the extrovert over the introvert? Should it hire the generalist over the specialist? The answer is that "it depends" because each of the above types will offer benefits and drawbacks.

An online article on "Hiring: Risk-Taking, Charismatic and Goal-Oriented Leader - Why Understanding Personality in the Workplace is Important" at http://archprofile.com/corporate, the author stressed that the key is not to favor one type over another, but to match a personality to a given set of responsibilities. On top of that, it is likewise important to take into account how a person will fit in the overall atmosphere of the organization. The degree to which an employee's personality matches his career is a big factor in whether he will enjoy and succeed in it. A poor match can lead to demotivation and poor performance. A good match means an employee is more likely to be successful and will enjoy going to work.

Regardless of a person's position or responsibilities in the workplace, personality plays a role in how a person approaches a job, completes a task and interacts with others. They further imply that working in an office environment means having to deal with all different kinds of people, and sometimes getting along with all of them can be a challenge. Consequently, different people need to be dealt with in different ways (McQuerrey, n.d., http://smallbusiness.chron.com).

Emotional intelligence likewise contributes to improved work performance by enabling people to nurture positive relationships at work, work effectively in teams, and build social capital. Emotional intelligence may also contribute to work performance by enabling people to regulate their emotions so

as to cope effectively with stress, perform well under pressure, and adjust to organizational change.

As a matter of fact, there are five emotional intelligence competencies that correlate to workplace success, to wit: (a) intuition and empathy, (b) political acumen and social skills, (c) self-awareness, (d) self-regulation, and (e) self-expectations (Berry, 2015). Intuition and empathy refer to the awareness of others' feelings, needs, and concerns which is important in the workplace especially as it pertains to customer service orientation or the ability to anticipate, recognize, and meet customers' needs. The second competence includes political acumen and social skills which refer to the adeptness at inducing desirable responses in others. This competency is important in the workplace for the following reasons: (a) contributes to influencing or using effective tactics and techniques for persuasion and desired results; (b) communication or sending clear and convincing messages that are understood by others; (c) promoting leadership or inspiring and guiding groups of people; (d) conflict resolution or negotiating and resolving disagreements with people; and (e) building bonds or nurturing instrumental relationships for business success. The third is self-awareness which is defined as knowing one's internal states, preferences, resources, and intuitions. The fourth is self-regulation or managing one's internal states, impulses, and resources. Lastly, emotional intelligence competencies include self-expectations and motivation or the emotional tendencies that guide or facilitate reaching goals. This competency is

important in the workplace for the following reasons: (a) causing achievement drive or striving to improve or meet a standard of excellence imposed on selves; (b) gaining commitment or aligning with the goals of the group or organization; and (c) creating optimism or the persistence in pursuing goals despite obstacles and setbacks.

Emotional intelligence develops innovational creativity in individuals and as a result, helps in the improvement of people's job performance (Ganji, 2011; Hasanzadeh, 2009). In addition, what is of paramount importance in the process of job performance is facilitating the communication within an organization which is another function of emotional intelligence (Ganji, 2011). In fact, Muchinsky (n.d.) noted that emotional intelligence may be the long-sought missing link which unites those classic "can do" ability determinants of job performance with the "will do" dispositional determinants.

With the challenges of the 21st century, employees with good multiple intelligences can understand the following challenges: (1) need to cope with massive, rapid change; (2) need to be more creative in order to drive innovation; (3) need to manage huge amounts of information; (4) needs to increase customer loyalty; (5) need to be more motivated and committed; (6) need to work together better; and (7) needs to make better use of the special talents available in a diverse workforce (Cherniss, 2001).

Meanwhile, intelligent people are those who have a store of knowledge and skills gained from experience that allow them to manage efficiently the tasks

of daily life. A crucial aspect of intelligence, however, concerns the fact that the world is a dynamic and changing environment, and skills and knowledge gained from past experience may not be sufficient to meet a new challenge. Effective intelligence involves using existing learning systems and sensitivity to the environment to expand, elaborate, and enhance existing knowledge to analyze new situations and develop new solutions that help to routinize the environment again.

Organizations must therefore have sound internal systems and data based on past experience, but must also be sensitive to changing environments and flexible enough to develop new systems and new knowledge to cope with change.

An employee who have the right mix of personality, emotional intelligence, intelligence quotient, and multiple intelligences can cope with the demands of the 21st century, including the challenges of acquiring and possessing the skills needed in response to the demands of the present times.

Related Studies

Discussed in this part are the different researches conducted locally and internationally which are found relevant to the present study.

Aguila (2015) determined the "21st Century Skills of students in Nueva Vizcaya State University, First Semester, SY 2014-2015". Thirty-five (35) respondents of the AB English Program under the College of Arts and Sciences

were chosen using random sampling. It used the descriptive method and a 71 item- questionnaire developed by Vadil (2013). Findings revealed that social and cross-cultural skills along life and career skills surfaced as excellent skill among other 21st century skills. The respondents have a "very good" 21st century skills on other skills along learning and innovation skills, as well as information, media and technology skills. The highest educational attainment of father significantly correlates with learning and innovation skills and gender correlates with information, media and technology literacy and life and career skills. Very significant correlations exist between and among the dimensions of the 21st century skills.

The study of Aguila was parallel to the present study in terms of the focus - the 21st century skills. Yet, they differed because the present study dealt with the 21st century skills of the technology instructors whereas the previous study dealt with those of the students in a higher education institution.

In a study entitled "The Role of Social Skills in the Academic Performance of De La Salle Araneta University Freshmen Students: Creating a Culture", Comedis (2014) explored the following; (a) the academic performance of the students in Sociology; (b) the assessed social skills of the students as to cooperation, assertiveness, empathy and self-control; (c) and if there is a significant relationship between social skills and academic performance in Sociology. When correlation between social skills and academic performance was

tested, only self-control and overall social skills show significant relationship with academic performance.

Only in so far as the previous study explored social skills as a variable that it is being discussed in this study. The previous study of Comedis provided insights into the relevance of specific skills – in this case, social skills - in the students' academic performance in a particular learning area – in this case, Sociology. The present study dealt with 21st Century skills, in general, as opposed to the social skills in the previous study. In addition, the present study only determined the 21st century skills of the technology teachers of the College of Industrial Technology (CIT), Samar State University (SSU) as against the previous study which correlated the social skills of students with their academic performance.

In as much as Batang (2006) attempted to present a source material for the teaching of study and critical thinking skills for ESL (English as a second Language) Learners, it is thus similar to the present study which dealt with the 21st Century skills of the technology teachers of CIT. Results of the study showed that college students obviously have difficulties in reading the disciplines as reported by English Teachers and the Content Area Teachers, and that the developed prototype materials based on ERICA (Effective Reading in the Content Areas) strategies were promising instruments for attaining reading-to-learn objectives. The material appears suitable, acceptable and effective as viewed and perceived by English teachers and the Content Area teachers. It is

recommended that teachers of both language and content subjects are enjoined to use the material so that students will be used to using strategies to develop critical thinking skills.

While the study of Batang zeroed in on the study and critical thinking skills of English as Second Language (ESL) Learners, the present study specifically centered on the 21st Century skills of technology teachers of SSU. Yet, the previous study provided baseline information as regards the significance of certain specific skills in the acquisition of knowledge in particular learning areas. It was, in a sense, the objective of the present study to focus on the kind of 21st Century skills possessed by CIT technology teachers with the end-view of imparting holistic technical-vocational education to the students of Samar State University.

Also, Bingcang (2013) measured the profile of teachers within the Philippine Science High School system, a specialized high school system focusing on science and mathematics. It looked into two major classifications of teachers—subject taught and campus location. The study then explored the significant differences between teachers within the mentioned major classifications of teachers in terms of ICT, as measured by the National ICT Competency for Teachers. Inferential statistics using t-test was used to see the relationship of subjects taught and campus location to the teacher's ICT competency. The study revealed that: (1) there is a difference between Humanities and Science teachers in terms of ICT Competency, and (2) there is no

significant difference between rural and urban campuses in terms of ICT Competency. Based on the foregoing, the researcher proposed recommendations for teachers, school administrators, curriculum writers, and policy makers.

Competency in ICT is, in a sense, a 21st Century skill that employees must possess to gain competitive advantage in the world of work. Hence, the previous study of Bingcang found relevance to the present study which delved into the 21st Century skills of CIT personnel of SSU. Despite the implied similarities between the two researches, they differed in a variety of ways. In the first place, the previous study involved teachers in Science education institutions throughout the country as opposed to the CIT technology instructors who served as respondents of the present study. In the second place, the previous study focused specifically on the technical skill of utilizing ICT in education whereas the present study focused on the general 21st Century skills of CIT instructors.

Fernandez (2013) generally looked into the teacher's competence and learner's performance in the Alternative Learning System. It specifically determined the teacher-learner respondent's profile, their competence using Competency Based Examination. This research aimed to determine the relationship between teachers' competence and learners' performance in the Competency Based Examination. It was found out that no significant relationship exists between teachers' competence and certain socio-demographic profile such as gender and educational background. While teachers' years of teaching experience in ALS, salary and performance rating are found to have significant

relationship. Among the learners, gender and distance of residence from the community learning center had a significant relationship to their performance. Furthermore, there is no significant relationship between the teachers' competence and learners' performance.

Although the previous study focused on the teachers' competence and learners' performance in the Alternative Learning System (ALS) towards an enriched instructional program, it is nonetheless cited here as it provided basis in the conduct of the present study which, in a sense, implicitly assessed the competence of the CIT technology teachers in terms of their possession of 21st Century skills.

Sali-ot (2011) determined the competencies of instructors and its correlation to the factors affecting the academic performance of students in Western Mindanao State University- External Studies Units, Western Mindanao, Philippines. The descriptive research method was employed in the conduct of the study. The instructors are much competent in the five indicators of the teaching competencies. The students' performance was sometimes affected with the predetermined factors. The two groups of respondents have the same responses as to the teachers' competencies and the factors affecting the academic performance. The most prevailing competency was communication with the learners, and the least prevailing is learner reinforcement- involvement. The most prevailing factor was intellectual, and the least prevailing was physical.

There was moderate correlation between the competencies of college instructors and the factors affecting the academic performance of students.

Despite the manifest dissimilarities between the two researches, the previous study on the "Competencies of Instructors: Its Correlation to the Factors Affecting the Academic Performance of Students" nevertheless provided conceptual underpinning that shed light to the importance of developing the competencies of employees in an organization. The previous study of Sali-ot dealt broadly with the competencies of instructors and their impact on factors affecting the academic performance of students. The present study, on the other hand, was more specific since it dealt only with the 21st century skills of CIT technology teachers which are vital aspects of their competencies.

De Leon-Abao (2014) determined how the teachers' instructional competence influences the intermediate students' comprehension skills as well as their critical thinking ability. This revealed that the students are generally obedient. They are conscious of applying the skill in carrying out their varied activities/responsibilities because according to them careful compliance to standards and the like, engenders peace and order. On the other hand, both groups performed below average in Predicting Outcomes and Drawing Inferences respectively.

Only in so far as the study of De Leon-Abao provided precedent as regards the aspect of competence of CIT technology instructors that it is mentioned in this research. The two studies, however, differed in terms of the

other variates studied, the respondents involved as well as in other methodologies used.

Daguplo (2009) assessed the teaching competence of the graduate faculty of Southern Leyte State University. A total of 122 randomly selected graduate education students responded to the standardized questionnaire. Descriptive analysis revealed that women faculty outnumbered their male equals in pursuing higher academic degree for professional development and competence. Thus, female graduate studies faculty stood-out in the Assistant and Associate Professorships' ranks. Moreover, graduate students assessed their professors as very competent in two areas, namely, (i) Professional Ethics and (ii) Personal Qualities; and as competent in the areas of (i) Mastery of the Subject Matter, (ii) Teaching Skills), (iii) Classroom Management, (iv) Evaluation Skills, (v) Intrapersonal Qualities, and (vi) Aesthetic Qualities. Inferential analysis, however, revealed a "weak to moderate" correlation with the different areas of teaching skill. Only the educational degree of the SLSU Graduate Education Faculty is strongly correlated with personal qualities.

The previous study of Daguplo was broader in the sense that it touched on the teaching competence of the Graduate Education faculty of Southern Leyte State University whereas the present study was more specific since it dealt on a certain aspect of the teachers' competence – their possession of 21st century skills.

Guiab (2014) conducted a descriptive survey research which aimed to evaluate the services and academic programs of Philippine Normal University-

North Luzon Campus, Alicia, Isabela. There were 224 respondents - 126 Bachelor in Secondary Education (BSE) and 98 Bachelor in Elementary Education (BEEd) students. Findings revealed that Philippine Normal University provides to some extent the skills on knowledge and technical, communication, human relation, leadership, problem-solving, and information technology. The pre-service teachers' perception on the adequacy of training in communication, human relation, leadership, problem-solving and research skills is moderately adequate. Based from the findings, it is recommended that PNU North Luzon has to improve the services, facilities and enhance the curricula with global trends in order to meet the demands of the modern educational system.

Abao (2013) conducted a study to assess the Bachelor of Secondary Education and Bachelor of Elementary Education-student teachers' English communication skills in oral and written discourses and their teaching performance. Using the Pearson r correlation, finding revealed that both groups were comparatively better in oral than in written communication. As regards teaching performance, both groups showed satisfactory results. There was however a low relationship between the English communication skills and the student teachers' teaching performance.

The study of Abao found relevance to the present study considering the similarity of focus - communication skills. The present study touched upon communication skills as one of the 21st century skills that technology instructors must possess. However, the previous study assessed the communication skills of

the students as opposed to the present study which assessed the communication skills of the technology instructors.

All the aforementioned researches provided rich insights into the possible outcomes of the present research. Yet, they were different in variates studied, research location, research environments as well as the processes used.

Chapter 3

METHODOLOGY

This chapter provides for the procedures in the conduct of this study which includes the research design, instrumentation, validation of instrument, sampling procedure, data gathering procedure, and statistical treatment of data.

Research Design

This research utilized the descriptive research design which is often used to assess thoughts, opinions, and feelings. It is often used to analyze behavior and to meet the more pragmatic needs of the media, such as, in evaluating competencies of personnel (Shaughnessy, Zechmeister, and Jeanne, 2011). With such design, this study assessed the 21st Century skills of the technology instructors of the College of Industrial Technology (CIT) of Samar State University (SSU), during the School Year 2014-2015.

The descriptive method of research was used to describe and assess the emotional intelligence quotient, intelligence quotient, personality, and multiple intelligences of the technology instructor-respondents, and their 21st Century skills along information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills. Comparative analysis was likewise utilized in order to determine the significant differences in the 21st Century skills possessed of the technology instructors when grouped according

to their emotional intelligence quotient, intelligence quotient, personality, and multiple intelligences.

Descriptive statistical tools such as frequency count, percentage, mean, weighted mean, and standard deviation were used in order to compute, analyze and interpret the descriptive questions of the study. On the other hand, inferential statistical tools One-Way Analysis of Variance (ANOVA), and Scheffe's test were used in order to compute, analyze and interpret the inferential problems of this study.

Instrumentation

Standard instruments on emotional intelligence quotient, intelligence quotient, personality, and multiple intelligences were used.

Questionnaire. This served as one of the instruments used in gathering the data. This was researcher-made and was made for the purpose of identifying the 21st century skills of the technology teachers of the College of Industrial Technology.

The questionnaire on the 21st century skills was a checklist divided into four broad categories, to wit: (1) information, media, and technology skills; (2) learning and innovation skills; (3) communication skills; and (4) life and career skills. Except for communication skills, all three 21st century skills were further subdivided into categories, namely, visual and information literacies, media literacy, multicultural literacy, and global awareness under the information,

media and technology skills; creativity and curiosity, critical and problem solving skills, and risk taking under the learning and innovation skills; flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility under the life and career skills. Respondents' responses were quantified using the following five-point scales: 5 for excellent, 4 for very good, 3 for good, 2 for fair, and 1 for poor.

Tests. Four standard tests were used in this study, to wit: (1) Otis-Lennon IQ Test, (2) Bar-on Emotional Intelligence Test, (3) 16PF Personality Test, and (4) Gardner's Multiple Intelligences Test.

The Otis–Lennon IQ Test is a test of abstract thinking and reasoning ability of. The Otis-Lennon is a group-administered, multiple choice, taken with pencil and paper, measures verbal, quantitative, and spatial reasoning ability. The test yields verbal and nonverbal scores, from which a total score is derived, called a School Ability Index (SAI). The test has twenty-one subtests that are organized into five areas, namely, verbal comprehension, verbal reasoning, pictorial reasoning, figural reasoning, and quantitative reasoning, each with equal numbers of verbal and non-verbal items.

The Bar-On Emotional Intelligence Test or EQ-i contains 133 items in the form of short sentences and employs a 5-point response scale with a textual response format ranging from "very seldom or not true of me" (1) to "very often true of me or true of me" (5). It is a self-report measure of emotionally and

socially intelligent behavior that provides an estimate of emotional-social intelligence. Raw scores on the *EQ-i*™ are automatically tabulated and converted into standard scores based on a mean of 100 and standard deviations of 15.

The Sixteen Personality Factor Questionnaire (16PF) is a self-report personality test developed by Raymond B. Cattell, Maurice Tatsuoka and Herbert Eber. The 16PF provides a measure of normal personality as a clinical instrument to help diagnose psychiatric disorders as well as help with prognosis and therapy planning. The 16PF instrument provides clinicians with a normal-range measurement of anxiety, adjustment, emotional stability and behavioral problems. It can also be used within other areas of psychology, such as career and occupational selection. Administration of the test takes about 35–50 minutes for the paper-and-pencil version. The test instructions are simple and straightforward and the test is un-timed; thus, the test is generally self-administrable and can be used in either an individual or a group setting.

Gardner's Multiple Intelligences Test measured the respondents' multiple intelligences in the following aspects: analytical such as logical-mathematical, musical, and naturalist; introspective such as intrapersonal, existentialist, and visual; and interactive such as verbal, kinesthetic and interpersonal.

Validation of Instrument

Only the questionnaire was validated as regards its content through expert analysis and as regards its reliability through test-re-test method. The

other instruments were not validated in so far as they were standard documents which did not necessitate validation.

The draft of the questionnaire was submitted to the research adviser for experts' analysis as regards its content. The suggestions for refinement were incorporated and the questionnaire was prepared for pilot testing to the technology instructors in Northwest Samar State University-San Jorge Campus, San Jorge, Samar.

The first administration of the questionnaire was made personally by the researcher during the 1st week of January 2016. The second administration (re-test) was made to the same set of respondents during the 2nd week of January. The computed reliability coefficient was posted at 0.87, interpreted as "fairly high, adequate for individual measurement".

Sampling Procedure

This study involved 47 technology teachers of the College of Industrial Technology (CIT) of Samar State University (SSU)-Main Campus, Paranas Campus in Paranas, Samar, and Basey Campus in Basey, Samar, during the School Year 2014-2015. The technology instructors were from the CIT areas, namely, Architecture, Automotive, Cosmetology, Drafting, Foods, Electricity, Electronics, Garments, and Mechanical Technology. Total enumeration was used to include all the technology instructors of SSU and in order to get a more generalized findings of the study.

Data Gathering Procedure

The collection of the needed data proceeded with the necessary requests for approval granted. A letter addressed to the President of the University requesting for permission to conduct the study was made by the researcher. Upon approval of the said letter request, another letter addressed to the President of Northwest Samar State University through the Campus Director of NWSSU-San Jorge Campus, San Jorge, Samar, requesting permission to conduct the dry-run among its technology teachers, was made. After the validation was conducted, the actual tests as well as the survey questionnaire were given to the respondents by the Guidance Office of SSU through its registered guidance counsellor and psychometrician.

The conduct of the Otis-Lennon IQ Test, Bar-On Emotional Intelligence Test, and 16PF Test was done in one day with the respondents gathered in one room, with the Guidance Office representative administering the test. The instrument for the Multiple Intelligence Test was given to the respondents simultaneously with the questionnaire on the 21st Century Skills.

The SSU Guidance Office interpreted the results of the three tests on IQ, EQ, and Personality Test. The researcher tabulated the respondents' responses in the MI Test as well as in the questionnaire. Finally, the researcher tabulated, computed, analyzed, and interpreted the data of this study.

Statistical Treatment of Data

Descriptive statistical tools such as frequency count, percentage, mean, weighted mean, and standard deviation were used in order to compute, analyze and interpret the descriptive questions of the study. On the other hand, inferential statistical tools such as One-Way Analysis of Variance (ANOVA), and Scheffe's test were used in order to compute, analyze and interpret the inferential problems of this study.

Frequency count. This descriptive statistical tool was utilized to present the data as to the number of occurrences.

Percentage. This was used in the analysis and interpretation of data as to their magnitude of occurrences.

Mean. This measure was employed to calculate the averages where they were appropriate .

Weighted Mean. This was used to express the collective perception of the respondents as regards the 21st Century skills they possess.

The following weighted ratings were used to interpret the data:

4.51-5.00 - Excellent (E)

3.51-4.50 - Very Good (VG)

2.51-3.50 - Good (G)

1.51-2.50 - Fair (F)

1.00-1.50 - Poor (P)

One-way ANOVA. This was used to statistically test whether there are significant difference in the 21st Century skills possessed by the respondents when grouped with respect to their EQ, IQ, personality, and multiple intelligences.

Scheffe's Test. When the hypothesis tested using ANOVA was rejected it necessarily meant further testing to find exactly where the significant difference lies when comparing the means of the groups. The Scheffe's method of multiple comparisons (Padua, 1976) was used.

An alpha level of 0.05 was used to determine the statistical significance of the differences.

Chapter 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter discusses the data gathered and the corresponding analysis and interpretations made, and the tests of hypotheses.

Profile of Technology Instructor-Respondents

The profile of the technology teacher-respondents is presented here in terms of their: 1) intelligence quotient, 2) emotional intelligence quotient, 3) personality, and 4) multiple intelligences.

Intelligence Quotient (IQ) of the Respondents. Table 1 presents the IQ of the respondents based on the Otis-Lennon Mental Ability Test (OLMAT). The table presents the respondents' raw scores, deviation IQ scores, percentile rank, stanine, and the corresponding interpretation in terms of mental ability level. This was administered by the SSU Guidance Centre and interpreted by the same office.

The table reveals that the majority (35 out of 47 technology instructors) of the respondents' mental ability ranges from below average with deviation IQ scores from 53-87, and stanine of 1-3, interpreted as "below average". The remaining 12 technology instructor-respondents were average in mental ability with deviation IQ scores from 88-99, and stanine of 4-5, interpreted as "average".

Table 1

Respondents' IQ Result in the Otis -Lennon Mental Ability Test

Statistics	IQ Interpretation (Otis-Lennon Mental Ability)	
	Average IQ	Below Average IQ
RAW SCORE	31-46	5-30
DIQ (Deviation IQ)	88-99	53-87
Percentile Rank	24-48	1-21
Stanine	4-5	1-3
Count		
Average	12	
Below Average	35	
Total	**47**	

While intelligence quotient (IQ) is more strongly correlated with reasoning (mental ability) and less so with physical dexterity (motor function), IQ test scores predict performance ratings in all occupations (Schimdt and Hunter, 1998). For highly qualified activities such as research and management, low IQ scores are more likely to be a barrier to adequate performance, whereas for minimally-skilled activities, physical strength (manual strength, speed, stamina, and coordination) is more likely to influence performance. It is largely through the quicker acquisition of job-relevant knowledge that higher IQ mediates job performance. However, based on literature pertaining to IQ, the OLMAT is a measure of general academic ability which is not content-specific. Hence, the results yielded by the technology instructors of SSU-CIT might have been influenced by factors such as other inherited characteristics, learning experiences, motivation, special skills, attention, persistence, and emotional stability.

Furthermore, the results mean that although the majority of the technology instructors had below average IQ, this does not mean that they are altogether mentally incapable of possessing 21st century skills. Most probably, they are just more concerned with the other intelligences than the more cognitive assessment of their IQ.

Emotional Quotient (EQ) of the respondents. Table 2 presents the emotional quotient of the respondents using Bar-On EQ-iS.

Based from the results of Table 2, 18 of the 47 technology teachers of SSU-CIT were markedly low in intrapersonal skill with a standard score under 70, followed by 14 who were low. On the average, the technology teachers were very low in terms of intrapersonal skills as shown by the mean of 75.86 or approximately 76 standard score. The results suggest that the technology instructors of SSU-CIT have atypically impaired assessment of the inner self with extensive room for improvement.

Moreover, they have inability to understand and express their own feelings; that they indicate the potential for serious difficulties in getting in touch with their feelings, and about life in general. The 21st century skill of flexibility and adaptability fall within the composite area of intrapersonal skills. Adaptability, according to Houston (2007) is the ability and willingness to cope with uncertain, new, and rapidly changing conditions on the job, including responding effectively to emergencies or crisis situations and learning new tasks,

Table 2

Respondents' EQ Results in the Bar-On EQ-iS -Emotions Inventory

Standard Score	Interpretation	EQ Standard Scores in the Given Scales No. of Respondents per Group						
		A-Intra-personal	B-Interper-sonal	C-Stress Management	D-Adaptability	E-General Mood	F-Total EQ	G-Positive Impression
130+	Markedly High	0	0	0	0	0	0	0
120-129	Very High	0	0	0	3	2	0	6
110-119	High	0	0	0	2	0	0	24
90-109	Average	5	9	9	18	7	0	12
80-89	Low	14	18	18	15	19	8	4
70-79	Very Low	10	11	11	4	8	17	0
Under 70	Markedly Low	18	9	9	5	11	22	1
-	**Total**	**47**	**47**	**47**	**47**	**47**	**47**	**47**
-	**Mean**	**75.68**	**81.09**	**71.13**	**90.04**	**81.19**	**71.17**	**109.47**
-	**Interpret**	**VL**	**L**	**VL**	**Ave**	**L**	**VL**	**Ave**

Legend:

130+ = Markedly High
120 - 129 = Very High
110-119 = High
90-109 = Average
80-89 = Low
70-79 = Very Low
Under 70 = Markedly

technologies, and procedures. It also includes handling work stress; adapting to different personalities, communication styles, and cultures; and physical adaptability to various indoor or outdoor work environments.

Thus, the technology teachers of SSU-CIT may be experiencing serious problem in managing work stresses as a result of rapidly changing conditions on the job, and in responding to emergency and crisis situations on the job, among other situations that require adaptability.

As regards the interpersonal aspect of emotional intelligence, 18 technology teachers were low, indicated by standard scores between 80-89, and 11 who were very low, indicated by standard scores between 70 and 79. On the average, the technology instructors of SSU-CIT were low in interpersonal skills, as indicated by the mean of 81.09. The results further suggest that they have underdeveloped emotional capacity to establish cooperative, constructive, and satisfying relationships, with room for improvement. The results further reflect that the respondents are not socially-adept and are ineffective in understanding others, interacting and relating well with colleagues. In addition, the low-level interpersonal skills of the technology teachers of SSU-CIT indicate that they are not effective in establishing relationship with other people, at communicating, at managing conflict, and in positively dealing with other people (The Tracom Group, 2006, at http://www.tracomcorp.com/article/CA413074.html).

Table 2 also yields the results of the stress management ability of the respondents. As per data in the said table, there were 18 respondents who were

low in this aspect of emotional intelligence, indicating standard scores between 80 and 89 whereas there were 11 who were very low, indicating standard scores between 70 and 79. Over-all, the mean for stress management was 71.13, interpreted as "very low" stress management ability of the technology instructor-respondents. The results meant that the respondents have extremely underdeveloped capacity for managing and controlling emotions, with considerable room for improvement on this aspect. Furthermore, the results imply that the technology instructors in SSU-CIT need to improve on their stress tolerance or the ability to withstand adverse events and stressful situations without falling apart by actively and confidently coping with stress, and on their impulse control or the ability to resist or delay an impulse, drive, or temptation to act.

Table 2 likewise shows the adaptability aspect of emotional intelligence of the technology instructor-respondents. As presented in the table, 18 respondents were identified with average adaptability, having standard scores between 90 and 109, followed by 15 with low adaptability or standard scores between 70 and 79. There were three respondents who were very high in adaptability while there were five who were markedly low in adaptability. The mean was computed at 90.04, interpreted as average adaptability. This result indicate that the respondents have adequate emotional and social capacity to be flexible, realistic, and successful in managing change. The results likewise reflect that the respondents are adept at finding effective ways of dealing with everyday

problems. More importantly, this indicate the effective functioning of the technology instructors in handling situations of change in school.

Miller (2002) stressed that a flexible workforce allows the organization to meet changing performance requirements, adapt, and respond to workplace innovations. Thus, organizations value employees who have the ability to adjust to changing expectations and capitalize on opportunities that enhance their skills (Ngo and Loi, 2008). The results of this study indicating an average adaptability of the technology instructors affirm the findings of the survey conducted by human resources professionals indicating that adaptability is rated among the most desired skills for both the new and experienced workers (Society for Human Resource Management, 2008).

Meanwhile, Ployhart and Bliese (2006) proposed that individual adaptability is a relatively stable individual difference that influences how employees interpret and respond to a situation. Adaptable individuals are more likely to perceive situations in a positive light such as challenging rather than stressful, and are more sensitive to environmental cues.

As regards general mood, 19 respondents were low, with standard scores between 80 and 89, followed by 11 who were markedly low, with standard scores under 70. However, there were two respondents who were identified very high in general mood. The mean was posted at 81.19, interpreted as low in general mood aspect of emotional aspect which, in turn, implied that they have

underdeveloped emotional capacity to be optimistic, energetic, and be self-motivated, with room for improvement.

The total emotional quotient of the respondents was described as "very low" as indicated by the mean of 71.17. Of the 47 technology instructors, 22 were identified as markedly low in total EQ, with standard scores under 70, followed by 17 who were very low, with standard scores between 70 and 79. The results imply that the respondents have extremely underdeveloped emotional and social capacity with considerable room for improvement. These results mean that the technology instructors of SSU-CIT can do better in effectively managing their personal, social, and environmental demands by realistically and flexibly coping with the immediate situation, solving problems, and making decision. Finally, the results are suggestive that the technology teachers of SSU-CIT need to improve on their emotional and social competencies in order to live in an emotionally intelligent manner.

As regards positive impression, Table 2 shows that there were 24 respondents who were high in this aspect, with standard scores between 110 and 119, followed by 12 respondents who were average in this aspect, with standard scores between 90 and 109. The average positive impression was 109.47, interpreted as average. This implied that the technology instructors were effective in attempting to create an overly positive impression of themselves.

Personality profile of the respondents. Table 3 presents the type of personality of the respondents using the 16 PF Test (Fifth Edition) on personality.

Table 3

Respondents' Personality Traits

Personality Traits	Scoring Guidelines			Total	Mean	Interpret
Primary Traits	**Low (1-3)**	**Ave (4-7)**	**High(8-10)**			
A (Warmth)	18	27	2	47	4.09	Ave
B (Reasoning)	28	18	1	47	3.47	Low
C (Emotional Stability)	11	36	0	47	4.45	Ave
E (Dominance)	22	24	1	47	3.43	Low
F (Liveliness)	5	42	0	47	4.72	Ave
G (Rule-Consciousness)	13	33	1	47	4.55	Ave
H (Social Boldness)	4	43	0	47	4.83	Ave
I (Sensitivity)	6	37	4	47	5.06	Ave
L (Vigilance)	2	38	7	47	5.64	Ave
M (Abstractedness)	0	42	5	47	6.26	Ave
N (Privateness)	3	38	6	47	5.34	Ave
O (Apprehension)	4	42	1	47	4.98	Ave
Q1 (Openness to Change)	14	31	2	47	4.30	Ave
Q2 (Self-Reliance)	1	45	1	47	5.17	Ave
Q3 (Perfectionism)	3	40	4	47	5.28	Ave
Q4 (Tension)	15	32	0	47	4.13	Ave
Global						
EX (Extraversion)	2	45	0	47	4.91	Ave
AX (Anxiety)	5	37	5	47	5.36	Ave
TM (Tough-Mindedness)	1	34	12	47	6.51	Ave
IN (Independence)	12	34	1	47	4.02	Ave
SC (Self-Control)	6	41	0	47	4.83	Ave

Legend: (Scoring)
8-10 High
4-7 Average
1-3 Low

A cursory glance at the data in Table 3, it is revealed that the respondents were average in 14 of the 16 primary traits. As regards reasoning and dominance, the respondents were low.

Taking each of the 16 traits into consideration, Factor A or warmth, 27 of the 47 technology instructors were average. This implied that the respondents like and need to be with their colleagues. In addition, they rarely like to be alone, may indicate that spending large amounts of time alone is very difficult or demotivating for them, and need and want high levels of interpersonal contact and have a "the more, the merrier" approach to life.

As to Factor C trait or emotional stability, majority (36) of the technology instructors were average. This implied that the technology instructors of SSU-CIT are less likely to experience wide variations in mood, are more emotionally stable or "steady as they go" in their emotional experience, usually better able to manage stress in a positive, proactive way - that is, to remain solution-focused under stress or to "keep their cool" in a crisis.

Table 3 likewise shows that out of the 47 technology teachers, 42 of them were average in Factor F or liveliness trait. This meant that the respondents were usually uninhibited, playful, adventurous types who enjoy being the center of attention. Similarly, they may become bored easily. As a result, they are at their best in "generalist" work roles that allow them to wear many different hats and to move from one activity to another without investing too deeply in any one of them. As a result, they need to watch their tendency to overgeneralize - as in the case of "jack of all trades, master of none" - and may need to strengthen their ability to maintain interest and attention in the face of difficulty or complexity.

As to Factor G or rule consciousness trait, majority of the technology teachers were average which meant that they are usually highly ethically driven and responsible, and more rule- or principle-governed.

As regards Factor H or social boldness, majority of the technology instructors were average. This meant that they are social initiative takers who are comfortable with such activities as networking, self-marketing, introducing themselves to others, and doing small talk.

Table 3 shows that majority or 37 of the 47 technology instructors are average in Factor I trait or sensitivity. This implied that the technology teachers of SSU-CIT are generally emotionally sensitive, empathic, aware of feelings, and prone to make decisions on a more personal or subjective basis (focused on personal values or the needs of others). As a result, they do well in roles that call for interpersonal sensitivities and an emphasis on "feeling" issues.

Thirty-eight of the 47 technology teachers in SSU-CIT were average in Factor L trait or vigilance. On this note, the technology instructor-respondents are more careful, vigilant, wary, or sceptical about trusting others and are less likely to assume that others' motivations are trustworthy or benign. Furthermore, they are more likely to "read between the lines" in evaluating others - which means that they are less likely to be taken in by those who have a hidden agenda, but also that they are more likely to imagine a hidden agenda when, in fact, none exists. The technology instructors have cautious stance that says, "I will trust those who earn my trust."

For Factor M or abstractedness trait, majority of the technology instructors were average. The technology instructors are thus generally creative, imaginative, and insightful. This also meant that they are abstract or theoretical in orientation (focused on ideas, not their practical implementation). According to Keirsey (n.d.), this factor is the biggest psychological divide between persons, especially in the workplace. Translated into the workplace, those who focus on what is indicate a low M (low abstractedness) and tend not to understand. On the contrary, those who focus on what could or might be indicate a high M. As a result, the world of work is strongly segregated along these lines – that is, people seek work that provides them either with a steady stream of facts and details (low M) or a steady stream of ideas and possibilities (high M).

Table 3 shows that 38 technology instructors were average in Factor N or privateness trait. The implication of this yielded result is that majority of the technology instructors of SSU-CIT are careful and selective about self-disclosure (when, where, and with whom they share information). Moreover, they are slower to open up to others and, as a result, may strike others as hard to get to know. These people tend to do well in roles that require caution about the disclosure of information.

Majority of the technology instructors were average in Factor O or apprehension trait. Technology instructors tend to be merciless self-critics. While this result suggests high performance standards, it also suggests a general tendency toward self-blame that is not necessarily productive.

For Factor Q1 or openness to change trait, Table 3 shows that 31 were average in this trait. This means that, on the average, the majority of the technology instructors like change, respond positively to change, seek change, and want to "boldly go where no one has gone before". They are quick to jump on the change bandwagon and tend to become bored, frustrated, or demoralized by situations that provide insufficient change.

For Factor Q2 or self-reliance, 45 of the 47 technology instructors were average. This meant that the technology instructors like to solve problems on their own. They like to act independently and may be attracted to entrepreneurial roles. They may find it hard to delegate or may run the risk of overly isolating themselves, being seen as "not a team player" in a culture that may consist of more low Q2 types.

As to Factor Q3 or perfectionism trait, 40 technology instructors were average in this trait. This meant that the technology teachers are more organized, systematic, methodical, goal oriented, focused on conventional achievement, like high levels of structure, and tend to have steady work habits oriented around starting tasks promptly, working first and playing second, and taking deadlines seriously.

Table 3 shows that 32 technology instructors of SSU-CIT were average in Factor Q4 or tension trait. This meant that the technology instructors are "always on the go", "fidgety", constantly busy, efficiency-minded, and driven to make

things happen. It further meant that delays frustrate them, producing impatience, tension, and irritability.

However, as regards Factor B or reasoning trait, 28 of the 47 technology instructors of SSU-CIT were low in this trait. This result implies that technology instructors are most comfortable with familiar, well-known tasks in which they can draw heavily on past experience and can utilize a concrete style of learning by doing. They may be very effective hands-on learners but often need more time to assimilate and adjust to new information. They may find mental complexity aversive or unpleasant. They may prefer practical, experiential learning contexts.

Also, as to Factor E or dominance trait, the technology teachers were low in this trait. Thus, the technology instructors make few demands on others and instead like to accommodate the needs and wishes of other people, sometimes making insufficient room for their own to be expressed. They dislike conflict, enjoy pleasing others, and like cooperativeness and harmony-seeking. They may not enjoy or seek leadership roles, and if placed in such roles, may not be seen as "conventional" or "strong" leaders; they lead, not by the force of their will or personality, but by other traits such as positional authority and responsibility.

Hence, the data in Table 3 shows that except for Factor B and Factor E personality types with means of 3.47 and 3.43, respectively, interpreted as low, all the 14 personality traits obtained mean values that when rounded off to the nearest whole numbers are either 4, 5, or 6, the interpretation of which is

"average". The results of the 16PF questionnaire reveal the potential of the technology teachers of SSU-CIT to exhibit the 14 personality types, confirm suitability, and help identify development needs.

However, the results in Table 3 are based on the technology instructors' own description of their personality and behaviour. Thus, the accuracy of the results is dependent on their openness in answering the questionnaire, and upon their level of self-awareness.

Meantime, Table 3 also showed the description of the "global factors" of personality. As it is reflected in the table, the technology instructors of SSU-CIT were average in all the five major personality traits or Big Five, to wit: extraversion (EX), anxiety (AX), tough-mindedness (TM), independence (I), and self-control (SC).

According to Schneider and Smith, personality is meaningful to management, because employees' personalities may dictate how well they perform their jobs. Personality may indicate how hard a person will work, how organized they are, how well they will interact with others, and how creative they are. Hence, the results in Table 3 are helpful in formulating management development programs with identified personality traits of the employees as the bedrock. Over-all, Schneider and Smith (2004) said that understanding one's own personality characteristics may improve one's ability to develop as an employee. Therefore, it is important to understand the different facets of personality and the ways in which they can be measured.

Multiple intelligences profile of the respondents. Table 4 presents the multiple intelligences possessed by the technology teacher-respondents as measured by Howard Gardner's Multiple Intelligence Test.

Table 4

Respondents' Multiple Intelligences

Multiple Intelligences Classification	Frequency	Rank
Linguistic/Verbal	10	4.5
Logical/Mathematical	17	2.5
Musical	7	7
Spatial/Visual	24	1
Bodily Kinaesthetic	10	4.5
Intrapersonal	17	2.5
Interpersonal	5	8
Naturalist	9	4.5
Existentialist	0	9
Total	**99**	
Max	**5**	
Min	**0**	

As seen in Table 4, the visual/spatial intelligence ranked first as the preferred intelligence of the technology instructor-respondents with 24 of them identifying this intelligence as the foremost among the nine intelligences. The other intelligences possessed by the respondents were logical/mathematical, intrapersonal, linguistic/verbal, bodily/kinaesthetic, and naturalist. The technology instructor-respondents, however, identified as the least preferred

intelligence the interpersonal intelligence, with only five of them identifying this as possessed. The respondents did not consider existentialist as one of their intelligences. No respondent is an Existentialist.

The results in Table 4 reveals that the technology instructor-respondents are visual/spatial which meant that they have the capacity to think in images and pictures, or to visualize accurately and abstractly. Similarly, the yielded results in Table 4 show that the technology instructor-respondents were less introspective or reflective.

These multiple intelligences proposed by Gardner translate into learning styles which refer to the individual's preference for certain conditions in the learning environment, or the preferred approach used when developing knowledge, values, and skills. It refers to the ways that people absorb and process information. Gardner (2010) opposes the idea of labelling learners to a specific intelligence. Each individual possesses a unique blend of all the intelligences.

When applied to the workplace, the multiple intelligences generate a basis for strategies to meet the demands of today's organizations. These strategies include (1) how to identify and mobilize knowledge in the workplace, (2) how to develop work teams that maximize the benefits of diversity, (3) how to unleash the potential for creativity, problem-solving, and leadership within each person, and (4) how to remain flexible, adaptable, and responsive to changing environments. The implication of the results to the workplace is to maximize the

potential of the workforce and to improve on the preferred intelligence in order to compete in a highly volatile and unpredictable environment.

21st Century Skills of the Teacher-Respondents

Table 5 presents the 21st century skills of the technology instructor-respondents.

Table 5

Respondents' 21st Century Skills

21st Century Skills	Weighted Mean	Interpretation
I. Information, Media and Technology Skills	**3.99**	**VG**
A. Visual and Information Literacies	4.08	VG
B. Media Literacy	4.04	VG
C. Multicultural Literacy	3.86	VG
D. Global Awareness	3.96	VG
II. Learning and Innovation Skills	**3.56**	**VG**
A. Creativity and Curiosity	3.86	VG
B. Critical and Problem-Solving Skills	3.42	G
C. Risk Taking	3.39	G
III. Communication Skills	**3.38**	**G**
IV. Life and Career Skills	**3.26**	**G**
A. Flexibility and Adaptability	3.48	G
B. Initiative and Self-Direction	3.28	G
C. Social and Cross Cultural Skills	3.18	G
D. Productivity and Accountability	3.29	G
E. Leadership and Responsibility	3.09	G
Grand Total	**60.93**	
Grand Mean	**3.56**	**VG**

Legend:
4.51-5.00 – Excellent (E)
3.51-4.50 - Very Good (VG)
2.51-3.50 – Good (G)
1.51-2.50 – Fair (F)
1.00-1.50 – Poor (P)

The table reveals that two of the macro 21st century skills, namely, information, media, and technology skills, and learning and innovation skills, were perceived "very good" by the technology instructor-respondents, as shown by the weighted mean posted at 3.99 and 3.56, respectively. The other two macro 21st century skills, to wit, communication and life and career skills, were perceived as "good" with weighted mean of 3.38 and 3.26, respectively.

In particular, Table 5 shows that all four micro skills under information, media, and technology skills were "very good", with the visual and information literacies obtaining the highest weighted mean at 4.08, followed by media literacy, with a weighted mean of 4.04. As regards the learning and innovation skills, only creativity was perceived "very good" with an obtained weighted mean of 3.86. On the other hand, all four micro skills under life and career skills were perceived as "good" by the technology instructors, with flexibility and adaptability, obtaining the highest obtained weighted mean at 3.48, followed by productivity and accountability with a weighted mean of 3.29.

Over-all, the weighted mean for all the 21st century skills was posted at 3.56, interpreted as "very good". This meant that the technology instructors of SSU-CIT possess the indispensable skills needed in the 21st century. They are equipped with information, media, and technology skills, most importantly, visual and information literacies; with learning and innovation skills, most importantly creativity; with communication skills; and with life and career skills,

most importantly flexibility and adaptability. This meant further that the technology instructors in SSU-CIT are able to access the abundance of information, rapid changes in technology tools, and are able to collaborate, and make individual contributions to the technology and media-suffused environment; are prepared for increasingly complex life and work environments in the 21st century, and are focused on creativity, critical thinking, and communication and collaboration; are able to articulate thoughts and ideas clearly and effectively through speaking and writing, work effectively with diverse teams, exercise flexibility and willingness to make necessary compromises to accomplish a common goal, and assume shared responsibility for collaborative work; and are able to navigate the complex life and work environments in the globally competitive information age.

The results shown in Table 5 re-affirms the idea espoused by Millanovich (2006) that vocational, technical, and technology teachers in today's classrooms have multiple responsibilities that continually require more knowledge, skills, and experience than was needed in earlier years. Moreover, being an effective teacher today means having knowledge, skills, and/or experience in four areas, namely, (1) a specific skill area, (2) instructional planning, implementation, and evaluation, (3) classroom and laboratory management, and (4) occupational experience. Today's teachers will need to have competency in all of these areas and they will also need to develop skills in areas seemingly distant from their primary duty of teaching.

Thus, vocational, technical, and technology teachers will be increasingly responsible for their own professional development not only on what best fits a busy schedule but also what fits their development needs (Adams, et al., 2007).

The succeeding tables describe the 21st century skills of the technology instructor-respondents according to each of the four macro skills.

Information, media, and technology skills. Table 6 shows the respondents' information, media, and technology skills as regards visual and information literacies, media literacy, multicultural literacy, and global awareness.

As to the visual and information literacies, all indicators were "very good", with the "the ability to incorporate selected information into one's knowledge base", obtaining the highest weighted mean at 4.30, followed by the "The ability to decipher, interpret, detect patterns, and communicate using imagery from digital media and user interface from the Internet", with a weighted mean of 4.19. On the whole, the technology instructors' visual and information literacies were "very good" with a weighted mean of 4.08.

As regards media literacy, the technology instructors' "ability to understand ethical issues surrounding the production of and use of various media forms and critique the inclusion or exclusion of opinions or factual information in media reports" obtained the highest weighted mean at 4.26,

Table 6

Information, Media, and Technology Skills of the Respondents

Information, Media and Technology Skills	Weighted Mean	Interpretation
A. Visual and Information Literacies	**4.08**	**VG**
1. The ability to recognize when information is needed.	3.98	VG
2. The ability to locate, evaluate, and use effectively the needed information.	4.06	VG
3. The ability to incorporate selected information into one's knowledge base.	4.30	VG
4. The ability to understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.	3.87	VG
5. The ability to decipher, interpret, detect patterns, and communicate using imagery from digital media and user interface from the Internet.	4.19	VG
B. Media Literacy	**4.04**	**VG**
1. The ability to access, understand, and analyze media and media messages.	3.81	VG
2. The ability to understand media bias and the ways in which media influences beliefs and behaviors.	4.09	VG
3. The ability to understand ethical issues surrounding the production of and use of various media forms and critique the inclusion or exclusion of opinions or factual information in media reports.	4.26	VG
4. The ability of individuals to effectively create and deliver media products.	4.15	VG
5. The ability to critically evaluate product representations in a variety of media.	3.91	VG
C. Multicultural Literacy	**3.86**	**VG**
1. The ability to produce and share content in new ways and in real-time.	3.85	VG
2. The possession of knowledge that helps people make sound, informed financial decisions.	4.00	VG

Table 6 continued

Information, Media and Technology Skills	Weighted Mean	Interpretation
3. The ability to access and use high quality information to make health-related decisions.	3.70	VG
4. The ability to understand and discuss both man-made and natural environmental issues and propose or debate alternative solutions to these problems.	3.79	VG
5. The ability to stay informed and understand governmental processes, participate in civic life, and recognize the local and global implications of civic decisions.	3.96	VG
D. Global Awareness	**3.96**	**VG**
1. The ability to learn from and work collaboratively with individuals from diverse cultures, religions, ideologies, and lifestyles in an environment of openness and mutual respect.	4.11	VG
2. The ability to understand and engage with global issues and diverse learning communities.	4.00	VG
3. The ability of individuals to work with the interest of the larger community in mind, to inspire others by example, and to capitalize on the strengths of others to achieve a common goal globally.	4.00	VG
4. The ability to understand and embrace cultural and social differences and using those differences to develop new ideas and new solutions to problems.	3.81	VG
5. The ability to understand social issues in a boundary-less society.	3.87	VG
Grand Total	**79.7**	
Grand Mean	**3.99**	**VG**

Legend:
4.51-5.00 – Excellent (E)
3.51-4.50 - Very Good (VG)
2.51-3.50 – Good (G)
1.51-2.50 – Fair (F)
1.00-1.50 – Poor (P)

followed by the "ability of individuals to effectively create and deliver media products", with a weighted mean of 4.15. As a whole, the technology instructors' media literacy was "very good" with an obtained mean of 4.04.

Among the indicators of multicultural literacy, the technology instructors' "possession of knowledge that helps people make sound, informed financial decisions", with an obtained weighted mean of 4.00, followed by their "ability to stay informed and understand governmental processes, participate in civic life, and recognize the local and global implications of civic decisions", with a weighted mean of 3.96. As a whole, the multicultural literacy of the technology instructors were "very good" with a weighted mean of 3.86.

Finally, global awareness obtained a weighted mean of 3.96, interpreted as "very good". Among the indicators in this aspect, the "ability to learn from and work collaboratively with individuals from diverse cultures, religions, ideologies, and lifestyles in an environment of openness and mutual respect", obtained the highest weighted mean of 4.11, followed by "the ability to understand and engage with global issues and diverse learning communities", and "the ability of individuals to work with the interest of the larger community in mind, to inspire others by example, and to capitalize on the strengths of others to achieve a common goal globally" - both with weighted mean of 4.00.

The information, media, and technology skills obtained a weighted mean of 3.99, interpreted as "very good" which implied that the technology teachers of SSU-CIT are adept at accessing the abundance of information, rapid changes in

technology tools, and in collaborating, and making individual contributions to the technology and media-suffused environment.

Learning and innovation skills. Table 7 presents the learning and innovation skills of the technology instructors.

Table 7 shows that of the three micro skills under learning and innovation skills, only creativity and curiosity posted the highest weighted mean at 3.86, interpreted as "very good". Of the creativity and curiosity skills, the technology instructors' ability to solve problems in new ways, obtained the highest weighted mean at 4.09, followed by the ability to discover new branches of knowledge and invent entirely new industries, with a weighted mean of 3.85.

Under the critical and problem solving skills, the ability of individuals to a) reason effectively, b) ask pointed questions and solve problems, c) analyze and evaluate alternative points of view, and d) reflect critically on decisions and processes given the availability of advanced technologies for accessing, manipulating, creating, analyzing, managing, storing, and communicating information obtained the highest weighted mean at 3.55, interpreted as "very good", followed by "the ability to properly tell the difference among criticism, praise, and feedback and reacting appropriately", with a weighted mean of 3.49, interpreted as "good". On the whole, the critical and problem solving skills of the technology instructors are "good" considering the weighted mean posted at 3.42.

Table 7

Learning and Innovation Skills of the Respondents

Learning and Innovation Skills	Weighted Mean	Interpretation
A. Creativity and Curiosity	**3.86**	**VG**
1. The ability to continuously innovate new services, better processes, and improved products for the world's global economy.	3.79	VG
2. The ability to solve problems in new ways.	4.09	VG
3. The ability to invent new technologies (like bio- and nanotechnology) or create the next application of existing technologies (like efficient and affordable electric cars and solar panels).	3.79	VG
4. The ability to discover new branches of knowledge and invent entirely new industries.	3.85	VG
5. The ability to encourage questioning, openness to new ideas, and learning from mistakes and failures.	3.81	VG
B. Critical and Problem-Solving Skills	**3.42**	**G**
1. The ability to use knowledge, facts, and data to effectively solve problems.	3.21	G
2. The ability to develop a well thought out solution within a reasonable time frame.	3.45	G
3. The ability to properly tell the difference among criticism, praise, and feedback and reacting appropriately.	3.49	G
4. The ability to offer insight and fresh perspective into better and more efficient ways of doing things.	3.40	G
5. The ability of individuals to a) reason effectively, b) ask pointed questions and solve problems, c) analyze and evaluate alternative points of view, and d) reflect critically on decisions and processes given the availability of advanced technologies for accessing, manipulating, creating, analyzing, managing, storing, and communicating information.	3.55	VG

Table 7 continued

Learning and Innovation Skills	Weighted Mean	Interpretation
C. Risk Taking	**3.39**	**G**
1. The confidence to volunteer in helping with an important project or task, even if the type of work is unfamiliar.	3.40	G
2. The ability to step up and gain the opportunity to learn, grow, and build new skills.	3.51	VG
3. The ability to venture into the unknown, where the possibilities and probabilities cannot be determined to an exact degree.	3.49	G
4. The ability to practice the art of making quick choices and adapting in a low-impact environment.	3.34	G
5. The ability to participate in activities that build similar skills, even if they seem unrelated.	3.19	G
Grand Total	**53.36**	
Grand Mean	**3.56**	**VG**

Legend:
4.51-**5.00 – Excellent (E)**
3.51-4.50 - Very Good (VG)
2.51-3.50 – Good (G)
1.51-2.50 – Fair (F)
1.00-1.50 – Poor (P)

Lastly, the risk taking skills of the technology instructors were "good", with an obtained weighted mean of 3.39. Among the risk taking skills of the technology instructors, their "ability to step up and gain the opportunity to learn, grow, and build new skills", obtained the highest weighted mean at 3.51, interpreted as "very good", followed by their "ability to venture into the unknown, where the possibilities and probabilities cannot be determined to an exact degree", with the obtained weighted mean of 3.49, interpreted as "good".

As a whole, the technology instructors of SSU-CIT possess learning and innovation skills as shown by the weighted mean at 3.56, interpreted as "very good". This implied that the technology instructors have the skills that separate workers/employees who are prepared for increasingly complex life and work environments in the 21st century. They are workers whose skills focused on creativity, critical thinking, and communication and collaboration (Partnership for 21st Century Skills http://www.21stcenturyskills.org/).

Communication skills. Table 8 presents the communication skills of the technology instructors of SSU-CIT.

Only one indicator of communication skills of the technology instructors was perceived as "very good". This was "The ability to demonstrate the ability to work effectively and respectfully with diverse teams", with an obtained weighted mean of 3.53. The over-all mean for communication skills of the technology instructors was 3.38, interpreted as "good". This meant that the technology instructors of SSU-CIT have the ability to articulate thoughts and ideas clearly and effectively through speaking and writing, work effectively with diverse teams, exercise flexibility and willingness to make necessary compromises to accomplish a common goal, and assume shared responsibility for collaborative work (Partnership for 21st Century Skills http://www.21stcenturyskills.org/).

Table 8

Communication Skills of Respondents

Communication Skills	Weighted Mean	Interpretation
1. The ability of individuals to communicate clearly, using oral, written, and non-verbal languages.	3.38	G
2. The ability to listen effectively to decipher meaning, including knowledge, values, attitudes and intentions.	3.49	G
3. The ability to demonstrate the ability to work effectively and respectfully with diverse teams.	3.53	VG
4. The ability to assume shared responsibility for collaborative work, and value individual contributions made by each team member.	3.23	G
5. The ability to use communication for a variety of purposes [e.g., to inform, instruct, motivate and persuade].	3.26	G
Grand Total	**16.89**	
Grand Mean	**3.38**	**G**

Legend:
4.51-5.00 – Excellent (E)
3.51-4.00 - Very Good (VG)
2.51-3.50 – Good (G)
1.51-2.50 – Fair (F)
1.00-1.50 – Poor (P)

Life and career skills. Table 9 shows the respondents' life and career skills as regards flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility.

Table 9

Life and Career Skills of the Respondents

Life and Career Skills	Weighted Mean	Interpretation	
A. Flexibility and Adaptability	**3.48**		**G**
1. The ability to adapt quickly to new ways of communicating, learning, working, and living.	3.26	G	
2. The ability to organize work into well-defined projects carried out by global project teams on tight time schedules with limited resources.	3.40	G	
3. The ability to understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments.	3.57	VG	
4. The ability to deal positively with praise, setbacks and criticism.	3.62	VG	
5. The ability to work effectively in a climate of ambiguity and changing priorities.	3.53	VG	
B. Initiative and Self-Direction	**3.28**		**G**
1. The ability to use initiative to get things done.	3.57	VG	
2. The ability to be highly self-reliant in everyday work.	3.72	VG	
3. The ability to monitor, define, prioritize and complete tasks without direct oversight.	3.13	G	
4. The ability to go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise.	2.96	G	
5. The ability to balance tactical (short-term) and strategic (long-term) goals.	3.02	G	
C. Social and Cross Cultural Skills	**3.18**		**G**
1. The ability to work well with colleagues,	3.13	G	
2. The ability to understand and embrace cultural and social differences and use those differences to develop new ideas and new solutions to problems.	3.15	G	

Table 9 continued

Life and Career Skills	Weighted Mean	Interpretation	
3. The ability to interact effectively with others, conduct themselves in a respectful and professional manner.	3.15	G	
4. The ability to respond open-mindedly to different ideas and values.	3.17	G	
5. The ability to work effectively and creatively with team members.	3.32	G	
D. Productivity and Accountability	**3.29**		**G**
1. The ability to manage projects.	3.21	G	
2. The ability to prioritize, plan, manage work and produce results.	3.30	G	
3. The ability to work positively and ethically and be accountable for results.	3.00	G	
4. The ability to multitask.	3.40	G	
5. The ability to use time well.	3.51	VG	
E. Leadership and Responsibility	**3.09**		**G**
1. The ability of individuals to work with the interest of the larger community in mind.	3.06	G	
2. The ability to capitalize on the strengths of others to achieve a common goal.	2.98	G	
3. The ability to take on roles that play to individual strengths, everyone contributing to a creative outcome and celebrating the results.	3.00	G	
4. The ability to demonstrate integrity and ethical behavior in using influence and power.	2.70	G	
5. The ability to inspire others to reach their very best via example and selflessness.	3.70	VG	
Grand Total	**81.57**	**-**	
Grand Mean	**3.26**	**G**	

Legend:
4.51-**5.00 – Excellent (E)**
3.51-4.50 - Very Good (VG)
2.51-3.50 – Good (G)
1.51-2.50 – Fair (F)
1.00-1.50 – Poor (P)

Three of the indicators under flexibility and adaptability were perceived as "very good". Of these three, "the ability to deal positively with praise, setbacks and criticism", obtained the highest weighted mean at 3.62, followed by "the ability to understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments", with a weighted mean of 3.57, and "the ability to work effectively in a climate of ambiguity and changing priorities", with a weighted mean of 3.53. As a whole, the technology instructors perceived their flexibility and adaptability as "good", as shown by the weighted mean of 3.48.

As to initiative and self-direction, two indicators were perceived as "very good", with the technology instructors' "ability to be highly self-reliant in everyday work", with a weighted mean of 3.72, obtaining the highest weighted mean, followed by "the ability to use initiative to get things done", with a weighted mean of 3.57. As a whole, the technology instructors perceived their initiative and self-direction as "good", as shown by the weighted mean posted at 3.28.

All five indicators of social and cross cultural skills were perceived "good" by the technology instructors, as shown by the weighted mean posted at 3.18. Of the indicators perceived good, the technology instructors' ability to work effectively and creatively with team members obtained the highest weighted mean at 3.32, followed by the ability to respond open-mindedly to different ideas and values, with a weighted mean of 3.17.

Table 9 likewise reflects the data on the technology instructors' productivity and accountability skills. Only one indicator - the ability to use time well - obtained the highest weighted mean at 3.51, interpreted as "very good". The remaining four indicators obtained means which were interpreted as "good", with the ability to multitask, obtaining the highest weighted mean at 3.40, followed with the ability to prioritize, plan, manage work and produce results, with a weighted mean of 3.30. As a whole, the productivity and accountability skills of the technology instructors were perceived as "good", with an obtained weighted mean of 3.29.

Finally, as to leadership and responsibility, one indicator obtained the highest weighted mean at 3.70, interpreted as "very good". This was the ability to inspire others to reach their very best via example and selflessness. The remaining four indicators were perceived as "good". Of these four remaining indicators, the ability of individuals to work with the interest of the larger community in mind, with an obtained weighted mean of 3.06.

Comparison of the 21st Century Skills of the Respondents as to Their Profile

The succeeding tables and discussions show the results of the computation of the differences in the 21st century skills of the respondents when grouped according to their intelligence quotient (IQ), emotional intelligence quotient (EQ), personality, and multiple intelligences (MI).

Differences in 21st Century skills of the respondents according to their IQ. Table 10 shows the results of the computation of ANOVA to determine the differences in the 21st century skills of the technology instructors according to their intelligence quotient (IQ).

Along information, media, and technology skills, Table 10 shows that the mean of the technology instructors with average IQ was posted at 4.00 while those with below average IQ was 3.95. Although the mean ratings have the same descriptive interpretation of "very good", their nominal values differ. As also gleaned from the table, the computed F-value was 0.26 which is lesser than the critical F-value of 4.06.

Thus, at $\alpha = .05$, df = 1 and 45, the hypothesis which states that "there are no significant differences in the information, media, and technology skills of the respondents according to their IQ" was accepted. This therefore meant that the technology instructors have comparatively the same skills in accessing information, media, and other technological developments in the 21st century regardless of their intelligence quotient. Stating further, it is thus safe to assume that those with average IQ and those with below average IQ have comparatively the same information, media, and technology skills.

Along learning and innovative skills, Table 10 shows that the mean rating of the technology instructors with average IQ was 3.6 whereas for the technology instructors with below average IQ was 3.42. From these results it is clear that the

Table 10

Differences in the 21st Century Skills of the Technology Instructor-Respondents according to their IQ

IQ Result Summary			ANOVA RESULT (IQ - Otis Lennon Mental Ability Test)								
Groups	Ave.	Below Ave.	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Counts	(N=12)	(N=35)									
			I. Information, Media & Tech. Skills	0.02	0.08	1	45	0.26	4.06	NS	Accept H_o
Mean	4.00	3.95									
Interpret	VG	VG									
			II. Learning & Innovation Skills	0.29	0.27	1	45	1.09	4.06	NS	Accept H_o
Mean	3.6	3.42									
Interpret	VG	G									
			III. Communicati on Skills	0.03	0.75	1	45	0.04	4.06	NS	Accept H_o
Mean	3.39	3.33									
Interpret	G	G									
			IV. Life & Career Skills	0.08	0.14	1	45	0.61	4.06	NS	Accept H_o
Mean	3.26	3.36									
Interpret	G	G									
Mean	3.56	3.52	Overall	0.02	0.08	1	45	0.25	4.06	NS	Accept H_o
Interpret	VG	VG									

mean ratings differed inasmuch as those with average IQ was interpreted as "very good" while those with below average IQ was "good". The result of the One-Way ANOVA for testing the significance of the mean differences for learning and innovation skills revealed a computed F-value of 1.09 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This led to the acceptance of the hypothesis that "There is no significant difference in the learning and innovation skills of the technology instructor-respondents when grouped as to their IQ". This implied further that the ability of the technology instructors to be creative, critical thinker, and communicator and collaborator is not dependent on their IQ. Regardless of the technology instructors' intellectual capacity, their ability to be creative, critical thinker, and communicator and collaborator is comparatively the same.

In addition, Table 10 shows that the mean rating along communication skills of the technology instructors with average IQ was 3.39, interpreted as "good". By contrast, the mean rating along communication skills of the technology instructors with below average IQ was 3.33, with a descriptive interpretation of "good". The result of the One-Way ANOVA for testing the significance of the mean difference along communication skills yielded a computed F-value of 0.04 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This means that the mean difference is not significant thereby accepting the null hypothesis which states that "There are no significant differences in the communication skills of the technology instructor-respondents

according to their intelligence quotient". This implied that the technology instructors' ability to articulate thoughts and ideas clearly and effectively through speaking and writing, to work effectively with diverse teams, to exercise flexibility and willingness to make necessary compromises to accomplish a common goal, and to assume shared responsibility for collaborative work is comparatively the same regardless of their IQ.

For life and career skills, it is presented in Table 10 that the mean rating of the technology instructors with average IQ was posted at 3.26 while the mean rating of the technology instructors with below average IQ was posted at 3.36. Both groups had mean ratings with descriptive interpretations of "good". The result of the One-Way ANOVA yielded a computed F-value of 0.61 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This means that the mean difference is not significant and thus, the null hypothesis which states that "There are no significant differences in the life and career skills of the technology instructor-respondents when grouped as to IQ" is accepted. The result implied that the technology instructors did not differ in their life and career skills.

As a whole, the mean rating of the technology instructors with average IQ was 3.56, with a descriptive interpretation of "very good" while those with below average IQ, the mean rating was 3.52, with the descriptive interpretation of "very good". The result of the ANOVA revealed a computed F-value of 0.25 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This

means that the mean difference is not significant. This then led to the acceptance of the null hypothesis which states that "There are no significant differences in the 21st century skills of the technology instructor-respondents when grouped as to IQ". This meant that the technology instructors, regardless of their intelligence quotients, have comparatively the same 21st century skills along information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills.

The results further affirm the theory that there are indeed two components of intelligence. The first component was g or general intelligence while the second component influences abilities on a particular task. Inasmuch as the technology instructors have comparatively the same information, media, and technology skills, they are thus, on the very least, using the first component which, according to Spearman (2005), is more or less a general intelligence. These results further emphasize that the technology instructors of SSU-CIT must possess all the 21st century skills for effective teaching-learning in all the degree programs offered.

Differences in 21st Century skills of the respondents according to their EQ. Table 11 to Table 18 present the results of the differences in the 21st century skills of the technology instructor-respondents when grouped according to their emotional intelligence quotient (EQ).

Along information, media, and technology skills, Table 11 shows that the

Table 10

Differences in the 21st Century Skills of the Technology Instructor-Respondents according to their IQ

IQ Result Summary			ANOVA RESULT (IQ - Otis Lennon Mental Ability Test)								
Groups	Ave.	Below Ave.	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Counts	(N=12)	(N=35)									
			I. Information, Media & Tech. Skills	0.02	0.08	1	45	0.26	4.06	NS	Accept H_o
Mean	4.00	3.95									
Interpret	VG	VG									
			II. Learning & Innovation Skills	0.29	0.27	1	45	1.09	4.06	NS	Accept H_o
Mean	3.6	3.42									
Interpret	VG	G									
			III. Communication Skills	0.03	0.75	1	45	0.04	4.06	NS	Accept H_o
Mean	3.39	3.33									
Interpret	G	G									
			IV. Life & Career Skills	0.08	0.14	1	45	0.61	4.06	NS	Accept H_o
Mean	3.26	3.36									
Interpret	G	G									
Mean	3.56	3.52	Overall	0.02	0.08	1	45	0.25	4.06	NS	Accept H_o
Interpret	VG	VG									

mean rating of the technology instructors with average EQ was posted at 3.06, with a descriptive interpretation of "good", those with low EQ had a mean of 3.99, with very low EQ had a mean of 4.00, and those with markedly low EQ had a mean of 3.95, all three means had a descriptive interpretation of "very good". As reflected in the result of the One-way ANOVA for comparing the information, media, and technology skills of the technology instructor-respondents when grouped according to their intrapersonal skills, the hypothesis which states that "there are no significant differences in the information, media, and technology skills of the technology instructors when grouped with respect to their intrapersonal EQ" is accepted. This is because the computed F-value is 0.22, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Stated otherwise, technology instructors with average, low, very low, and markedly low intrapersonal skills have the same information, media, and technology skills.

Table 11 likewise shows the results of the computation of One-Way ANOVA to determine the significance of the differences of the technology instructors' learning and innovation skills when grouped according to their EQ. As reflected in the table, the mean rating for the technology instructors with average EQ was 3.53, with a descriptive interpretation of "very good". In addition, the technology teachers with low EQ had a mean rating of 3.66, interpreted as "very good", those with very low EQ had a mean rating of 3.38,

interpreted as "good", and those with markedly low EQ had a mean rating of 3.58, interpreted as "very good". The result of the One-Way ANOVA for testing the obtained mean differences along learning and innovation skills revealed a computed F-value of 0.58, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Hence, the null hypothesis that "there are no significant differences in the learning and innovation skills of the respondents when grouped with respect to their intrapersonal EQ" is accepted. Regardless of the intrapersonal characteristics of the technology instructors - that is, whether or not they are effectively functioning or needing improvement in controlling their own feelings, they exhibit comparatively the same creativity and curiosity, critical and problem solving skills, and risk taking skills.

As to the obtained mean in their communication skills, Table 11 shows that the technology instructors with average EQ had a mean rating of 3.48, and those with low EQ had a mean rating of 3.01, both with descriptive interpretation of "good". By contrast, the technology instructors with very low EQ had a mean rating of 3.54, and those with markedly low EQ had a mean rating of 3.54, both with a descriptive interpretation of "very good". The One-Way ANOVA for testing if the obtained mean differences in communication skills of the technology instructors when grouped according to intrapersonal EQ is significant, the computed F-value is 1.23, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean

difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the communication skills of the respondents grouped with respect to their intrapersonal EQ" is therefore accepted. This result means that technology instructors with average, low, very low, and markedly low intrapersonal EQ have comparatively the same communication skills. Therefore, a technology instructor who is effective in handling his emotions and in expressing himself has the same communication skills as the technology instructor who needs improvement in managing his emotions and in expressing himself.

Along life and career skills, Table 11 shows that the mean rating for the technology instructors with average EQ was posted at 3.38, for those with low EQ was 3.27, for those with very low EQ was 3.24, and for those with markedly EQ was 3.31 - all mean ratings with descriptive interpretation of "good". It is clear that the mean interpretations of their life and career skills do not differ, but they differ as to the nominal value of the obtained mean for the different EQ ratings. The result of the test to determine if the mean differences in the respondents' life and career skills is significant was a computed F-value of 0.19, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the life and career skills of the respondents grouped with respect to their intrapersonal EQ" is accepted. This meant further that whether the

technology instructors are average, low, very low, or markedly low in their intrapersonal EQ or in their ability to express their feelings, their life and career skills are comparatively the same.

For the overall 21st century skills of the technology instructor-respondents, those with average EQ posted a mean rating of 3.61, those with low EQ with a mean rating of 3.48, those with very low EQ with a mean rating of 3.54, and those with markedly low EQ with a mean rating of 3.60 - all with descriptive interpretation of "very good". The result of the One-Way ANOVA for testing the obtained mean differences of the respondents' 21st century skills revealed a computed F-value of 0.47, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the overall 21st century skills of the respondents grouped with respect to their intrapersonal EQ" is accepted. This means further that the technology instructors with average, low, very low, and markedly low intrapersonal EQ have comparatively the same 21st century skills.

Table 12 presents the results of the computations made to determine the differences in the 21st century skills of the technology instructors grouped with respect to their interpersonal EQ.

Along information, media, and technology skills, the obtained mean of the technology instructors with average EQ was posted at 4.03, those with low EQ

Table 12

Differences in the 21st Century Skills of the Technology Instructors Grouped according to their Interpersonal Emotional Intelligence

Emotional Quotient (BarOn EQ-i) Summary					ANOVA RESULT (B - Interpersonal Scale)								
Groups Counts	Ave (N=9)	Low (N=18)	VL (N= 11)	M-Low (N=9)	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Mean	4.03	4	3.99	3.89	I. Information, Media & Tech. Skills	0.03	0.08	3	43	0.42	2.82	NS	Accept H_o
Interpret	VG	VG	VG	VG									
Mean	3.94	3.42	3.53	3.47	II. Learning & Innovation Skills	0.57	0.25	3	43	2.29	2.82	NS	Accept H_o
Interpret	VG	G	VG	G									
Mean	3.69	3.37	3.35	3.13	III. Communication Skills	0.10	0.14	3	43	0.63	2.82	NS	Accept H_o
Interpret	VG	G	G	G									
Mean	3.29	3.36	3.29	3.14	IV. Life & Career Skills	0.10	0.14	3	43	0.73	2.82	NS	Accept H_o
Interpret	G	G	G	G									
Mean	3.74	3.54	3.54	3.41	Overall	0.17	0.08	3	43	2.21	2.82	NS	Accept H_o
Interpret	VG	VG	VG	G									

was posted at 4.00, those with very low EQ posted at 3.99, and those with markedly low EQ was 3.89 - all four mean with descriptive interpretation of "very good". It is clear that the interpretations of the mean obtained for the information, media, and technology skills do not differ because they are all "very good", but the nominal values of the obtained mean differ. The result of the One-way ANOVA for comparing the information, media, and technology skills of the technology instructors revealed a computed F-value of 0.42, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the information, media, and technology skills of the respondents grouped with respect to their interpersonal EQ" is accepted. This means that the technology instructors have comparatively the same information, media, and technology skills regardless of their interpersonal EQ or their ability to be aware of and understand how others feel, to identify with one's social group and cooperate with others, and to establish mutually satisfying relationships and relate well with others.

As to the learning and innovation skills of the technology instructors, the mean for the average interpersonal EQ was 3.94, for the low interpersonal EQ was 3.42, for the very low interpersonal EQ was 3.53, and for the markedly low interpersonal EQ was 3.47. The result of the One-way ANOVA for comparing the learning and innovation skills of the technology instructor-respondents when

grouped according to their interpersonal EQ yielded a computed F-value of 2.29, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. This led to the acceptance of the null hypothesis which states that "there are no significant differences in the learning and innovation skills of the respondents grouped with respect to their interpersonal EQ". This meant further that the technology instructors' ability to be creative and curious, to become critical problem solvers, and risk takers is not dependent on their interpersonal emotional intelligence. A technology instructor who has average interpersonal EQ has a comparatively the same learning and innovation skills as an instructor who has markedly low interpersonal EQ.

Along communication skills, the obtained mean rating for the technology instructors with average interpersonal EQ was posted at 3.69, with a descriptive interpretation of "very good". By contrast, technology instructors with low, very low, and markedly low interpersonal EQ posted mean ratings of 3.37, 3.35, and 3.13, respectively, indicating a descriptive interpretation of "good". The result of the One-way ANOVA for comparing the communication skills of the respondents grouping them as to their interpersonal EQ yielded a computed F-value of 0.63, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Therefore, the null hypothesis which states that there are no significant differences in the communication skills of the technology

instructor-respondents grouped with respect to their interpersonal EQ" is accepted. The results reflect that the technology instructors did not differ in their communication skills taking into consideration their interpersonal EQ. Stated further, holding other things equal, the ability of the technology instructors to articulate thoughts and ideas clearly and effectively through speaking and writing, to work effectively with diverse teams, to exercise flexibility and willingness to make necessary compromises to accomplish a common goal, and to assume shared responsibility for collaborative work does not depend on their interpersonal EQ.

Respondents' 21st century skills along life and career skills registered a mean rating of 3.29 for those with average interpersonal EQ, 3.36 for those with low interpersonal EQ, 3.29 for those with very low interpersonal EQ, and 3.14 for those with markedly interpersonal EQ - all with descriptive interpretation of "good". It is clear that the mean interpretations do not differ for the formed groups but they differ as to the nominal value of the obtained mean. The result of the One-way ANOVA for comparing the life and career skills of the respondents when grouped according to interpersonal EQ revealed a computed F-value of 0.73, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Therefore, the null hypothesis is accepted. There are no significant differences in the life and career skills of the respondents grouped with respect to their interpersonal EQ.

For the overall 21st century skills of the technology instructor-respondents grouped as to their interpersonal EQ, the obtained mean for those with average interpersonal EQ was 3.74, for those with low interpersonal EQ was 3.54, for those with very low interpersonal EQ was 3.54 - all three had descriptive interpretation of "very good". The technology instructor-respondents with markedly low interpersonal EQ registered an obtained mean of 3.41, interpreted as "good". The computed F-value was 2.21, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis of no significant differences in the 21st century skills of the technology instructors grouped with respect to their interpersonal EQ is accepted. This means that regardless of the interpersonal EQ of the technology instructors they have essentially the same 21st century skills.

Over-all, the technology instructors who are effectively functioning in being aware and understanding how others feel, in cooperating with others, and in mutually satisfying relationships and relating well with others were very good in their information, media, and technology skills, learning and innovation skills, and communication skills. Those who needs improving in interpersonal relations were "very good" in information, media, and technology skills, while only "good" in learning and innovation skills, communication skills, and life and career skills. On the other hand, technology instructors who extremely need improvement in interpersonal relations were "very good" along information,

media, and technology skills, and learning and innovation skills, and were "good" in communication skills, and life and career skills. Finally, the respondents' who have markedly low interpersonal EQ were "very good" in information, media, and technology skills, and "good" in learning and innovation skills, communication skills, and life and career skills.

Table 13 shows the differences in the 21st century skills of the technology instructors grouped with respect to their stress management EQ.

As reflected in Table 13, the results of the One-Way ANOVA for comparing the 21st century skills along information, media, and technology skills, learning and innovation skills, and communication skills of the technology instructors grouped according to their emotional intelligence quotient (EQ) along the stress management revealed computed F-values lesser than the critical F-value. These led to the acceptance of the hypothesis which states that "there are no significant differences in the information, media, and technology skills, learning and innovation skills, and communication skills of the technology instructors when grouped according to their emotional intelligence along stress management".

The acceptance of the hypothesis led to the conclusion that regardless of how the technology instructors effectively and constructively manage their stresses and impulses do not impact on their possession of the 21st century skills along information, media, and technology skills, learning and innovation skills, and communication skills.

Table 13

Differences in 21st Century Skills of the Technology Instructors when grouped according to their Emotional Intelligences along Composite Area of Stress Management

Emotional Quotient (BarOn EQ-i) Summary					ANOVA RESULT (C - Stress Management Scale)								
Groups Count	Ave (N=1)	Low (N=6)	VL (N= 13)	M-Low (N=27)	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Mean	3.85	3.96	3.89	4.04	I. Information, Media & Tech. Skills	0.08	0.07	3	43	0.95	2.82	NS	Accept H_o
Interpret	VG	VG	VG	VG									
Mean	3.33	3.48	3.46	3.63	II. Learning & Innovation Skills	0.28	0.12	3	43	0.41	2.82	NS	Accept H_o
Interpret	G	G	G	VG									
Mean	3.40	2.97	3.54	3.39	III. Communication Skills	0.75	0.45	3	43	0.60	2.82	NS	Accept H_o
Interpret	G	G	VG	G									
Mean	3.92	3.25	3.08	3.37	IV. Life & Career Skills	0.12	0.38	3	43	3.97	2.82	S	Reject H_o
Interpret	VG	G	G	G									
Mean	3.63	3.41	3.49	3.61	Overall	0.08	0.08	3	43	1.04	2.82	NS	Accept H_o
Interpret	VG	G	G	VG									

However, the case for life and career skills was different. As to the mean rating of the respondents with average stress management skill, it was described as "very good" with the nominal value posted at 3.92.

The technology instructors with low stress management skill posted a mean rating of 3.25, those with very low stress management skill posted a mean rating of 3.08, and those with markedly low stress management skill posted a mean rating of 3.37. All these latter nominal values have descriptive interpretation of "good". The result of the One-Way ANOVA for determining whether there are significant differences in the life and career skills of the technology instructors when grouped as to their stress management EQ yielded a significant result. The computed F-value is 3.97 which is greater than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is significant. As a result, the null hypothesis which states that "there are no significant differences in the life and career skills of the technology instructor-respondents according to their emotional intelligence along stress management" was rejected. On this note, the technology instructors differ in their life and career skills when grouped as to their stress management EQ. This imply that the technology instructors with average EQ have different life and career skills possessed than those technology instructors with low EQ. In like manner, technology instructors with very low EQ have different life and career skills possessed than those with markedly low EQ.

Testing further the significance of the differences in life and career skills of the technology instructors grouped as to stress management EQ. Table 14 shows the result of the Scheffe's test to determine which pair of means yielded significant variations. Six pairs of means were compared to determine where the significant difference lies.

Table 14

Scheffe's Test for the Significance of the Differences in the Life and Career Skills of the Respondents with Respect to their Stress Management EQ

Groups Compared	Mean Difference	Scheffe's Value		Evaluation
		Computed	Critical	
Average vs. Low	0.67	4.79	2.82	Significant
vs. Very Low	0.55	4.26	2.82	Significant
vs. Markedly Low	0.84	6.75	2.82	Significant
Low vs. Very Low	-0.12	-4.11	2.82	Significant
vs. Markedly Low	0.17	6.95	2.82	Significant
Very Low vs. Markedly Low	-0.29	-21.21	2.82	Significant

For Pair 1-Average vs. Low stress management EQ, the difference between the sample means is 0.67. The computed F-value is 4.79, which is greater than the critical F=2.82 interpreted as significant. Therefore, there are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. The results further revealed that

technology instructors with average stress management EQ have better life and career skills possessed.

For Pair 2-Average vs. Very Low stress management EQ, the difference between the sample means is equal to 0.55, the computed F-value is 4.26, which is greater than the critical F= 2.82 interpreted as significant. Therefore, there are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. The results, in turn, reveal that technology instructors with average stress management EQ have better life and career skills possessed.

For Pair 3-Average vs. Markedly Low stress management EQ, the difference between the sample means is 0.84 with a computed F-value is 6.75, which is greater than the critical F= 2.82 interpreted as significant. Therefore, there are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. Technology instructors with average stress management EQ possess better life and career skills than those with markedly low stress management EQ.

For Pair 4-Low vs. Very Low stress management EQ, the difference between the sample means is -0.12, the computed F-value is -4.11, the absolute value of which is greater than the critical F= 2.82 interpreted as significant. Therefore, there are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. From the results it is clear that the technology teachers with low stress management EQ

possess better life and career skills than those with very low stress management EQ.

For Pair 5-Low vs. Markedly Low stress management EQ, the difference between the sample means is equal to 0.17, the computed F-value is 6.95, which is greater than the critical F= 2.82 interpreted as significant. Therefore, there are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. The technology teachers with markedly low stress management EQ possess better life and career skills than those with low stress management EQ.

For Pair 6- Very Low vs. Markedly Low stress management EQ, the difference between the sample means is equal to -0.29, the computed F-value is -21.21, which is greater than the critical F= 2.82 interpreted as significant. There are significant differences in life and career skills of technology instructors grouped with respect to their stress management EQ. Better life and career skills are possessed by those technology instructors with markedly low stress management EQ than those with very low stress management EQ.

Along this light, technology teachers differ in their 21st century life and career skills depending on their level of stress management EQ. Hence, in the case of a technology teacher with average stress management EQ - which means that he is effectively functioning in terms of stress tolerance and impulse control, he has a better reaction to a change which may be introduced in the department

than a technology teacher with a low stress management EQ – which means that he needs improvement in stress tolerance and impulse control.

More particularly, if a change is introduced in the organization, a technology teacher who has higher level of tolerance to stress and is more in control of his impulses, may find ways to respond to the change through motivation (initiative and direction), may be able to work in diverse teams who possess the expertise to implement the change (social and cross-cultural skill), produce output and provide way for tracking/auditing resources used for production (productivity and accountability), and take the lead to implement the said change (leadership and responsibility). Conversely, a technology teacher with lower tolerance to stress and is impulsive may just wait for the organization to make the necessary steps in the implementation of the change, may be uncomfortable in dealing with fellow employees to implement the change, may not be able to perform deliverable and does not show any remorse for it, and does not take the lead to implement the change.

The results support what Bar-on postulated that emotional intelligence is a multi-factorial array of emotional and social competencies that determine how effectively individuals relate to themselves and others and cope with daily demands and pressures. It further re-affirms that average scores on the EQ-I suggest that the respondent is effective in emotional and social functioning which means, further that that the individuals (in this case, the technology instructors) are most likely emotionally and socially intelligent. The higher the

scores, the more positive the prediction for effective functioning in meeting environmental demands and pressures - or in the development of life and career skills. On the other hand, an inability to be effective in performing well and the possible existence of emotional, social and/or behavioral problems are suggested by low scores. Significantly low scores indicate the potential for serious difficulties in coping on a daily basis, particularly in tolerating stress.

Over-all, the respondents with average stress management EQ were "very good" along information, media, and technology skills, and life and career skills while "good" in learning and innovation skills, and communication skills. The technology teachers with low stress management EQ were "very good" along information, media, and technology skills while "good" along learning and innovation skills, communication skills, and life and career skills. Further, the technology teachers with very low in EQ in terms of stress management were "very good" along information, media, and technology skills, and communication skills while "good" along learning and innovation skills, and life and career skills. Finally, the technology teachers with markedly low EQ stress management obtained "very good" along information, media, and technology skills, and learning and innovation skills while "good" along communication skills, and life and career skills.

Table 15 shows the results of the computation of the One-Way Analysis of Variance to determine the significant differences in the 21st century skills of the technology teachers when grouped according to their adaptability.

Table 15

Comparisons of the 21st Century Skills Possessed by the Technology Teacher-Respondents Grouped with respect to their Adaptability

Emotional Quotient (BarOn EQ-i) Summary							ANOVA RESULT (D - Adaptability Scale)								
Groups	VH	High	Ave	Low	VL	M-Low	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Count	(N=3)	(N=2)	(N=18)	(N=15)	(N= 4)	(N=5)									
Mean	4.10	4.08	4.02	3.92	4.2	3.78	1. Information, Media & Tech. Skills	0.11	0.07	5	41	1.45	2.44	NS	Accept H_o
Interpret	VG	VG	VG	VG	VG	VG									
Mean	3.82	4.3	3.56	3.43	3.77	3.32	2. Learning & Innovation Skills	0.41	0.25	5	41	1.59	2.44	NS	Accept H_o
Interpret	VG	VG	VG	G	VG	G									
Mean	3.4	3.2	3.5	3.17	3.15	3.8	3. Communication Skills	0.41	0.77	5	41	0.54	2.44	NS	Accept H_o
Interpret	G	G	G	G	G	VG									
Mean	3.24	3.5	3.34	3.26	3.16	3.03	4. Life & Career Skills	0.14	0.13	5	41	1.04	2.44	NS	Accept H_o
Interpret	G	G	G	G	G	G									
Mean	3.64	3.77	3.62	3.45	3.57	3.48	Overall	0.08	0.08	5	41	0.94	2.44	NS	Accept H_o
Interpret	VG	VG	VG	G	VG	G									

Seeing the results in the table, it is clear that the mean interpretation for the technology instructors with very high, high, average, low, very low, and markedly low adaptability do not differ in their information, media, and technology skills as they all obtained mean ratings descriptively rated "very good". Meanwhile, the computed F-value is 1.45, which is lesser than the critical F-value of 2.44, at $\alpha = .05$ level of significance, df = 5 and 41.

This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "There are no significant differences in the 21st century skills of the respondents along information, media, and technology skills grouped with respect to their adaptability" is accepted. This meant that the technology instructors of SSU-CIT have comparatively the same information, media, and technology skills regardless of their adaptability EQ.

Along learning and innovation skills, it is clear that the mean interpretations differ by one scale. The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.59, which is lesser than the critical F-value of 2.44, at $\alpha = .05$ level of significance, df = 5 and 41. This indicates that the mean difference between and within group is not significant. Hence, the null hypothesis which states that "There are no significant differences in the learning and innovation skills of the respondents grouped with respect to their adaptability" is accepted.

This meant that the technology instructors did not differ in their learning and innovation skills even when grouped according to their adaptability.

Only those technology instructors with markedly low adaptability had obtained mean rating which was "very good" as seen in the value posted at 3.80. All other mean ratings were described as "good". The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 0.54, which is lesser than the critical F-value of 2.44, at $\alpha = .05$ level of significance, df = 5 and 41. This indicate that the mean difference between and within group is not significant. Consequently, the null hypothesis which states that "There are no significant difference in the communication skills of the respondents grouped with respect to their adaptability" is accepted. This meant that the technology instructors of SSU-CIT have comparatively the same communication skills regardless of their adaptability.

Along life and career skills, the respondents with very high, high, average, low, very low, and markedly low adaptability obtained means equal to 3.24, 3.5, 3.34, 3.26, 3.16, and 3.03, respectively, interpreted as "good". It is clear that the mean interpretations of their 21st century skills do not differ despite slight differences in their nominal values. The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.04, which is lesser than the critical F-value of 2.44, at $\alpha = .05$ level of significance, df = 5 and 41. This indicates that the mean difference

between and within group is not significant which led to the acceptance of the null hypothesis. Therefore, regardless of the adaptability EQ of the technology instructors of SSU-CIT, their life and career skills did not significantly differ.

For the overall 21st century skills of the respondents grouped as to their adaptability, the obtained mean for the technology teachers with very high, high, average, low, very low, and markedly low adaptability are 3.64, 3.77, 3.62, and 3.57, respectively. It is clear that the mean interpretations differ for the different groups. Meanwhile, the result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 0.94, which is lesser than the critical F-value of 2.44, at $\alpha = .05$ level of significance, df = 5 and 41. This result therefore indicates that the mean difference between and within group is not significant, implying further the acceptance of the null hypothesis. Hence, there are no significant differences in the 21st century skills of the technology instructors grouped with respect to their adaptability.

To summarize the result for the within group comparison of the mean rating obtained for the 21st century skills of the respondents, those with very high, high, average, and very low adaptability, the technology instructors obtained mean ratings of "very good" along information, media, and technology skills, and learning and innovation skills, while "good" along communication skills, and life and career skills. On the other hand, the respondents with low adaptability obtained mean ratings of "very good" along information, media,

and technology skills while "good" along learning and innovation skills, communication skills, and life and career skills. The respondents with markedly low adaptability obtained mean ratings of "very good" along information, media, and technology skills, and communication skills, and "good" along learning and innovation skills, and life and career skills.

It is thus safe to say basing from the results that the technology instructors have comparably the same level of reality testing - or the ability to objectively validate one's feelings and think with external reality, flexibility - or the ability to adapt and adjust one's feelings and thinking to new situations, and problem-solving - or the ability to solve problems of a personal and interpersonal nature.

Table 16 shows the comparison of the technology instructors' 21st century skills when grouped with respect to their EQ along general mood.

Along information, media, and technology skills, the obtained mean values for the technology instructors with very high, average, low, very low, and markedly low general mood EQ are 3.88, 4.19, 3.96, 3.97, and 3.94, respectively, and interpreted as "very good". The computed F-value is 1.24, which is lesser than the critical F-value of 2.59, at $\alpha = .05$ level of significance, df = 4 and 42. This indicates that the mean difference between and within group is not significant which, in turn, led to the acceptance of the null hypothesis. Stating further, there are no significant differences in the information, media, and technology skills of the technology instructors when grouped with respect to their EQ in the General Mood Scale.

Table 16

Comparisons of the 21st Century Skills Possessed by the Technology Instructors Grouped with respect to General Mood in the EQ Scale

Emotional Quotient (BarOn EQ-i) Summary						ANOVA RESULT (E – General Mood Scale)								
Groups	VH	Ave	Low	VL	M-Low	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Count	(N=2)	(N=7)	(N=19)	(N=8)	(N=11)									
Mean	3.88	4.19	3.96	3.97	3.94	1. Information, Media & Tech. Skills	0.09	0.07	4	42	1.24	2.59	NS	Accept Ho.
Interpret	VG	VG	VG	VG	VG									
Mean	4	3.42	3.71	3.48	3.36	2. Learning & Innovation Skills	0.36	0.26	4	42	1.36	2.59	NS	Accept Ho.
Interpret	VG	G	VG	G	G									
Mean	3.4	3.89	3.37	4	3.25	3. Communication Skills	1.24	0.68	4	42	1.82	2.59	NS	Accept Ho.
Interpret	G	VG	G	VG	G									
Mean	3.88	3.15	3.3	3.25	3.28	4. Life & Career Skills	0.21	0.13	4	42	1.67	2.59	NS	Accept Ho.
Interpret	VG	G	G	G	G									
Mean	3.79	3.4	3.58	3.67	3.46	Overall	0.12	0.08	4	42	1.55	2.59	NS	Accept Ho.
Interpret	VG	G	VG	VG	G									

As to the obtained means along learning and innovation skills, it is clear that the technology instructors differ as to their descriptive interpretations. Nevertheless, the result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.36, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df = 4 and 42. This led to the acceptance of the null hypothesis which states that "There are no significant differences in the learning and innovation skills of the respondents grouped with respect to their general mood". This meant further that the technology instructors did not differ in terms of their learning and innovation skills regardless of their general mood EQ.

Along communication skills, the computed F-value is 1.82, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df = 4 and 42. This indicates that the mean difference between and within group is not significant. The null hypothesis is accepted. This meant further that the technology instructors did not differ in terms of their communication skills even when grouped according to their general mood.

Table 16 shows that along life and career skills the technology instructors obtained means for said skills which differ both in their nominal value and descriptive interpretation. However, as per the result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.67, which is lesser than the critical F-value of 2.59, at α

= .05 level of significance, df =4 and 42. Therefore, the mean difference between and within group is not significant leading to the acceptance of the null hypothesis. This meant further that regardless of the differences in the emotional intelligences along general mood of the technology instructors, their life and career skills are comparably the same.

As a whole, the respondents differ both in nominal value and descriptive interpretation as regards their 21st century skills when grouped according to their general mood. The computed F-value is 1.55, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df = 4 and 42, indicate that the mean difference between and within group is not significant. The null hypothesis which states that "There are no significant differences in the 21st century skills of the respondents grouped with respect to their EQ in the General Mood Scale" is accepted.

To summarize the result for the within group comparison of the mean rating obtained for the 21st century skills of the respondents, it is revealed that for the very high in general mood obtained mean ratings of "very good" along information, media, and technology skills, learning and innovation skills, and life and career skills, while "good" along communication skills. The respondents' 21st century skills for the average in general mood obtained mean ratings of "very good" along information, media, and technology skills, and communication skills while "good" along learning and innovation skills, and life and career skills.

In addition, the respondents' 21st century skills for the low in general mood obtained mean ratings of "very good" along information, media, and technology skills, and learning and innovation skills; and "good" along communication skills, and life and career skills. Those with very low general mood obtained mean ratings of "very good" along information, media, and technology skills, and communication skills; and "good" along learning and innovation skills, and life and career skills. Finally, the respondents with markedly low general mood obtained mean ratings of "very good" along information, media, and technology skills; and "good" along learning and innovation skills, communication skills, and life and career skills.

The implication of the results in Table 16 is that the technology instructors of SSU-CIT possess comparably the same 21st century skills regardless of how they feel towards their work, in particular, and their life, in general.

Table 17 shows whether there are differences in the 21st century skills of the technology instructors when grouped as to their total emotional intelligence.

Based on the computed F-values for information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills are 2.63, 0.28, 0.20, and 0.52, respectively, which values are lesser than the critical F-value of 3.21. These values imply a not significant result which mean further that the hypothesis which states that "There are no significant differences in the 21st century skills of the technology instructors when grouped with respect to their total emotional quotient or total EQ".

Table 17

Comparisons of the 21st Century Skills Possessed by the Technology Teacher-Respondents Grouped with respect to Total EQ

Emotional Quotient (BarOn EQ-i) Summary				ANOVA RESULT (F – Total EQ Scale)								
Groups	Low	V-Low	M Low	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Count	(N=8)	(N=17)	(N=22)									
Mean	4.16	3.9	3.99	1. Information, Media & Tech. Skills	0.19	0.07	2	44	2.63	3.21	NS	Accept H_o
Interpret	VG	VG	VG									
Mean	3.55	3.63	3.5	2. Learning & Innovation Skills	0.08	0.28	2	44	0.28	3.21	NS	Accept H_o
Interpret	VG	VG	G									
Mean	3.2	3.42	3.41	3. Communication Skills	0.15	0.76	2	44	0.2	3.21	NS	Accept H_o
Interpret	G	G	G									
Mean	3.41	3.26	3.27	4. Life & Career Skills	0.07	0.14	2	44	0.52	3.21	NS	Accept H_o
Interpret	G	G	G									
Mean	3.58	3.55	3.54	Overall	0.00	0.09	2	44	0.05	3.21	NS	Accept H_o
Interpret	VG	VG	VG									

These result reflect that the technology instructors have comparably the same information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills regardless of whether they have low, very low, and markedly low total EQ.

Table 18 shows the results of the computation of the differences in the 21st century skills of the technology instructors when grouped with respect to their positive impression.

Along information, media & technology skills, the obtained mean for the 21st century skills of the five groups are 3.88, 4.04, 3.93, 3.98, and 4.00 with mean values interpreted as "VG". It is clear that the mean interpretation for the groups do not differ, they are all "VG" in their 21st century skills, but the nominal values of the obtained mean differ.

The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the mean square between group is 0.05, which is lesser than the mean square within group which is 0.08, the computed F-value is 0.58, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df =4 and 42. This indicate that the mean difference between and within group is "not significant". The null hypothesis, There is no significant difference in the 21st century skills of the respondents along information, media, and technology skills, grouped with respect to their EQ in the G-Positive Impression Scale" is accepted.

Table 18

Comparisons of the 21st Century Skills Possessed by the Technology Teacher-Respondents Grouped with respect to Positive Impression EQ

Emotional Quotient (Bar On EQ-i) Summary						ANOVA RESULT (EQ - Positive Impression Scale)								
Groups	V-High	High	Ave	Low	ML	21st Century Skills	MSb	MSw	dfb	dfw	F value	F-crit	Interpret	Decision
Count	(N=6)	(N=24)	(N=12)	(N=4)	(N=1)									
						1. Information, Media & Tech. Skills	0.05	0.08	4	42	0.58	2.59	NS	Accept H_o
Mean	3.88	4.04	3.93	3.98	4									
Interpret	VG	VG	VG	VG	VG									
						2. Learning & Innovation Skills	0.39	0.26	4	42	1.48	2.59	NS	Accept H_o
Mean	3.87	3.47	3.47	3.7	4.33									
Interpret	VG	G	G	VG	VG									
						3. Communication Skills	0.4	0.76	4	42	0.53	2.59	NS	Accept H_o
Mean	3.03	3.52	3.22	3.55	3.4									
Interpret	G	VG	G	VG	G									
						4. Life & Career Skills	0.25	0.12	4	42	1.98	2.59	NS	Accept H_o
Mean	3.37	3.23	3.21	3.69	3.64									
Interpret	G	G	G	VG	VG									
Mean	3.54	3.56	3.46	3.73	3.84	Overall	0.08	0.08	4	42	1	2.59	NS	Accept H_o
Interpret	VG	VG	G	VG	VG									

As to the obtained means for their 21st century skills along learning and innovation skills grouped as to their EQ in the G-Positive Impression Scale, the very high, and markedly low in EQ with mean rating of 3.87, 3.70 respectively interpreted as VG, while the high, average, and low in EQ groups obtained mean rating of 3.4, 3.4, and 3.0 in their 21st century skills interpreted as "G". It is clear that the mean interpretations of their 21st century skills differ by one scale; one is lower than the other.

The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the mean square between group is 0.39, which is greater compared to the mean square within group which is 0.26, the computed F-value is 1.48, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df =4 and 42. This indicate that the mean difference between and within group is "not significant". The null hypothesis, There is no significant difference in the 21st century skills of the respondents along learning and innovation skills, grouped with respect to their EQ in the G-Positive Impression Scale" is accepted.

As to the mean values of respondents' 21st century skills along communication skills grouping respondents using their EQ in the G-Positive Impression Scale, the means obtained, 3.52 for the "high", and 3.55 for the "low" in EQ is interpreted as" VG", while the very high, average and markedly low in EQ, obtained means equal to: 3.03, 3.22, and 3.40 respectively are interpreted as "G". It is clear that the mean interpretations differ by one scale, one is higher and

the other groups lower. The 21st century skills of the "high" and "low" in EQ is higher than for these three groups, namely: very high, average and markedly low with mean ratings interpreted as "G".

The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the mean square between group is 0.05, which is lesser than the mean square within group which is 0.08, the computed F-value is 0.58, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df =4 and 42. This indicate that the mean difference between and within group is "not significant". The null hypothesis, There is no significant difference in the 21st century skills of the respondents along information, media, and technology skills, grouped with respect to their EQ in the G-Positive Impression Scale" is accepted.

Respondents' 21st century skills along life and career skills, grouped as to EQ in the G-Positive Impression Scale, the obtained mean for the very high, high and average in EQ group is interpreted as "G", the low in EQ group and the markedly low in EQ group is interpreted as "VG". It is clear that the mean interpretations differ in scale as well as in the nominal value of the obtained mean.

The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the mean square between group is 0.25, which is lesser than the mean square within group which is 0.12, the computed F-value is 1.98, which is lesser than the critical F-value of 2.59, at α =

.05 level of significance, df =4 and 42. This indicate that the mean difference between and within group is "not significant". The null hypothesis, There is no significant difference in the 21st century skills of the respondents along life and career skills, grouped with respect to their EQ in the G-Positive Impression Scale" is accepted.

For the respondents' 21st century skills considering the respondents' overall 21st century skills grouping respondents as to EQ in the G—Positive Impression Scale, the obtained mean are described as "good" for the average (mean = 3.46) in EQ group, and "VG" for the very high (mean= 3.54), high (mean= 3.56), low (mean= 3.73), and the Markedly low (mean = 3.84) in EQ group. It is clear that the mean interpretations differ.

The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the mean square between group is 0.08, which is equal to the mean square within group which is 0.08, the computed F-value is 1.00, which is lesser than the critical F-value of 2.59, at α = .05 level of significance, df =4 and 42. This indicate that the mean difference between and within group is "not significant". The null hypothesis, There is no significant difference in the overall 21st century skills of the respondents, grouped with respect to their EQ in the G-Positive Impression Scale" is accepted.

To summarize the result for the within group comparison of the mean rating obtained for the 21st century skills of the respondents:

The respondents' 21st century skills for the very high in EQ, in the G-Positive Impression Scale obtained mean ratings of "very good" along three macro skills groups-1) information, media, and technology skills, 2) learning and innovation skills, and 3) overall 21st century skills; and "good" along two macro skills group- 1) communication skills, and 2) life and career skills.

The respondents' 21st century skills for the high in EQ, in the G-Positive Impression Scale obtained mean ratings of "very good" along three macro skills groups-1) information, media, and technology skills, 2) communication skills, and 3) overall 21st century skills; and "good" along two macro skills group- 1) learning and innovation skills, and life and career skills.

The respondents' 21st century skills for the average in EQ, in the G-Positive Impression Scale obtained mean ratings of "very good" along information, media, and technology skills; and "good" along four macro skills group- 1) learning and innovation skills, 2) communication skills, 3) life and career skills, and 4) overall 21st century skills.

The respondents' 21st century skills for the low in EQ, in the G-Positive Impression Scale obtained mean ratings of "very good" along the five macro skills groups-1) information, media, and technology skills, 2) learning and innovation skills, 3) communication skills, 4) life and career skills, and 5) overall 21st century skills.

The respondents' 21st century skills for the markedly low in EQ, in the G-Positive Impression Scale obtained mean ratings of "very good" along four

macro skills groups-1) information, media, and technology skills, 2) learning and innovation skills, 3) life and career skills, and 4) overall 21st century skills; and "good" along communication skills.

Differences in 21st Century skills of the respondents according to their personality. Table 19 reveals the results of the computation of One-Way Analysis of Variance to determine the significant differences in the 21st century skills of the technology instructors according to their personality types.

In the personality profile almost all of the respondents' personality trait score is from 4 to 7 interpreted as average, and only very few have scores from 1-3 and 8-10. Three main groupings of respondents based on the personality traits resulted based on score of the respondents in the 16 PF Test. The scoring is based on single trait, there was no sample scoring for overall personality trait by a respondent as to the 16 primary traits and five global traits. Since there was no scoring as to a respondent's personality as a whole, the researcher considered the scoring of each respondent for the primary and global traits. A score of 6 is high average, a score of 5 may be thought of as low average and a score of 4 very low average. This was used to group respondents' 21st century skills using their personality as determined using the 16 PF test.

It is reflected in the table that as regards information, media, and technology skills, the technology instructors who have "high average" personality or a score of six obtained a mean of 3.94, interpreted as "very good",

Table 19

Comparisons of the 21st Century Skills Possessed by the Technology Teacher-Respondents Grouped with respect to their Personality through 16 PF Test

Personality Score Summary				ANOVA RESULT (Personality Test - 16 PF Fifth Edition)								
Groups	6	5	4	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Count	(N=6)	(N=35)	(N=8)									
Mean	3.94	4.01	3.93	1. Information, Media & Tech. Skills	0.02	0.08	2	44	0.14	3.21	NS	Accept H_o
Interpret	VG	VG	VG									
Mean	3.68	3.61	3.24	2. Learning & Innovation Skills	0.49	0.26	2	44	0.4	3.21	NS	Accept H_o
Interpret	VG	VG	G									
Mean	2.93	3.45	3.4	3. Communication Skills	0.69	0.73	2	44	0.09	3.21	NS	Accept H_o
Interpret	G	G	G									
Mean	3.26	3.31	3.24	4. Life & Career Skills	0.02	0.14	2	44	0.89	3.21	NS	Accept H_o
Interpret	G	G	G									
Mean	3.79	4.08	4.17	Overall	0.28	0.31	2	44	0.14	3.21	NS	Accept H_o
Interpret	VG	VG	VG									

those with low average personality or a score of five, the mean obtained is 4.01, interpreted as "very good", and for the personality score of 4, the mean rating of their 21st century skills is 3.93, interpreted as "very good".

Meanwhile, the result of the One-Way ANOVA to test the differences between and within group means is significant or not, the computed F-value is 0.14, which is lesser than the critical F-value of 3.21, at $\alpha = .05$, df=2 and 44. This means that the mean difference is not significant which led to the acceptance of the null hypothesis. Therefore, there are no significant differences in the information, media, and technology skills of the respondents grouped as to their personality. This meant that the technology instructors of SSU-CIT possess information, media, and technology skills regardless of their personality types.

With respect to learning and innovation skills, the computed F-value is 0.4, which is lesser than the critical F-value of 3.21, at $\alpha = .05$, df=2 and 44. This means that the mean difference is not significant. As a result, the null hypothesis which states that "there are no significant differences in the learning and innovation skills of the respondents grouped as to their personality" is accepted. This meant further that the technology instructors possess practically the same learning innovation skills regardless of their types of personality.

Along communication skills, the personality score of six or the "high average" respondents obtained a mean of 2.93 interpreted as "good", for the personality score of five or the "low average" obtained a mean of 3.45, interpreted as "good", and for the personality score of four obtained a mean of

3.40, interpreted as "good". The ANOVA for the 21st century skills along communication skills when the respondents are grouped with respect to their personality scores revealed a computed F-value of 0.09, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant and thus, the null hypothesis which states that there are no significant differences in the 21st century skills of the respondents along communication skills when grouped as to their personality is accepted. This reflected the fact that the respondents, regardless of their personality types, have more or less the same communication skills.

For life and career skills, the personality score of six or the "high average" respondents obtained a mean of 3.26 interpreted as "good", the personality score of five or the low average obtained a mean of 3.31, likewise interpreted as "good", and the personality score of four obtained a mean of 3.24, interpreted as "good". Meanwhile, the result of the ANOVA for life and career skills of the technology instructors when grouped with respect to personality yielded a computed F-value of 0.89, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant. Thus, the null hypothesis is accepted. Stated otherwise, there are no significant differences in the life and career skills of the technology instructors when grouped as to their personality.

For the overall 21st century skills of the technology instructors grouped with respect to their personality scores, those with "high average" scores

obtained a mean of 3.79 interpreted as "very good", those with low average personality score obtained a mean of 4.08 interpreted as "very good", and for those with very low personality score of four obtained a mean rating of 4.27 interpreted as "very good". The ANOVA for the overall 21st century skills of the respondents with respect to their personality posted a computed F-value of 0.14, which is lesser than the critical F-value of 3.21, at $\alpha = .05$, df=2 and 44. This means that the mean difference is not significant. The null hypothesis is thus accepted. Hence, there are no significant differences in the 21st century skills of the respondents grouped as to their personality.

To summarize the result for the within group comparison of the mean rating obtained for the 21st century skills of the respondents grouped as to personality, the respondents' 21st century skills for the personality score of six (high average) and five (low average) in the 16 PF Test obtained mean ratings of "very good" along information, media, and technology skills, and learning and innovation skills; and "good" along communication skills, and life and career skills. The respondents' 21st century skills for the personality score of four (very low average) in the 16 PF Test obtained mean ratings of "very good" along information, media, and technology skills; and "good" along learning and innovation skills, communication skills, and life and career skills.

As a whole, the technology teachers of SSU-CIT with high average, low average, and very low average personality score possess the same 21st century skills. The similarities in the 21st century skills of the technology instructors

despite their differences in personality suggest that although it is assumed that the personality of an individual is more or less constant, it does not happen so. According to Hackman and Oldham (2008), it has been observed that although individual differences occur as a result of various styles of parenting and the amount of attention that one received in childhood grooming, individual successes and failures experienced in life, changes in individual personality do occur in the long run. Individuals are likely to become more stable emotionally through 20 to 40 years, where usually they do not need to face any more new experience with age, as greater confidence in self develops. Inasmuch as the technology instructors are already within the 20 to 40 year-old age range, they have become more stable emotionally and hence, must have learned to adapt to the demands of the new era - and thus, explains why all of them possess similar 21st century skills.

In addition, this circumstance may also be explained by the fact that the acquisition of the 21st century skill is a must in order to succeed in the present workplace. This implies that the respondents whatever his/her personality type must see to it that he/she will have the 21st century skills required of present-day teaching-learning experience.

Differences in 21st Century skills of the respondents according to their multiple intelligences. Table 20 reveals the results of the computation of One-Way Analysis of Variance to determine the significant differences in the 21st

Table 20

Comparisons of the 21st Century Skills Possessed by the Technology Teacher-Respondents Grouped with respect to Multiple Intelligences

Multiple Intelligences Score Summary							ANOVA RESULT (Howard Gardner Multiple Intelligences)								
Groups	5	4	3	2	1	0	21st Century Skills	MSb	MSw	dfb	dfw	F-value	F-crit	Interpret	Decision
Count	(N=3)	(N=5)	(N=10)	(N=11)	(N=12)	(N=6)									
							1. Information, Media & Tech. Skills	0.05	0.08	5	41	0.61	2.44	NS	Accept H_o
Mean	3.95	4.13	3.89	4.04	3.99	3.93									
Interpret	VG	VG	VG	VG	VG	VG									
							2. Learning & Innovation Skills	0.29	0.27	5	41	1.08	2.44	NS	Accept H_o
Mean	4.02	3.44	3.35	3.55	3.56	3.78									
Interpret	VG	G	G	VG	VG	VG									
							3. Communicatio n Skills	0.52	0.76	5	41	0.69	2.44	NS	Accept H_o
Mean	3.67	3.8	3.34	3.36	3.07	3.6									
Interpret	VG	VG	G	G	G	VG									
							4. Life & Career Skills	0.08	0.14	5	41	0.58	2.44	NS	Accept H_o
Mean	3.01	3.2	3.38	3.36	3.21	3.35									
Interpret	G	G	G	G	G	G									
Mean	3.68	3.64	3.49	3.58	3.46	3.67	Overall	0.06	0.08	5	41	0.76	2.44	NS	Accept H_o
Interpret	VG	VG	G	VG	G	VG									

century skills of the technology instructors according to their multiple intelligences.

Table 20 presents the result of the ANOVA for comparing mean differences of the respondents in their position of the 21st century skills grouped as to their total number of dominant multiple intelligences. The groups formed are respondents 21st century skills with at most five (5) multiple intelligences (MIs), four (4) multiple intelligences (MIs), three (3) multiple intelligences (MIs), two (2) multiple intelligences (MIs), one (1) multiple intelligences (MIs), and Zero (0) or no multiple intelligences (MIs). The rating of their multiple intelligences (MIs) is from -12 to 0 to +12. The multiple intelligence ratings will range from negative 12 to positive 12. For this study, the researcher included as a dominant intelligences (MIs) when the rating is positive 8, 9, 10, 11, and 12.

Along information, media, and technology skills, for the 21st century skills possess by the respondents with 5 MIs the mean obtained is 3.95, for 4 MIs the mean is 4.13, for 3 MIs the mean is 3.89, for 2 MIs the mean is 4.04, for 1 MIs the mean is equal to 3.99, and for zero (0) MIs the mean is 3.93, all with descriptive interpretation of VG. Although the descriptive interpretation of the mean rating of their 21st century skills is the same for the respondents grouped as to MIs, the nominal value of the mean differs. The ANOVA for the 21st century skills along information, media, and technology skills, the mean squares between groups which is 0.05, turned lesser than the mean squares within groups, which is 0.08, the computed F-value is 0.61, which is lesser than the critical F-value of 2.44, at

α = .05, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along information, media, and technology skills grouped as to multiple intelligences" is accepted.

Along learning and innovation skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 4.02, for the five respondents with 4 MIs the mean is 3.44, for the 10 respondents with 3 MIs the mean is 3.35, for the 11 respondents with 2 MIs the mean is 3.55, for the 12 respondents with 1 MIs the mean is equal to 3.56, and for the 6 respondents with zero (0) MIs the mean is 3.78, with descriptive interpretation of "VG" for four groups as to MIs and "G" for two groups as to MIs. The One-Way ANOVA for testing if the mean differences is significant or not, the mean squares between groups which is 0.29, turned greater than the mean squares within groups, which is 0.27, the computed F-value is 1.08, which is lesser than the critical F-value of 2.44, at α = .05, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along learning and innovation skills grouped as to multiple intelligences" is accepted.

Along communication skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.67, for the five respondents with 4 MIs the mean is 3.80, for the 10 respondents with 3 MIs the mean is 3.34, for the 11 respondents with 2 MIs the mean is 3.36, for the 12 respondents with 1 MIs the

mean is equal to 3.07, and for the 6 respondents with zero (0) MIs the mean is 3.60, with descriptive interpretation of VG for three groups and the remaining three groups have mean interpretation of "G". The One-Way ANOVA for testing their obtained mean differences of their 21st century skills along communication skills, the mean squares between groups which is 0.52, turned lesser than the mean squares within groups, which is 0.76, the computed F-value is 0.69, which is lesser than the critical F-value of 2.44, at $\alpha = .05$, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along communication skills grouped as to multiple intelligences" is accepted.

Along life and career skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.01, for the five respondents with 4 MIs the mean is 3.20, for the 10 respondents with 3 MIs the mean is 3.28, for the 11 respondents with 2 MIs the mean is 3.36, for the 12 respondents with 1 MIs the mean is equal to 3.21, and for the 6 respondents with zero (0) MIs the mean is 3.35, all with descriptive interpretation of G. The One-Way ANOVA for testing if the obtained mean differences is significant or not for respondents' 21st century skills along life and career skills, the mean squares between groups which is 0.08, turned lesser than the mean squares within groups, which is 0.14, the computed F-value is 0.58, which is lesser than the critical F-value of 2.44, at $\alpha = .05$, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the

respondents along life and career skills grouped as to multiple intelligences" is accepted.

As to the overall 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.68, for the five respondents with 4 MIs the mean is 3.64, for the 10 respondents with 3 MIs the mean is 3.49, for the 11 respondents with 2 MIs the mean is 3.58, for the 12 respondents with 1 MIs the mean is equal to 3.46, and for the 6 respondents with zero (0) MIs the mean is 3.67. Four groups as to MIs have descriptive interpretation of "VG" and two with "G". The One-Way ANOVA used to test if the mean differences is significant or not as to the overall 21st century skills of the respondents, the mean squares between groups which is 0.06, turned lesser than the mean squares within groups, which is 0.08, the computed F-value is 0.76, which is lesser than the critical F-value of 2.44, at $\alpha = .05$, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the overall 21st century skills of the respondents grouped as to multiple intelligences" is accepted.

To summarize the result for the within group comparison of the mean rating obtained for the 21st century skills of the respondents grouped as to MIs:

The respondents' 21st century skills with 5 MIs and 0 MIs in the Howard Gardner Test on Multiple Intelligences obtained mean ratings of "very good" along four macro skills groups-1) information, media, and technology skills, 2)

learning and innovation skills, 3) communication skills, and 4) overall 21st century skills; and "good" along life and career skills.

The respondents' 21st century skills with 4 MIs obtained mean ratings of "very good" along three macro skills groups-1) information, media, and technology skills, 2) communication skills, and 3) overall 21st century skills; and "good" along two macro skills group - 1) learning and innovation skills, and 2) life and career skills.

The respondents' 21st century skills with 3 MIs obtained mean ratings of "very good" along information, media, and technology skills, and "good" along four macro skills group - 1) learning and innovation skills, 2) communication skills, 3) life and career skills, and 4) overall 21st century skills;

The respondents' 21st century skills with 2 MIs obtained mean ratings of "very good" along three macro skills groups-1) information, media, and technology skills, 2) learning and innovation skills, and 3) overall 21st century skills; and "good" along two macro skills group - 1) communication skills, and 2) life and career skills.

The respondents' 21st century skills with 1 MIs obtained mean ratings of "very good" along two macro skills groups-1) information, media, and technology skills, 2) learning and innovation skills; and "good" along three macro skills group - 1) communication skills, 2) life and career skills, and 3) overall 21st century skills.

The assumption is that as a technology teacher one must possessed certain skills especially those that is inherent in the technology that he/she teaches. It is better that a technology teacher is multiple intelligent because the class can be lively and not boring since the teacher can input many things to his/her students but this is not a great loss to the students.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations of the study.

Summary of Findings

The following were the important findings of the study:

1. Majority of the respondents' mental ability ranges from below average with deviation IQ scores from 53-87, and stanine of 1-3, interpreted as "below average".

2. Eighteen of the 47 technology teachers of SSU-CIT were markedly low in intrapersonal skill with a standard score under 70, followed by 14 who were low. As regards the interpersonal aspect of emotional intelligence, 18 technology teachers were low, indicated by standard scores between 80 and 89. The mean for stress management was 71.13, interpreted as "very low" stress management ability of the technology instructor-respondents. Eighteen respondents were identified with average adaptability, having standard scores between 90 and 109. As regards general mood, 19 respondents were low, with standard scores between 80 and 89.

The total emotional quotient of the respondents was described as "very low" as indicated by the mean of 71.17. As regards positive impression, there

were 24 respondents who were high in this aspect, with standard scores between 110 and 119.

3. The respondents were average in 14 of the 16 primary traits. As regards reasoning and dominance, the respondents were low. Meantime, the technology instructors of SSU-CIT were average in all the five major personality traits or Big Five, to wit: extraversion (EX), anxiety (AX), tough-mindedness (TM), independence (I), and self-control (SC).

4. The visual/spatial intelligence ranked first as the preferred intelligence of the technology instructor-respondents. The technology instructor-respondents, however, identified as the least preferred intelligence the interpersonal intelligence.

5. Two of the macro 21st century skills, namely, information, media, and technology skills, and learning and innovation skills, were perceived "very good" by the technology instructor-respondents, as shown by the weighted mean posted at 3.99 and 3.56, respectively. The other two macro 21st century skills, to wit, communication and life and career skills, were perceived as "good" with weighted mean of 3.38 and 3.26, respectively. Over-all, the weighted mean for all the 21st century skills was posted at 3.56, interpreted as "very good".

6. Along information, media, and technology skills, the mean of the technology instructors with average IQ was posted at 4.00 while those with below average IQ was 3.95. Although the mean ratings have the same descriptive interpretation of "very good", their nominal values differ. As also gleaned from

the table, the computed F-value was 0.26 which is lesser than the critical F-value of 4.06. Thus, at $\alpha = .05$, df = 1 and 45, the hypothesis which states that "there are no significant differences in the information, media, and technology skills of the respondents according to their IQ" was accepted.

Along learning and innovative skills, the mean rating of the technology instructors with average IQ was 3.6 whereas for the technology instructors with below average IQ was 3.42. From these results it is clear that the mean ratings differed inasmuch as those with average IQ was interpreted as "very good" while those with below average IQ was "good". The result of the One-Way ANOVA for testing the significance of the mean differences for learning and innovation skills revealed a computed F-value of 1.09 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This led to the acceptance of the hypothesis that "There is no significant difference in the learning and innovation skills of the technology instructor-respondents when grouped as to their IQ".

In addition, the mean rating along communication skills of the technology instructors with average IQ was 3.39, interpreted as "good". By contrast, the mean rating along communication skills of the technology instructors with below average IQ was 3.33, with a descriptive interpretation of "good". The result of the One-Way ANOVA for testing the significance of the mean difference along communication skills yielded a computed F-value of 0.04 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This means that the mean difference is not significant thereby accepting the null hypothesis which states

that "There are no significant differences in the communication skills of the technology instructor-respondents according to their intelligence quotient".

For life and career skills, it is presented that the mean rating of the technology instructors with average IQ was posted at 3.26 while the mean rating of the technology instructors with below average IQ was posted at 3.36. Both groups had mean ratings with descriptive interpretations of "good". The result of the One-Way ANOVA yielded a computed F-value of 0.61 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45.

As a whole, the mean rating of the technology instructors with average IQ was 3.56, with a descriptive interpretation of "very good" while those with below average IQ, the mean rating was 3.52, with the descriptive interpretation of "very good". The result of the ANOVA revealed a computed F-value of 0.25 which is lesser than the critical F-value of 4.06, at $\alpha = .05$, df = 1 and 45. This means that the mean difference is not significant. This then led to the acceptance of the null hypothesis which states that "There are no significant differences in the 21st century skills of the technology instructor-respondents when grouped as to IQ".

7. Along information, media, and technology skills, the mean rating of the technology instructors with average EQ was posted at 3.06, with a descriptive interpretation of "good", those with low EQ had a mean of 3.99, with very low EQ had a mean of 4.00, and those with markedly low EQ had a mean of 3.95, all three means had a descriptive interpretation of "very good". As

reflected in the result of the One-way ANOVA for comparing the information, media, and technology skills of the technology instructor-respondents when grouped according to their intrapersonal skills, the hypothesis which states that "there are no significant differences in the information, media, and technology skills of the technology instructors when grouped with respect to their intrapersonal EQ" is accepted. This is because the computed F-value is 0.22, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43.

The mean rating for the technology instructors with average EQ was 3.53, with a descriptive interpretation of "very good". In addition, the technology teachers with low EQ had a mean rating of 3.66, interpreted as "very good", those with very low EQ had a mean rating of 3.38, interpreted as "good", and those with markedly low EQ had a mean rating of 3.58, interpreted as "very good". The result of the One-Way ANOVA for testing the obtained mean differences along learning and innovation skills revealed a computed F-value of 0.58, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Hence, the null hypothesis that "there are no significant differences in the learning and innovation skills of the respondents when grouped with respect to their intrapersonal EQ" is accepted.

As to the obtained mean in their communication skills, the technology instructors with average EQ had a mean rating of 3.48, and those with low EQ

had a mean rating of 3.01, both with descriptive interpretation of "good". By contrast, the technology instructors with very low EQ had a mean rating of 3.54, and those with markedly low EQ had a mean rating of 3.54, both with a descriptive interpretation of "very good". The One-Way ANOVA for testing if the obtained mean differences in communication skills of the technology instructors when grouped according to intrapersonal EQ is significant, the computed F-value is 1.23, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the communication skills of the respondents grouped with respect to their intrapersonal EQ" is therefore accepted.

Along life and career skills, the mean rating for the technology instructors with average EQ was posted at 3.38, for those with low EQ was 3.27, for those with very low EQ was 3.24, and for those with markedly EQ was 3.31 - all mean ratings with descriptive interpretation of "good". It is clear that the mean interpretations of their life and career skills do not differ, but they differ as to the nominal value of the obtained mean for the different EQ ratings. The result of the test to determine if the mean differences in the respondents' life and career skills is significant was a computed F-value of 0.19, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null

hypothesis which states that "there are no significant differences in the life and career skills of the respondents grouped with respect to their intrapersonal EQ" is accepted.

For the overall 21st century skills of the technology instructor-respondents, those with average EQ posted a mean rating of 3.61, those with low EQ with a mean rating of 3.48, those with very low EQ with a mean rating of 3.54, and those with markedly low EQ with a mean rating of 3.60 - all with descriptive interpretation of "very good". The result of the One-Way ANOVA for testing the obtained mean differences of the respondents' 21st century skills revealed a computed F-value of 0.47, which is lesser than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the overall 21st century skills of the respondents grouped with respect to their intrapersonal EQ" is accepted.

Along information, media, and technology skills, the obtained mean of the technology instructors with average EQ was posted at 4.03, those with low EQ was posted at 4.00, those with very low EQ posted at 3.99, and those with markedly low EQ was 3.89 - all four mean with descriptive interpretation of "very good". It is clear that the interpretations of the mean obtained for the information, media, and technology skills do not differ because they are all "very good", but the nominal values of the obtained mean differ. The result of the One-way ANOVA for comparing the information, media, and technology skills of the

technology instructors revealed a computed F-value of 0.42, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis which states that "there are no significant differences in the information, media, and technology skills of the respondents grouped with respect to their interpersonal EQ" is accepted.

As to the learning and innovation skills of the technology instructors, the mean for the average interpersonal EQ was 3.94, for the low interpersonal EQ was 3.42, for the very low interpersonal EQ was 3.53, and for the markedly low interpersonal EQ was 3.47. The result of the One-way ANOVA for comparing the learning and innovation skills of the technology instructor-respondents when grouped according to their interpersonal EQ yielded a computed F-value of 2.29, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. This led to the acceptance of the null hypothesis which states that "there are no significant differences in the learning and innovation skills of the respondents grouped with respect to their interpersonal EQ".

Along communication skills, the obtained mean rating for the technology instructors with average interpersonal EQ was posted at 3.69, with a descriptive interpretation of "very good". By contrast, technology instructors with low, very low, and markedly low interpersonal EQ posted mean ratings of 3.37, 3.35, and 3.13, respectively, indicating a descriptive interpretation of "good". The result of

the One-way ANOVA for comparing the communication skills of the respondents grouping them as to their interpersonal EQ yielded a computed F-value of 0.63, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Therefore, the null hypothesis which states that there are no significant differences in the communication skills of the technology instructor-respondents grouped with respect to their interpersonal EQ" is accepted.

Respondents' 21st century skills along life and career skills registered a mean rating of 3.29 for those with average interpersonal EQ, 3.36 for those with low interpersonal EQ, 3.29 for those with very low interpersonal EQ, and 3.14 for those with markedly interpersonal EQ - all with descriptive interpretation of "good". It is clear that the mean interpretations do not differ for the formed groups but they differ as to the nominal value of the obtained mean. The result of the One-way ANOVA for comparing the life and career skills of the respondents when grouped according to interpersonal EQ revealed a computed F-value of 0.73, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. Therefore, the null hypothesis is accepted.

For the overall 21st century skills of the technology instructor-respondents grouped as to their interpersonal EQ, the obtained mean for those with average interpersonal EQ was 3.74, for those with low interpersonal EQ was 3.54, for

those with very low interpersonal EQ was 3.54 - all three had descriptive interpretation of "very good". The technology instructor-respondents with markedly low interpersonal EQ registered an obtained mean of 3.41, interpreted as "good". The computed F-value was 2.21, which is lesser than the critical F-value of 2.82, at $\alpha = .05$ level of significance, df = 3 and 43. This indicates that the mean difference between and within group is not significant. The null hypothesis of no significant differences in the 21st century skills of the technology instructors grouped with respect to their interpersonal EQ is accepted.

As reflected, the results of the One-Way ANOVA for comparing the 21st century skills along information, media, and technology skills, learning and innovation skills, and communication skills of the technology instructors grouped according to their emotional intelligence quotient (EQ) along the stress management revealed computed F-values lesser than the critical F-value. These led to the acceptance of the hypothesis which states that "there are no significant differences in the information, media, and technology skills, learning and innovation skills, and communication skills of the technology instructors when grouped according to their emotional intelligence along stress management".

As to the mean rating of the respondents with average stress management skill, it was described as "very good" with the nominal value posted at 3.92. The technology instructors with low stress management skill posted a mean rating of 3.25, those with very low stress management skill posted a mean rating of 3.08, and those with markedly low stress management skill posted a mean rating of

3.37. All these latter nominal values have descriptive interpretation of "good". The result of the One-Way ANOVA for determining whether there are significant differences in the life and career skills of the technology instructors when grouped as to their stress management EQ yielded a significant result. The computed F-value is 3.97 which is greater than the critical F-value of 2.82, at α = .05 level of significance, df = 3 and 43. This indicates that the mean difference between and within group is significant. As a result, the null hypothesis which states that "there are no significant differences in the life and career skills of the technology instructor-respondents according to their emotional intelligence along stress management" was rejected.

Along learning and innovation skills, it is clear that the mean interpretations differ by one scale. The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.59, which is lesser than the critical F-value of 2.44, at α = .05 level of significance, df = 5 and 41. This indicates that the mean difference between and within group is not significant. Hence, the null hypothesis which states that "There are no significant differences in the learning and innovation skills of the respondents grouped with respect to their adaptability" is accepted.

Only those technology instructors with markedly low adaptability had obtained mean rating which was "very good" as seen in the value posted at 3.80. All other mean ratings were described as "good". The result of the One-Way ANOVA for determining if the differences obtained between means is significant

or not, the computed F-value is 0.54, which is lesser than the critical F-value of 2.44, at α = .05 level of significance, df = 5 and 41. This indicate that the mean difference between and within group is not significant. Consequently, the null hypothesis which states that "There are no significant difference in the communication skills of the respondents grouped with respect to their adaptability" is accepted.

Along life and career skills, the respondents with very high, high, average, low, very low, and markedly low adaptability obtained means equal to 3.24, 3.5, 3.34, 3.26, 3.16, and 3.03, respectively, interpreted as "good". It is clear that the mean interpretations of their 21st century skills do not differ despite slight differences in their nominal values. The result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is 1.04, which is lesser than the critical F-value of 2.44, at α = .05 level of significance, df = 5 and 41. This indicates that the mean difference between and within group is not significant which led to the acceptance of the null hypothesis.

For the overall 21st century skills of the respondents grouped as to their adaptability, the obtained mean for the technology teachers with very high, high, average, low, very low, and markedly low adaptability are 3.64, 3.77, 3.62, and 3.57, respectively. It is clear that the mean interpretations differ for the different groups. Meanwhile, the result of the One-Way ANOVA for determining if the differences obtained between means is significant or not, the computed F-value is

0.94, which is lesser than the critical F-value of 2.44, at α = .05 level of significance, df = 5 and 41. This result therefore indicates that the mean difference between and within group is not significant, implying further the acceptance of the null hypothesis.

8. As regards information, media, and technology skills, the technology instructors who have "high average" personality or a score of six obtained a mean of 3.94, interpreted as "very good", those with low average personality or a score of five, the mean obtained is 4.01, interpreted as "very good", and for the personality score of 4, the mean rating of their 21st century skills is 3.93, interpreted as "very good". Meanwhile, the result of the One-Way ANOVA to test the differences between and within group means is significant or not, the computed F-value is 0.14, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant which led to the acceptance of the null hypothesis.

With respect to learning and innovation skills, the computed F-value is 0.4, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant. As a result, the null hypothesis which states that "there are no significant differences in the learning and innovation skills of the respondents grouped as to their personality" is accepted.

Along communication skills, the personality score of six or the "high average" respondents obtained a mean of 2.93 interpreted as "good", for the personality score of five or the "low average" obtained a mean of 3.45,

interpreted as "good", and for the personality score of four obtained a mean of 3.40, interpreted as "good". The ANOVA for the 21st century skills along communication skills when the respondents are grouped with respect to their personality scores revealed a computed F-value of 0.09, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant and thus, the null hypothesis which states that there are no significant differences in the 21st century skills of the respondents along communication skills when grouped as to their personality is accepted.

For life and career skills, the personality score of six or the "high average" respondents obtained a mean of 3.26 interpreted as "good", the personality score of five or the low average obtained a mean of 3.31, likewise interpreted as "good", and the personality score of four obtained a mean of 3.24, interpreted as "good". Meanwhile, the result of the ANOVA for life and career skills of the technology instructors when grouped with respect to personality yielded a computed F-value of 0.89, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant. Thus, the null hypothesis is accepted.

For the overall 21st century skills of the technology instructors grouped with respect to their personality scores, those with "high average" scores obtained a mean of 3.79 interpreted as "very good", those with low average personality score obtained a mean of 4.08 interpreted as "very good", and for those with very low personality score of four obtained a mean rating of 4.27

interpreted as "very good". The ANOVA for the overall 21st century skills of the respondents with respect to their personality posted a computed F-value of 0.14, which is lesser than the critical F-value of 3.21, at α = .05, df=2 and 44. This means that the mean difference is not significant.

9. Along information, media, and technology skills, for the 21st century skills possess by the respondents with 5 MIs the mean obtained is 3.95, for 4 MIs the mean is 4.13, for 3 MIs the mean is 3.89, for 2 MIs the mean is 4.04, for 1 MIs the mean is equal to 3.99, and for zero (0) MIs the mean is 3.93, all with descriptive interpretation of VG. Although the descriptive interpretation of the mean rating of their 21st century skills is the same for the respondents grouped as to MIs, the nominal value of the mean differs. The ANOVA for the 21st century skills along information, media, and technology skills, the mean squares between groups which is 0.05, turned lesser than the mean squares within groups, which is 0.08, the computed F-value is 0.61, which is lesser than the critical F-value of 2.44, at α = .05, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along information, media, and technology skills grouped as to multiple intelligences" is accepted.

Along learning and innovation skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 4.02, for the five respondents with 4 MIs the mean is 3.44, for the 10 respondents with 3 MIs the mean is 3.35, for the 11 respondents with 2 MIs the mean is 3.55, for the 12

respondents with 1 MIs the mean is equal to 3.56, and for the 6 respondents with zero (0) MIs the mean is 3.78, with descriptive interpretation of "VG" for four groups as to MIs and "G" for two groups as to MIs. The One-Way ANOVA for testing if the mean differences is significant or not, the mean squares between groups which is 0.29, turned greater than the mean squares within groups, which is 0.27, the computed F-value is 1.08, which is lesser than the critical F-value of 2.44, at α = .05, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along learning and innovation skills grouped as to multiple intelligences" is accepted.

Along communication skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.67, for the five respondents with 4 MIs the mean is 3.80, for the 10 respondents with 3 MIs the mean is 3.34, for the 11 respondents with 2 MIs the mean is 3.36, for the 12 respondents with 1 MIs the mean is equal to 3.07, and for the 6 respondents with zero (0) MIs the mean is 3.60, with descriptive interpretation of VG for three groups and the remaining three groups have mean interpretation of "G". The One-Way ANOVA for testing their obtained mean differences of their 21st century skills along communication skills, the mean squares between groups which is 0.52, turned lesser than the mean squares within groups, which is 0.76, the computed F-value is 0.69, which is lesser than the critical F-value of 2.44, at α = .05, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no

significant difference in the 21st century skills of the respondents along communication skills grouped as to multiple intelligences" is accepted.

Along life and career skills, for the 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.01, for the five respondents with 4 MIs the mean is 3.20, for the 10 respondents with 3 MIs the mean is 3.28, for the 11 respondents with 2 MIs the mean is 3.36, for the 12 respondents with 1 MIs the mean is equal to 3.21, and for the 6 respondents with zero (0) MIs the mean is 3.35, all with descriptive interpretation of G. The One-Way ANOVA for testing if the obtained mean differences is significant or not for respondents' 21st century skills along life and career skills, the mean squares between groups which is 0.08, turned lesser than the mean squares within groups, which is 0.14, the computed F-value is 0.58, which is lesser than the critical F-value of 2.44, at $\alpha = .05$, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the 21st century skills of the respondents along life and career skills grouped as to multiple intelligences" is accepted.

As to the overall 21st century skills possess by the three respondents with 5 MIs the mean obtained is 3.68, for the five respondents with 4 MIs the mean is 3.64, for the 10 respondents with 3 MIs the mean is 3.49, for the 11 respondents with 2 MIs the mean is 3.58, for the 12 respondents with 1 MIs the mean is equal to 3.46, and for the 6 respondents with zero (0) MIs the mean is 3.67. Four groups as to MIs have descriptive interpretation of "VG" and two with "G". The

One-Way ANOVA used to test if the mean differences is significant or not as to the overall 21st century skills of the respondents, the mean squares between groups which is 0.06, turned lesser than the mean squares within groups, which is 0.08, the computed F-value is 0.76, which is lesser than the critical F-value of 2.44, at $\alpha = .05$, df=5 and 41. This means that the mean difference is not significant. The null hypothesis, ""There is no significant difference in the overall 21st century skills of the respondents grouped as to multiple intelligences" is accepted.

Conclusions

The following conclusions were made on the basis of the findings of this study:

1. The technology instructors had below average IQ based on a standardized test. This could have been the result of over specialization of their technology area that they already lacked the foundational knowledge to answer the items in the Otis Lennon Mental Ability Test (OLMAT). In this respect, technology teachers need refresher courses on general academic subjects in order to update their core knowledge. They should be encouraged to enrol in graduate courses to substantiate for their lack of foundational knowledge.

2. No respondents have obtained a standard EQ score of 130+ interpreted as markedly high. However, based from the Bar-On Emotional Quotient Test, the technology instructors are emotionally and socially competent

to be in the workplace, except that they need improvement in areas more particularly on stress tolerance and impulse control.

3. Generally, the technology instructors were average in the 14 traits in Catell's 16PF Test, but were low in reasoning and dominance. They were likewise average in the Big-Five or global traits. Hence, the technology instructors need to be exposed to more critical problem solving situations in order to enhance their reasoning and dominance traits.

4. Based from Gardner's Multiple Intelligence Test, the technology teachers possess multiple intelligences, with particular emphasis on spatial intelligence which is understandable considering that they are teaching technology and technical-vocational courses. More respondents were spatial/visual and no one is an existentialist based on their scores in the test.

5. The grand mean obtained for the 21st century skills of the technology teacher respondents is interpreted as "very good". This meant that they possessed all four macro skills of information, media, and technology skills, learning and innovation skills, communication skills, and life and career skills.

6. Only as regards stress management and the life and career skills of the technology instructors were significant differences were noticed.

Recommendations

The following were the recommendations derived from the findings and conclusions of this study:

1. There is a need for faculty members to take standard tests like IQ, EQ, Personality Test, and Multiple Intelligences Test at the start of every calendar year in order to determine their competencies along these areas. However, the tests should be given in phases in separate schedules in order to get a more objective and generalized findings.

2. Seminars/trainings on 21st century skills must be conducted by the University in order to keep technology teachers posted of updates on their traditional skills so that they will be able to become more open to possibilities of taking learning to a different level.

3. The statement of skills should be included in the faculty development plan in order to provide understanding to the technology instructors as well as to the school's administration about the importance of possessing effective 21st century skills.

4. Anger management seminars must be conducted to the technology teachers or at the very least orient them about the Seven Habits of an Effective Leader (in this case, effective teacher). This way they may be able to find ways by which they can control their emotions to lower distress in the work place and be more in control of their impuses.

5. There should be religious and strict observance of classroom observation in order to determine the teaching methodologies of the technology instructors, whether or not they are practicing the 21st century skills.

6. Another study on 21st century skills of technology teachers should be conducted but including their personal background information as groupings whether they have impact on their 21st century skills.

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APPENDICES

Appendix A

APPROVAL OF RESEARCH PROBLEMS

Republic of the Philippines
SAMAR STATE UNIVERSITY
COLLEGE OF GRADUATE STUDIES
Catbalogan City

May 2, 2015

MARILYN D. CARDOSO, Ph.D.
Dean, College of Graduate Studies
This University

Madam:

In my desire to start writing my graduate research as a requirement for the degree Master of Arts in Education, major in Technology and Livelihood Education (TLE), I have the honor to request for the approval of any one of the following research problems:

1. **DEVELOPMENT OF A CAPACITY BUILDING PROGRAM AMONG CIT PERSONNEL OF SSU**
2. **COGNITIVE ABILITIES, CHARACTER AND WORK PERFORMANCE OF CIT TEACHERS IN SAMAR STATE UNIVERSITY**
3. **SKILL ACQUISITION IN TECHNICAL-VOCATIONAL COURSES AND EMPLOYMENT OPPORTUNITIES OF CIT STUDENTS OF SSU**

Thank you very much for your prompt action on this regard.

Very truly yours,

(Sgd.) **JONAFE O. MATUGAS**
Researcher

APPROVED:

(Sgd.) **MARILYN D. CARDOSO, Ph.D.**
Dean, Graduate Studies

Appendix B

ASSIGNMENT OF ADVISER

Appendix C

LETTER REQUESTING APPROVAL TO CONDUCT STUDY

Republic of the Philippines
SAMAR STATE UNIVERSITY
COLLEGE OF GRADUATE STUDIES
Catbalogan City

August 10, 2015

EUSEBIO T. PACOLOR, Ph.D.
President, Samar State University
Catbalogan City

Dear Sir:

Good day!

I am JONAFE O. MATUGAS, presently enrolled as a Master of Arts in Education, major in Technology and Livelihood Education (TLE) student of this University. I am currently conducting a study entitled **"THE 21st CENTURY TECHNICAL SKILLS OF CIT PERSONNEL: BASIS FOR A DEVELOPMENT PROGRAM"**, in partial fulfillment of the requirements of the degree for which I am presently enrolled.

In this regard, I would like to earnestly pray for your approval to conduct this study among the teaching personnel of the College of Industrial Technology here in this University as well as in Basey and Paranas campuses. Rest assured that the results of this research would be properly disseminated to the said College for inputs for possible future policy redirections.

Thank you very much and more power!

Very truly yours,

(Sgd.) **JONAFE O. MATUGAS**
Researcher

Noted:

(Sgd.) **JANETTE M. CASUCO**
Adviser

Recommending Approval:

(Sgd.) **MARILYN D. CARDOSO**
Dean, College of Graduate Studies

APPROVED:

(Sgd.) **EUSEBIO T. PACOLOR, Ph.D.**
University President

Appendix C

LETTER REQUESTING CERTAIN DOCUMENTS

Republic of the Philippines
SAMAR STATE UNIVERSITY
COLLEGE OF GRADUATE STUDIES
Catbalogan City

August 10, 2015

EUSEBIO T. PACOLOR, Ph.D.
President, Samar State University
Catbalogan City

Thru: **THE HUMAN RESOURCE OFFICER**
This University

Good day!

I am JONAFE O. MATUGAS, presently enrolled as a Master of Arts in Education, major in Technology and Livelihood Education (TLE) student of this University. I am currently conducting a study entitled "**THE 21st CENTURY TECHNICAL SKILLS OF CIT PERSONNEL: BASIS FOR A DEVELOPMENT PROGRAM**", in partial fulfillment of the requirements of the degree for which I am presently enrolled. In this connection, I would like to respectfully request for the following documents which would serve as sources of some of my data:

- Plantilla of CIT Teaching Personnel from AY 2012-2013, AY 2013-2014, to AY 2014-2015; and
- Personnel Evaluation System (PES) forms CIT Teaching Personnel

Rest assured that these documents would be used solely for research purposes only. Thank you very much!

Very truly yours,

(Sgd.) **JONAFE O. MATUGAS**
Researcher

Noted:

(Sgd.) **JANETTE M. CASUCO**
Adviser

Recommending Approval:

(Sgd.) **MARILYN D. CARDOSO**
Dean, College of Graduate Studies

APPROVED:

(Sgd.) **EUSEBIO T. PACOLOR, Ph.D.**
University President

Appendix D

LETTER REQUESTING PERMISSION TO VALIDATE QUESTIONNAIRE

Republic of the Philippines
SAMAR STATE UNIVERSITY
COLLEGE OF GRADUATE STUDIES
Catbalogan City

August 10, 2015

ROMEO N. PALDEZ, Ph.D.
Campus Director
Northwest Samar State University
San Jorge Campus, San Jorge, Samar

Dear Sir:

I am JONAFE O. MATUGAS, presently enrolled as a Master of Arts in Education, major in Technology and Livelihood Education (TLE) student of this University. I am currently conducting a study entitled **"THE 21st CENTURY TECHNICAL SKILLS OF CIT PERSONNEL: BASIS FOR A DEVELOPMENT PROGRAM"**, in partial fulfillment of the requirements of the degree for which I am presently enrolled.

In this regard, I would like to earnestly pray for your approval to conduct validation of my research instrument among your teachers teaching technical-vocational courses. Rest assured that the results of this research would be treated with utmost confidentiality.

Thank you very much and more power!

Very truly yours,

(Sgd.) **JONAFE O. MATUGAS**
Researcher

Noted:

(Sgd.) **JANETTE M. CASUCO**
Adviser

Recommending Approval:

(Sgd.) **MARILYN D. CARDOSO**
Dean, College of Graduate Studies

APPROVED:

(Sgd.) **ROMEO N. PALDEZ, Ph.D.**
Campus Director, NwSSU-San Jorge

Appendix D

COVER LETTER OF THE QUESTIONNAIRE

Republic of the Philippines
SAMAR STATE UNIVERSITY
COLLEGE OF GRADUATE STUDIES
Catbalogan City

August 10, 2015

Dear Respondents:

I am **JONAFE O. MATUGAS**, presently enrolled as a Master of Arts in Education, major in Technology and Livelihood Education (TLE) student of this University. I am currently conducting a study entitled "**THE 21st CENTURY TECHNICAL SKILLS OF CIT PERSONNEL: BASIS FOR A DEVELOPMENT PROGRAM**", in partial fulfillment of the requirements of the degree for which I am presently enrolled.

In this regard, you are chosen to be one of the respondents of this study. Rest assured that the results of this research would be treated with utmost confidentiality and your responses would be used solely for research purposes.

Thank you very much and more power!

Very truly yours,

(Sgd.) **JONAFE O. MATUGAS**
Researcher

Appendix E

QUESTIONNAIRE

DIRECTIONS: Read each item carefully and answer as truthfully as possible. Do not leave any item unanswered.

I. 21ST CENTURY SKILLS OF TECHNOLOGY TEACHERS

DIRECTIONS: This part of the questionnaire contains items regarding the 21st Century skills you possess as part of the teaching personnel of the College of Industrial Technology. Please check the appropriate column that best describes your technical skills in reference to the technical-vocational program you are teaching. Please use the following five-point scale:

5 - Excellent (E)
4 - Very Good (VG)
3 - Good (G)
2 - Fair (F)
1 - Poor (P)

21st Century Skills	Responses				
	E (5)	VG (4)	G (3)	F (2)	P (1)
A. INFORMATION, MEDIA AND TECHNOLOGY SKILLS					
1. Use of state-of-the-art facilities in automotive power train and under chassis hand tools.					
2. Use of state-of-the-art facilities in hydraulic and conventional clutch.					
3. Use of state-of-the-art facilities in axle assembly and steering system, spring and suspensions and shock absorbers and stabilizers.					
4. Use of state-of-the-art facilities in wheels and tires care and maintenance, wheel alignment, and test instruments.					
5. Use of state-of-the-art facilities in brake system construction, operation of brake system, servicing of brake system and					

bleeding of brake system.					
6. Use of state-of-the-art facilities in basic automotive electrical and electronics such as conductors, insulators, magnets, voltage, resistance, and others.					
7. Use of state-of-the-art multi-testers, voltmeter, ammeter, and test light.					
8. Use of state-of-the-art facilities and techniques in starting system, charging system, ignition system and lighting system.					
B. LEARNING AND INNOVATION SKILLS					
1. Use of new innovations in permanent waving such as shampooing, pre-saturation and sectioning.					
2. Use of new techniques in nail structure, cosmetic implements used for manicure, pedicure, and other nail arts.					
3. Use of new techniques for hand massage, including safety and sanitary precaution.					
4. Use of new styles, techniques and skills in hair coloring including testing for allergic reactions to hair coloring products, and examining the hair and scalp.					
5. Use of new techniques and skills in hair lightening such as types of lightening services, care for lightened hair, frosting, streaking and tipping.					
6. Handling of new products and styles of cream relaxing, types of rinses and sanitary and safety precautions.					
7. Understanding of new techniques in hair reborn and hair rebonding.					
8. Use of new facilities in cosmetics.					
C. COMMUNICATION SKILLS					
1. Use of computer-operated software for technical sketching such as orthographic drawings, planes of projection, and multi-view drawings.					
2. Use of multi-media software in pictorial drawing such as axonometric projection, isometric drawing, oblique drawing, and perspective drawing.					

3. Use of multi-media tools in making sectional views of drawn materials.					
4. Use of high-technology materials in pattern development such as in parallel line development, radial line development, and development of triangulation.					
5. Use of new techniques in dimensioning and tolerancing.					
6. Use of new technologies for accurate drawing of area such as living room, dining room, family room, and others.					
7. Use of computer-assisted designs in making floor plans and elevation drawings.					
8. Use of state-of-the-art facilities in drafting measurements for accuracy.					
D. LIFE AND CAREER SKILLS					
1. Use of technology tools to understand concepts on field effect transistor.					
2. Use of multi-media tools in the discussions of audio frequency amplifiers.					
3. Use of multi-media applications and tools to discuss concepts on radio frequency amplifiers such as resonance, circuit Q and bandwidth, RF power amplifiers, and others.					
4. Use of state-of-the-art tools in the discussions of AM/FM receivers and transmitter fundamentals such as modulation techniques, amplitude modulation, frequency modulation, and others.					
5. Use of the state-of-the-art facilities in discussing switch amplifiers.					
6. Use of technology software in discussing digital electronics such as binary arithmetic and logic circuit.					
7. Use of high-end technology tools in understanding microprocessors.					
8. Use of multi-media tools in understanding display devices such as segment display and strobe display.					

Thank you very much!

CURRICULUM VITAE

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PERSONAL BACKGROUND INFORMATION

Name:	**JONAFE O. MATUGAS**
Address:	Brgy. Mercedes, Catbalogan City, Samar
Date of Birth:	November 10, 1983
Place of Birth:	Catbalogan City, Samar
Civil Status:	Married
Spouse:	Alche Q. Matugas
Parents:	
Father:	JUANITO M. OPRE
Mother:	FEDERICA C. OPRE
Present Position:	Instructor I

EDUCATIONAL BACKGROUND

Elementary:	New Mahayag Elementary School Brgy. New Mahayag, Catbalogan City, Samar 1996-1997 With Highest Honors
Secondary:	Samar National School Catbalogan City, Samar 2000-2001
Tertiary:	Samar State University Catbalogan City, Samar 2004-2005
COURSE	Bachelor of Industrial Technology (Food Technology)

Graduate:	Samar State University Catbalogan City 2013-Present
DEGREE	Master of Arts in Education (Technology and Livelihood Education)

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