# The Perception on 21st Century Skills of Nursing Instructors and Nursing Students at Boromarajonani College of Nursing, Chonburi

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*Abstract*—The aim of this descriptive study was to determine the perception of 21st century skills among nursing professors and nursing students at Boromarajonani College of Nursing, Chonburi. A total of 38 nursing professors and 75 second year nursing students took part in the study. Data were collected by 21st century skills questionnaires comprised of 63 items. Descriptive statistics were used to describe the findings. The results have shown that the overall mean scores of the perception of nursing professors on 21st century skills were at a high level. The highest mean scores were recorded for computing and ICT literacy, and career and leaning skills. The lowest mean scores were recorded for reading and writing and mathematics. The overall mean scores on perception of nursing students on 21st century skills were at a high level. The highest mean scores were recorded for computer and ICT literacy, for which the highest item mean scores were recorded for competency on computer programs. The lowest mean scores were recorded for the reading, writing, and mathematics components, in which the highest item mean score was reading Thai correctly, and the lowest item mean score was English reading and translate to other correctly. The findings from this study have shown that the perceptions of nursing professors were consistent with those of nursing students. Moreover, any activities aiming to raise capacity on English reading and translate information to others should be taken into the consideration.

*Keywords*—21st century skills, perception, nursing instructor, nursing student.

## I. INTRODUCTION

SOCIAL changes are rapidly taking place in this 21st century age of globalization. Progress has been made in leaps and bounds in every dimension. Society has become more complex, which has affected lifestyles and occupations, and therefore, education administration needs to be adjusted to prepare graduates with the capabilities to meet the demands of modern society and the readiness to earn a living. Twenty-first century skills have become the key strategy in which both domestic and foreign parties jointly conduct research to create models and present practical guidelines promoting the efficiency of education administration in the 21st century [1]. The most important skills of the 21st century are learning skills [2]. Contemporary learning needs to go beyond the study of academic subjects to the learning of skills for 21st century survival occurring as a result of the learner's own research, with instructors providing advice and helping design activities in which the learner can evaluate personal progress [3]. Thus,

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21st century graduates can possess essential knowledge, abilities and skills. Promoting pools of knowledge, specialty skills, expertise and literacy are therefore key factors requiring efficiency for 21st century learners.

Trilling and Fadel [4], directors of fellowship for 21st century skills, have developed and built a framework for adjusting the education paradigm by presenting the concept of 21st century skills composed of 3Rs x 7Cs learning, the three Rs being Reading, (w)Riting and (a)Rithmetic and the seven Cs being Critical thinking and problem-solving, Creativity and innovation, Cross-cultural understanding, Collaboration, teamwork and leadership, Communications, information and media literacy, Computing and ICT literacy, and Career and learning skills.

The research team of Boromarajonani Chonburi College of nursing is aware of the importance of learning/teaching development in accordance with 21st century skills. Therefore, the research team is interested in studying the perceptions of professors and nursing students on 21st century skills. The objective is to use the data obtained in the analysis to find ways for improving education administration with promotion of 21st century skills. The expected outcome should be learners equipped with academic and occupational capabilities covering 21st century skills and ability to survive with lifetime learning as nursing graduates capable of further providing quality care to service recipients and people in general.

## II. METHOD

### A. Population and Sample Group

The population was divided as follows:

1.  A group of 44 nursing professors teaching at Boromarajonani Chonburi College of Nursing;
2.  A group of 586 first to fourth year nursing students under the nursing science curriculum in the first term of the 2014 academic year;

The sample groups comprised of 38 nursing professors and 75 second-year nursing students, who were willing to complete the questionnaires for the study that was conducted in November 2014 at the Boromarajonani Chonburi College of Nursing.

### B. Instruments

The instrument was the 21st Century Skills of Nursing Student Questionnaires developed by the researcher. The questionnaires comprised of two parts: Part 1 on general data

such as age and gender; Part 2 on the perceptions of professors and students on personal 21st century skills. The instrument was developed based on the concept of Trilling and Fadel [5] according to definitions for each aspect. The questions were rated on five-level rating scale in which a score of five meant a very good level of perception; four meant good; three meant moderate; two meant low and one meant very low level of perception. The scoring was as follows:

- 4.51-5.00 Very good perception
- 3.51-4.50 Good perception
- 2.51-3.50 Moderate perception
- 1.51- 2.50 Low perception
- 1.00-1.50 Very low perception

The research team had the instruments validated for content validity by five experts to select and revise the questions for concurrence with the definitions. The questions had IOC scores under 0.6. After the questions were revised, 63 questions were acquired to cover a total of 10 domains. Next, the revised instruments were implemented in a pilot study with 50 second-year nursing students of the Boromarajonani College of Nursing. The calculated instrument's overall Cronbach's Alpha Coefficient was 0.95, and the coefficients of each aspect were as follows: Reading = 0.72; (w)Riting = 0.78; (a)Rithmetic = 0.87; Critical Thinking and Problem-solving=0.94; Creativity and Innovation = 0.81; Cross-cultural Understanding = 0.80; Collaboration; Teamwork and Leadership = 0.97, Communications, Information and Media Literacy = 0.94; Computing and ICT Literacy = 0.85 and Career and Learning Skills = 0.69.

*C. Procedure*

1. The researchers held a meeting with the professors and students to explain and describe the method for completing the questionnaires. The researchers then requested cooperation and handed the questionnaires out to the professors and students.
2. The researchers collected 38 sets of questionnaires from the professors and 75 sets from the college students for a 100 percent return rate

*D. Data Analysis*

1. General data such as age and gender were analyzed using frequency and percentage.
2. The 21st century perceptions of professors and students were analyzed by using mean and standard deviation.

## III. RESULTS

*A. General Data of the Sample Group*

The sample group was composed of 75 second-year nursing students, most of whom were females (95.7%), age between 19-20 years.

*B. Perceptions of 21st Century Skills of Nursing Professors and Students*

The nursing professors perceived all eight aspects of 21st century skills, namely Reading, (w)Riting and (a)Rithmetic, Critical thinking and problem-solving, Creativity and

innovation, Cross-cultural understanding, Collaboration, teamwork and leadership, Communications, information and media literacy, Computing and ICT literacy, and Career and learning skills. The overall level of perceptions was good (Mean = 3.57, SD= 0.60), with computing and ICT literacy, and career and learning skills )Mean = 4.11, SD = 0.56) being the domains with the highest mean and a good level of perception, and 3Rs (reading, writing and arithmetic) being the domains with the lowest mean and a moderate level of perception, (Mean =3.10, SD = 0.59), as shown in Table I.

TABLE I
MEAN AND STANDARD DEVIATION FOR LEVEL OF PERCEPTION ON INDIVIDUAL ASPECTS OF 21ST CENTURY SKILLS OF PROFESSORS (N=38)

| 21st Century Skills | Mean SD | Level of Perception |
|---|---|---|
| 3Rs (Reading, (w)Riting and (a)Rithmetic) | 3.10 0.59 | moderate |
| Critical Thinking and Problem Solving | 3.20 0.61 | moderate |
| Creativity and Innovation | 3.20 0.61 | moderate |
| Cross-cultural Understanding | 3.83 0.56 | good |
| Collaboration, Teamwork and Leadership | 3.81 0.63 | good |
| Communications, Information, and Media Literacy | 3.62 0.59 | good |
| Computing and ICT Literacy | 4.11 0.56 | good |
| Career and Learning Skills | 4.11 0.56 | good |
| Overall 21st century Skills | 3.57 0.60 | good |

When considering each of the items in the domains of computing and ICT literacy, and career and learning skills, the item with the highest mean of perception was the ability to use basic programs, such as Microsoft Word, Excel and PowerPoint, followed by the ability to use computers and the Internet to search for information in the study, while the item with the lowest mean was love to read and searching and thinking of ways for self-improvement within the next five years. The domains with the lowest perception were the 3Rs (reading, writing and arithmetic). When considering in each of the items in this domain, the ability to read Thai accurately and properly scored the highest mean, while and the ability to relay accurately the meaning of what is read in English to others recorded the lowest mean.

The results for students showed that the overall perception on 21st century skills was good (Mean = 3.79, SD = 0.47), with computing and ICT literacy, and communications being the domains with the highest mean and a good level of perception (MEAN= 4.38, SD=0.47), followed by cross-cultural understanding (MEAN= 4.19, SD=0.56), and the 3Rs (reading, writing and arithmetic) (Mean =3.10, SD = 0.59) being the domains with the lowest mean, as shown in Table II.

When considering each item of the domains with the highest mean and a good level of perception, which were computing and ICT literacy, and communications, it was found that the items with the highest mean and a good level of perception were ability to use basic programs such as Microsoft Word, Excel and PowerPoint )Mean = 4.59, SD = 0.80), followed by the ability to use computers and the Internet to search for information in the study )Mean = 4.52, SD = 0.61). Meanwhile, the two items with the lowest mean were using ICT with consideration to ethical code, relevant

laws and security and the ability to communicate or study through electronic media, such as e-learning or e-mail )Mean = 4.24, SD = 0.65).

TABLE II
MEAN AND STANDARD DEVIATION FOR LEVEL OF PERCEPTION ON INDIVIDUAL ASPECTS OF 21ST CENTURY SKILLS OF STUDENTS (N=75)

| 21st Century Skills | Mean SD | Level of Perception |
|---|---|---|
| 3Rs (Reading, (w)Riting and (a)Rithmetic) | 3.29 0.49 | Moderate |
| Critical Thinking and Problem Solving | 3.54 0.49 | good |
| Creativity and Innovation | 3.36 0.48 | moderate |
| Cross-cultural Understanding | 4.19 0.56 | good |
| Collaboration, Teamwork and Leadership | 3.76 0.44 | good |
| Communications, Information, and Media Literacy | 3.76 0.44 | good |
| Computing and ICT Literacy | 4.38 0.47 | good |
| Career and Learning Skills | 4.09 0.46 | good |
| Overall 21st century Skills | 3.79 0.47 | good |

For the domains with the lowest mean and a moderate level of perception, which was the 3Rs (reading, writing and arithmetic), when viewing each item, the highest mean and a good level of perception was recorded for the ability to read Thai accurately and properly )Mean = 4.15, SD = 0.59(, while the lowest mean was the ability to relay accurately the meaning of what is read in English to others )Mean = 2.2.21, SD = 0.74).

## IV. DISCUSSION

According to the findings, both nursing professors and students had similar perceptions about 21st century skills. They had good perceptions of computing and ICT literacy and low perception of the 3Rs, especially English reading. For the nursing student, one explanation might be that as members of Generation Y (born between 1980 and 2000), era of social change or the digital age, they have a unique rapport with technology. Hence, these students had a greater ability to learn about technology and gain expertise [5]. In addition, the current education administration tends to assign students tasks involving data searches and submitting work via e-mail. As a result, students spend most of their time at the computer and on the Internet [6]. And at Boromarajajonani Chonburi College of Nursing, computers, the Internet and databases are sufficiently provided to support nursing students, which also increases their ability to gain good understanding and skills in this area. This concurred with the study of Sudawadee Sisudta [7], which found that nursing students possessed a good level of knowledge and information skills, with an ability to use and access information in each source and type of information resource. The ability to search for information from libraries and websites also corresponds with the study of Angkhana Wesoho and Sutathatip Kiatwanit [8], which found that most of undergraduate students had a medium information literacy level. The highest ability of students was to access the needed information effectively and efficiently, the next were the ability to determine the extent of information needed; to evaluate information and its sources critically, and incorporate selected information in to their knowledge bases.

For the professors, though, most of them are baby-boomers and Generation X'ers [9], they understand the constant need to develop themselves, especially, with regard to learning about technology, which is vital for learning and teaching today. The professors so the education administration employed by the professors needs to be diverse, educators have adjusted their own teaching methods, in addition to seeking new technology to help with instruction to ensure that students develop self-directed learning [10]. In searching for information via the Internet and using computers, professors must be able to provide instructions to students, and therefore, they must ensure their technology training is up-to-date to keep pace with the students. As a result, the professors have a good level of expertise and skills in this area. This concurred with the study [11], which found that the teachers in the 21st century need to know and understand technology, especially, computing and ICT, in order to offer suggestions and encourage students to be actively self-learning.

The low level of perception on reading skills among both professors and students can be explained through the Thai weaknesses in English competency, which is due to a number of factors. One factor lies in the inadequate English teaching system, which starts in early childhood. In reality, teaching of a foreign language should be in the order of listening, speaking, reading and writing. In Thailand, however, the order is reversed to writing, reading, speaking and listening from kindergarten to college. Furthermore, excessive emphasis is put on learning grammar. This is a reversal of the optimum situation. Consequently, Thai people are weak in English, even at the college level [12]. This concurs with a study [13] conducted with second year nursing science students in the 2001. According to the findings, the sample group had a moderate level of perception on ability in English and a low level of perception in speaking and writing. The study on the ability to read among students majoring in English at Rajanagarindra Rajabhat University revealed that despite high reading ability in terms of detail catching, topic sentences, interpretation, their ability at guessing from context clues and deduction remained low. Furthermore, the students asserted that teaching by interpreting and stressing grammar principles caused the learners to not understand the meaning of words and made them unable to pronounce them correctly [14].

Conclusion, the 21st century poses many challenges in education, and both nursing professors and nursing students should prepare themselves by learning skills that address the needs of today's world and apply this knowledge appropriately.

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