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RESEARCH ARTICLE

21ST CENTURY SOFT SKILLS IN STUDENT-CENTERED LEARNING AMONG FIRST-YEAR COLLEGE STUDENTS: A COMPARATIVE STUDY

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ABSTRACT

Robust studies highlighted the valuable role of student-centered learning approach to acquire the full range of "life skills" among modern learners. Undeniably, the fact that the interaction in learning milieus are so diverse, hence, we need to examine available variables that may influence the validation of skill competencies obtained from learner-centered environment. Results of the study shows that age and religion are insignificant variables to influence the development of soft skill in student-centered approach. Males have better cognitive skills while females are more digitally literate. K12-strand particularly technical vocational is a factor to consider in cognitive development. Academic discipline is a variable that influence enhancement of communication and digital literacy. Pre-college student-centered learning teaching method is variable that affects cultivation of almost all life skills. The study confirmed the enhancement of 21stcentury soft skills: collaboration, digital literacy, communication, creativity, self-directed learning, cognitive, critical thinking skills in student-centered approach.

INTRODUCTION

As education realizes increased globalization, producing graduates with soft skills to keep up with challenges of 21st century has become the goal of many higher education institution. Collaboration, critical thinking, creativity, cognitive, communication, cognitive and self-directed learning are the skills that industry partners today deem most hirable. Striving to create a learning environment that fulfills academic institutions' vision of their graduates, made them to flip 360-degree from traditional chalk-and-talk method to student-centered learning (SCL).This lead the transformation of teachers from spoon-feeder to guide-on-the-side to facilitate learning. This new paradigm shift in tertiary educational institution is supported by robust literature to encouraged students to step-out of their comfort zones and hone the soft skills that will prepare them to be lifelong learners. However, these SCL learning outcomes may provide diverse regard depending on how it was designed, implemented and perceived by varied learners. Moreover, there is a myriad of evidences supporting the desirable outcomes of student-centered approach in empowering students to construct their own knowledge, enable them to think critically, learn to work in teams, communicate effectively, think independently and solve problems collectively. There may also be some student-related demographic factors that may contribute substantially to the success or failure of achieving these essential skills.

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This is vital to reflect on the outcomes of SCL in a learning context because the learner, as an agent, is influenced by diverse phenomena (including other agents) and much of the interactions that occur during learning process. This evoked in undertaking this research study. This study aimed to compare the demographic variables of 21st century soft-skills in SCL among first-year college students in a private university in Manila.

MATERIALS AND METHODS

This is descriptive comparative quantitative study that first described the assessment of student-centered learning as promoters of 21st century soft skills namely: (a) self-directed learning, (b) communication,(c) collaboration, (d) critical thinking, (e) digital literacy, (f) cognitive and (g) creativity. Then, disparity in assessment based on demographic profile was investigated. Study included a total 768 respondents who were: (a) full-time first-year college students, (b) undergone student centered-learning pedagogy, (c) currently enrolled, (d) willing to participate. Sample size was calculated using power analysis and proportionate stratified sampling technique was employed. It utilized a researcher made 50-item questionnaire utilizing a 4-point Likert scale (strongly disagree, disagree, agree or strongly agree) generating a Cronbach alpha of 0.94. The study was approved by an institutional ethics review committee. Study participation was voluntary, anonymity was guaranteed, and consent was obtained at the start of the survey. Results were analyzed using SPSS.

RESULTS

Majority of the respondents were 19 years of age, female, catholic, arts and science courses, product of academic strand of K-12 curriculum and teacher-centered learning as the method of pedagogy pre-college. This study depicts alignments and differences in views of first-year college students of whether SCL implementation wires the development of the 21st century soft skills of cognitive, communication, collaboration, creativity, critical thinking, digital literacy and self-directed learning. Study findings show strong agreement ($\bar{x}$ =3.24) among first-year college students that SCL helps in the promotion of collaboration. Moreover, data displayed no disparity with age (p=0.50), sex (p=0.25), religion (p=0.76), strand (p=0.39), pre-college teaching method (p=0.18) and academic discipline (p=0.44). Also, in the area of SCL as enhancer of communication showed that first-year college students strongly agree collectively ($\bar{x}$=3.29). There was no significant difference between and among the profile group of age (p=0.44), sex (p=0.59), religion (p=0.96), K12 strand (p=0.77) in terms of assessment communication skills development in an SCL approach. However, pre-college teaching method (p=0.02) and academic discipline (p=0.02) were found to be significant in developing communication in SCL.

Table 1. Assessment of SCL as promoters of 21st Century Skills

21st century soft skills	Weighted Mean	Interpretation
Collaboration	3.25	SA
Communication	3.29	SA
Self-Directed Learning	3.13	A
Critical Thinking	3.25	SA
Creativity	3.21	A
Cognitive	2.82	A
Digital Literacy	3.41	SA
Overall	3.19	A*

Furthermore, study respondents agree ($\bar{x}$=3.13) that SCL is an approach that supports development of self-directed learning (SDL) skills among them. Assessment SDL skills in an SCL approach show no disparity in age (p=0.89), sex (p=0.12), religion (p=0.92), K12 strand (p=74) and academic discipline (p=0.56) however, pre-college teaching method was found to be significant with a p value of 0.01. Students from first-year college strongly agree ($\bar{x}$=3.25) with enhancement of critical thinking skills while they just agree (3.21) with promotion of creativity skills in an SCL approach. Among all the profile variables, only the pre-college teaching method had a significant difference (p=0.01) both for creativity and critical thinking skills. Furthermore, in the context of cognitive skills development in an SCL approach, students from first-year college collectively agree ($\bar{x}$=2.82). The results show no statistical difference when it comes to age (p=0.66), religion (0.88), and academic discipline (0.10) whilst sex (p=0.01), K12 strand (p=0.03) and pre-college teaching method (0.01) show otherwise. Strong agreement ($\bar{x}$=3.41) among first-year college students was also identified as SCL enhances digital literacy among them. Age, religion, K12 strand and pre-college teaching method seem to show no influence in developing digital literacy aspect in student-centered learning (SCL). However, gender and the academic discipline they belong to shows significant difference in digital literacy. The 21st Century skills requires powerful learning tools that allow students to locate, acquire, and even create knowledge much more quickly than their predecessors.

Overall, this study affirms ($\bar{x}$=3.19) that SCL is a potent approach that fosters 21st century soft skills necessary to conquer global challenges.

DISCUSSION

Collaboration Skills: Collaboration is one of the key elements in a student-centered environment. Collaborative learning takes place irrespective of their profile variables which indicates that learners are working together to solve a problem, create a product or complete a task. This study revealed that the respondents strongly agreed that this principle of engagement, teamwork and networking between their teachers and group mates is observed in their classroom environment. The study supports that claim of Powell that SCL allows students to work together with their teachers and peers as part of the instructional method giving up absolute control and developing healthy relationships with both learners and their facilitator (Powell, 2013).

Communication Skills: Communication is another vital 21st century skill to facilitate in Student-Centered Learning classroom. The first-year college students collectively agree that student-centered learning seems to enhance communication skills. This may be attributable to constant training and motivation of learners in student-centered classroom through strategies which involves communication skills like role-playing, reporting, extemporaneous speeches, storytelling, chants and other grammatical games. This is in congruence with the expectations of possessing the soft skills that will enable them to face life after graduation from college with confidence and competence as individuals. Also, it can be deduced that age, sex, religion and K12 strands are immaterial variables in terms of enhancing communication skills in student-centered learning. On the other hand, if general education students have been exposed to student-centered learning approach during their pre-college, they tend to perform better in communication compared with those who has been in teacher-centered learning environment. Teaching communication to first year undergraduate student with previous exposure to approaches of student-centered learning will in turn reflect in their past learning experiences and produce better skill in communication. Early exposure to student-centered learning is critical to ensure that students can become better communicators. This is explained by "activating prior knowledge, or schema, where students learn to make connections from their experience, they have a foundation, or scaffolding, upon which they can place new facts, ideas, and concepts" (Activating Prior Knowledge, 2019). Students make sense out of past student-centered learning experiences during their high school which help to deepen understanding and create better results in communication skills.

Furthermore, all other academic discipline courses (Nursing, Accountancy, Business and Finance, Architecture and Fine Arts, Education) seem not to differ in the communication advancement in the experience of student-centered learning while, Tourism and Hotel Management students show better communication over Arts and Sciences students. This is explained because hospitality and tourism industry mostly use verbal or written communications with their employees or handling external parties. Hotel staffs communicate among themselves, with their managers, with their customers which is integral in the performance of their jobs (Essays, 2016).

Table 2. Factors influencing Promotion of 21st Century Soft Skills in SCL

21st century soft skills	Age	Sex	Religion	K12-Strand	Academic Discipline	Pre-college Teaching Method
	p-value	*p*-value	*p*-value	*p*-value	*p*-value	*p*-value
Collaboration	0.50	0.25	0.76	0.39	0.44	0.18
Communication	0.44	0.59	0.96	0.77	0.02	0.02
Self-Directed Learning	0.89	0.12	0.92	0.74	0.56	0.01
Critical Thinking	0.99	0.77	0.91	0.30	0.15	0.01
Creativity	0.24	0.80	0.17	0.67	0.23	0.01
Cognitive	0.66	0.01*	0.88	0.02	0.10	0.01
Digital Literacy	0.15	0.03	0.86	0.94	0.02	0.53

**A p-value less than 0.05 (typically ≤ 0.05) is statistically significant.*

Self-directed Learning Skills: Self-directed learning skills is associated with SCL approach. Essentially, it is believed in SCL that student can be trained to independently think and plan his way of learning. Based on this study, SCL as an approach seemed to elicit and enhance the student ability to become an independent learner threaded through age, sex. religious affiliation, K12 strand and across academic disciplines. These data only show that educators uphold and showcase within them the principle of equality. Students were all treated with and in the same manner teaching them on how to become a self-regulated learner. Furthermore, this is in accordance of the student-centered principle for the faculty to manifest and teach students to learn how to learn by assuming the role of being a facilitator. Someone who guide students to discover, uncover or create a new knowledge by themselves thus teaching them on how become independent. However, result on the difference of self-directed learning in terms of teaching pedagogy used in their pre-college significantly favored student-centered as a better approach. Outcome from the said data seemed to show that using SCL teaching methodology enable students to become self-reliant in their quest for knowledge as oppose to a teacher-fronted one. Some study reported that student-centered learning puts the emphasis on experience and hands-on learning empowering them to discover their own abilities and allowing them to study on their own.

Critical Thinking Skills: Numerous studies have been found that SCL contributes to develop critical thinking (Kusomoto, 2018) and first-year college students affirm it. Also, the development of critical thinking in SCL approach appears to be promoted among the students regardless of age, sex, religion, K12 strand or academic discipline except in their pre-college teaching method. Critical thinking in the classes seems to be favored by students under the student-centered teaching method than under the teacher-centered approach during their pre-college. This may be caused by the familiarity of students with the techniques employed in developing critical thinking like problem-solving, case analysis, project-based activities, critiquing and more. Students are immersed on a day to day basis in classroom engagements where higher order thinking are the expected outcome.

Creativity Skills: Several studies claimed that creative thinking is enhanced by SCL (Lakshmi, 2014). Similarly, this study affirms that student centered approach seems to foster enhancement of first-year college students' creative abilities. This is true regardless of age, sex, religion, K12 strand, academic discipline except for their pre-college teaching method where the student-centered learning had significant edge over the teacher centered method. Students are enabled to develop their creative skills through varied activities like short film making, poster making, designing clinical workplace areas, Power Point presentations, and art appreciation activities. Teachers as facilitator of learning give students the opportunity for independence and freedom to bargain and decide together with other students such as format, design and materials to utilize for various projects and activities. These foster stronger desires to discover new things among students.

Cognitive Skills: Inherent in every pedagogical principle focuses on cognitive learning as the by-product. Student centered learning as one of the many teaching methods used to show that the students in an SCL environment, their cognitive learning curve were developed irrespective of age, religion and academic discipline. Data also revealed that educators guided by the principle of SCL molding the student intellectual capability by using various classroom activities while considering their individual variability. In SCL, every educator's main aim is to ensure that all students got hold of cognitive skills when they left the classroom. However, results showed that males tend to develop a higher intellectual gain in an SCL environment as opposed to their counterpart. This may be relative to the biological make up of binary genders. Moreover, pre-college SCL approach elicit a higher cognitive development as compared to teacher-centered method. This perhaps could be attributed to the fact that students' pacing was given emphasis in the context of their learning. This can also be supported of the result the SCL approach teaches them to be independent learner and discoverer of knowledge. The learning seemed to be more fruitful and lasting since they were the ones who produced the knowledge and the learning. Surprisingly, the result of Bonferroni pairwise comparison revealed that SCL seemed to have higher impact on cognitive development to those who took Technical Vocation K12 strand when compared to those who took the academic strands and in the old curriculum. Academics provide venue for science courses that is more theoretical in nature while Tech-Voc focuses more on practical side. Technical skills learned things by doing which perhaps contributed to a higher mental cognition since SCL geared towards more on learning by doing hence Tech-Voc students tend to pick concept more quickly than those in the sciences.

Digital Literacy: Alongside with growing importance of technology in society and in global network, digital literacy is gaining credit as the most valuable tool for lifelong learning. Digital literacy is not limited to simply finding and utilizing technology, but also to understanding and creating it. Several studies have shown that SCL approach has been instrumental to the development of this skill and results from this study strongly supports this claim. Also, findings negate many available literatures that males seem to have better digital literacy in SCL platform as compared with females (Antonio, 2014). This may indicate that given similar accessibility to digital literacy in student-centered learning platform females

seemingly outweigh males in terms of digital literacy skills. Females are more meticulous compared with males that makes them more to be adept with the use of digital platforms.

Moreover, this study revealed that academic discipline is a variable to consider in the promotion of digital literacy in SCL approach. The post-hoc analysis revealed that the rest of the academic discipline do not vary except for Accounts, Business and Finance courses and Architecture and Fine Arts course's mean ranks are significantly different having a p-value of 0.01. This can be associated with the course work relative to architectural digital designs that makes the integration of architecture and digital technologies on an instrumental level. The more efficient design process in architecture is associated with digital legwork (Savic, 2017).

Conclusion

Modernization and globalization influenced the type of graduates the higher education must produce. Academic institutions invest efforts and resources to meet the soft skills demand of the 21st century industries. They see student-centered learning approach has an avenue to attain the highest range enhancement of these "life skills" among modern learners. However, individualism and diverse interplaying variables demanded the need to examine and validate the skill competencies obtained from learner-centered environment. The study highlighted the enhancement of 21st century soft skills: collaboration, digital literacy, communication, creativity, self-directed learning, cognitive, critical thinking skills in student-centered approach. Results further revealed that age and religion are insignificant variables to achieve the soft skills outcomes associated with student-centered approach. Males displayed better cognitive skills while females turned more digitally literate. Also, K12-strand particularly technical vocational is a factor to consider in cognitive development in SCL. Academic discipline is a variable that influence enhancement of communication and digital literacy.

Introduction of student-centered learning teaching method in the secondary education significantly cultivate almost all life skills. Key players of SCL may consider certain profile characteristics like gender, K12 strand, academic discipline and most importantly the pre-college teaching method as variables that may constitute to the full-range achievement of the life skills.

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