21ST Century Characteristics of Educators as Perceived by Laguna State Polytechnic University Faculty

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ABSTRACT
This descriptive research aimed to determine the level of perception of faculty of Laguna State Polytechnic University on the 21st century characteristics of educator. Demographic profile of the respondent includes age, sex, status, educational attainment, academic rank, and years of service. The study identified six characteristics of 21st century educators such as adaptor, lifelong learner, technology savvy, collaborator, visionary, and leader. It was found out that the highest computed mean and standard deviation of 5.59 (0.13) was obtained from collaborator as one of the characteristics of educator and was interpreted as strongly agree. The faculty have developed and enhanced their knowledge and skills in teaching in order to adopt with the demands of 21st century learners. It is suggested that faculty members should continue to enhance their 21st century skills such as developing and applying new pedagogies in teaching and learning; and implementing design thinking and system thinking for educators.

Keywords: 21st century educators, lifelong learners, technology savvy

INTRODUCTION
With reference to the 21st Century learning environment, as the students are shifting their role from just being consumers of information/knowledge, the teachers' roles also change to meet the teaching and learning processes in the digital, network age. Compared with the traditional methods of teaching where the focus was on deductive instruction, the teachers of the 21st Century are mentors who facilitate the process of knowledge discovery and reinforce the attainment of 21st Century skills and knowledge by using one of the active learning principles (i.e., inquiry, user-design, constructivism). The 21st Century learning environment also reflects the need for the teacher to be more active in connecting together the formal and the informal environments.

Some of the characteristics of the teachers of the 21st Century are: 1) using inquiry, user design, and constructivism theories (active learning principles); 2) facilitating learning; and 3) effectively and appropriately integrating technology to support learning.

Bruner, J. (1996) expanded his theoretical framework to encompass the social and cultural aspects of learning as well as the practice of law such as instruction that must be concerned with the experiences and contexts that make the student willing and able to learn (readiness); instruction that must be structured so that it can be easily grasped by the student (spiral organization); and instruction that should be designed to facilitate extrapolation and or fill in the gaps (going beyond the information given).

The CHED Memorandum Order No. 72 series of 2017, in the Implementing Rules and Regulation (IRR) of Republic Act 10533, stipulated that the Commission is mandated to conduct teacher education training programs, specially to those teachers who graduated from pre-service that is not aligned with enhance basic education curriculum. Furthermore, in coordination with DepEd and relevant stakeholders, the teacher education must be offered in those Teacher Education Institutions in order to meet the necessary quality standards for new teachers.

In light of the implementation of Senior High School curriculum, the succeeding shifts of higher education curricula, such as the basic education curriculum, and the revised Policies, Standards, Guidelines (PSGs) for programs, there exists a need to prepare teachers, by updating the content knowledge, professional skills, and pedagogical tools. One of the Platform Programs for personnel development is teaching innovation including developing and/or applying new pedagogies in teaching and learning; teaching and applying 21st century skills; and implementing design thinking and system thinking for educators.

Hence, the study aimed to find out the characteristics of 21st century educators as perceived by LSPU faculty members.

THEORETICAL FRAMEWORK

The study was anchored on the Experiential Learning Theory. According to Buehlmann and Espinoza (2014), the experiential learning theory states that "An Instructional approach in which students learn is through direct experience and reflection" or defined as a philosophy that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities".

The theory focuses on doing an activity at an approved workstation and processing that activity from both content and learner perspective. This takes a learner through a reflexive process allowing global connections to learning. The theory is also accepted as a non-formal model for teaching and learning. It allows the learners to witness their surroundings, gather information, attain knowledge, and apply and reflect on experiences learned. The research paradigm of conceptual framework, with dependent and independent variables, is shown on Figure 1.
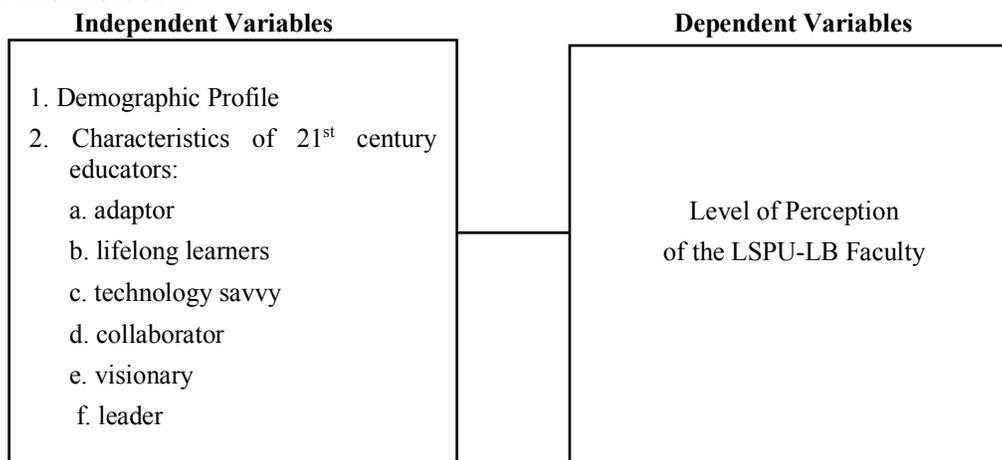
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Conceptual Framework

Independent Variables	Dependent Variables

1. Demographic Profile
2. Characteristics of 21st century educators:
   a. adaptor
   b. lifelong learners
   c. technology savvy
   d. collaborator
   e. visionary
   f. leader
	Level of Perception
	of the LSPU-LB Faculty

Figure 1. Research paradigm.

METHODOLOGY

The study was a descriptive research designed to identify the characteristics of 21st century educators as perceived by the faculty of LSPU. The conceptual framework or research paradigm of the study is shown in Figure 1. Shuttleworth (2008) noted that the descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. The respondents were randomly selected from different colleges of LSPU-Los Baños Campus using Slovin's Formula. To administer the data gathering and other information, a prepared guided questionnaire was used to identify the demographic profile of the respondents and the characteristics of 21st century educators such as adaptor, lifelong learner, technology savvy, collaborator, visionary, and leader. The answer of the respondents was measured using the following scales: Strongly Agree (6), Agree (5), Moderately Agree (4), Moderately Disagree (3), Disagree (2), and Strongly Disagree (1).

The questionnaire sheets were distributed to the respondents, collected, and the data were tabulated, analyzed and interpreted. Tables and graphs were used to present the data, with narrative interpretation to explain the results. The statistical analysis included the frequencies, percentages, and standard deviations. Conclusions and recommendations were included based on the results of the study.

The data were statistically analyzed using One Way analysis of Variance and T-Test. According to Ostertagová, E. and Ostertag, O. (2013), the main purpose of an ANOVA is to test if two or more groups differ from each other significantly in one or more characteristics. Meanwhile, Post-hoc comparisons (or post-hoc tests, multiple comparison tests) are tests of the statistical significance of differences between group means calculated after ANOVA that shows an overall difference. Multiple comparison methods are designed to investigate differences between specific pairs of means.
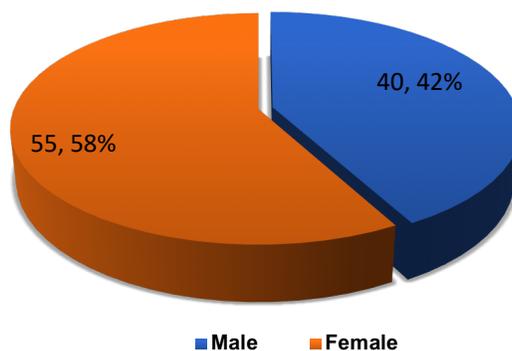
RESULTS AND DISCUSSION

Figure 2.   Percent distribution of respondents based on sex (male or female).

As shown in Figure 2, out of a total 95 respondents, majority were females (58%), followed by males (42%). This result conformed with Haro (2016) who noted that teaching is dominated by females. In the LSPU-LB Campus, the teaching force is presently dominated by female faculty members.
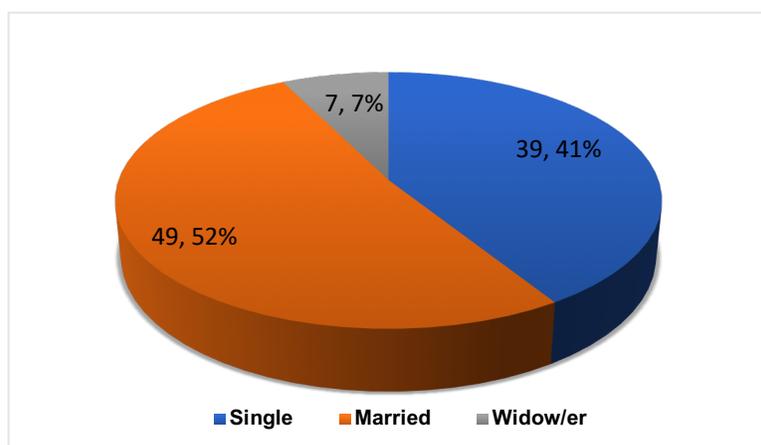

Figure 3. Percent distribution of respondents based on civil status (single, married, widow/er).

As shown in Figure 3, most of the faculty members were married (52%, 49 out of 95), followed by single (41%) and widow/er (7%). Correa-Fernandes, et al. (2015) noted that the teachers' ability to teach subjects contributes to the achievement of students given with their peculiarities in terms of civil status, age and gender.
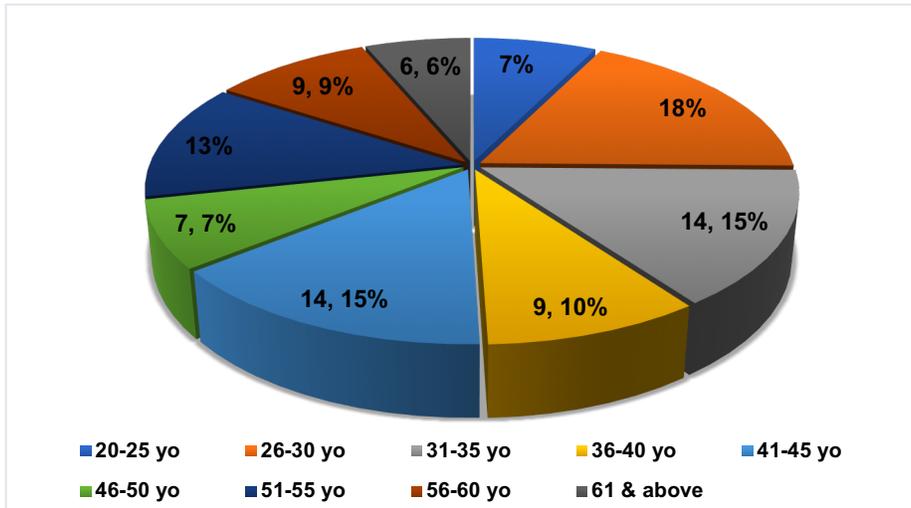
Figure 4. Frequency and percent distribution of respondents based on age.

Figure 4 shows the frequency and % distribution of the respondents based on age. The respondents with the highest frequency (17, out of 95) and % distribution (18%, out of 95) belonged to the group with ages ranging from 26-30 years, followed by groups with 31-35 years, and 41-45 (14, 15%), 51-55 years (12, 13%), 56-60 years (9, 9%), 46-50 years and 20-25 years (7, 9%), and lastly 61 years and older (6, 6%).These findings showed that the faculty members are in their prime years, neither too young nor too old to serve as teachers and gained experience in the field of teaching. As reported in 2015 by the United Nations Educational Scientific and Cultural Organization (UNESCO), the teachers in the Philippines were composed of the following age groups: 8% aged less than 30 years old, 24% aged 30-39, followed by 25% aged 40-49 and 16% aged 60 and over.
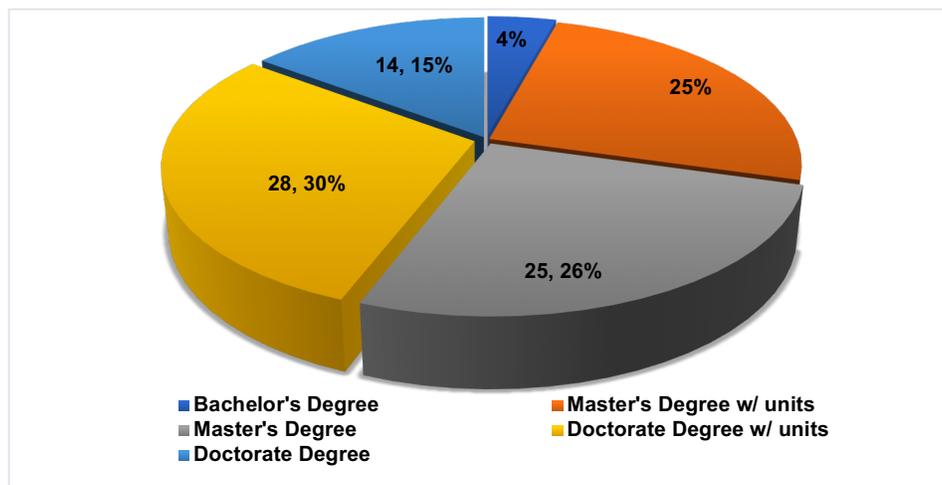

Figure 5.   Percent distribution of respondents based on educational attainment.

As shown in Figure 5, majority of the respondents had units of Doctorate degree (Ed.D.) (30%, 28 out of 95), followed by master's degree holders (26%); master's graduate (MS) with units in different fields (25%), doctorate degree holder (15%) and bachelor's degree holder (4%). The results showed that the respondents met the minimum entry requirements of the university since about 96% of them have at least master's degrees.

Roberto, J. (2018) cited that teaching positions are classified based on the personal qualifications of the incumbents that encourage teachers for professional growth which are vital in a dynamic educational system.
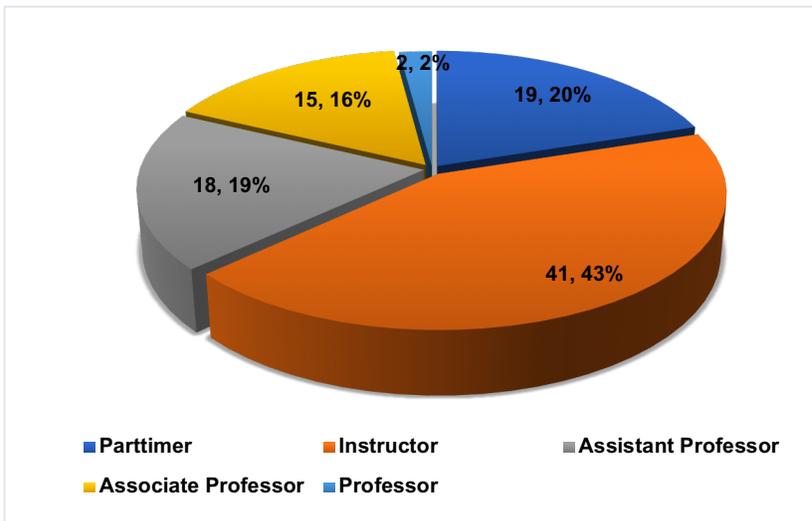

Figure 6. Percent distribution of respondents based on academic rank/position.

As shown in Figure 6, the highest number of respondents were instructors (43%, out of 95), followed by part-time instructors (20%), assistant professors (18%), associate professors (16%), and full-fledged professors (2%).
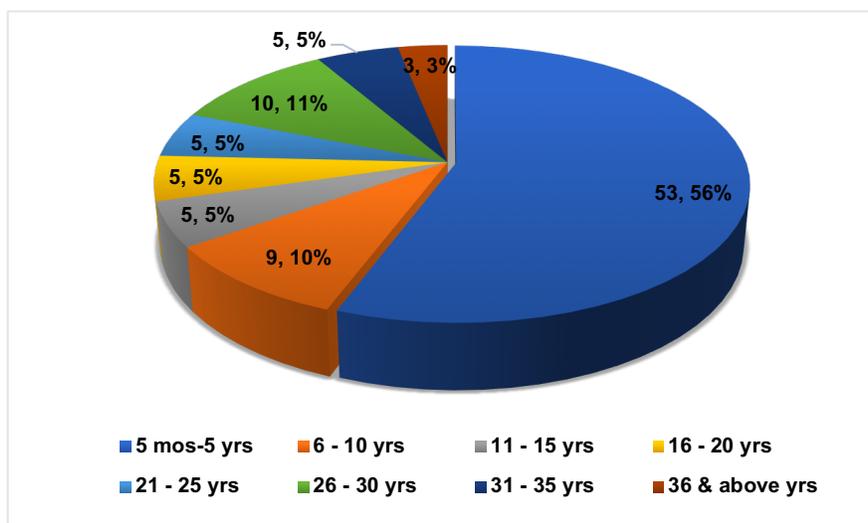

Figure 7. Percent distribution of respondents based on length of service.

As shown in Figure 7, majority of the respondents had served from 21-25 years (56%, 53 out of 95), followed by 26-30 years (11%), 6-10 years (10%), 11-15, 16-20, 21-25 years and 31-35 years (5% each group), and 5 months-5 years (3%).

Table 1. Adaptor, a 21st century characteristic of educator, as perceived by the respondents

Indicative Statement	Mean	Standard Deviation	Descriptive Interpretation
1. I can adapt the curriculum and the requirements in innovative and creative / imaginative ways.	5.65	0.54	Strongly Agree
2. I can adapt the situation and look from a different points of-view and think on how they can improve the situation.	5.64	0.58	Strongly Agree
3. I can adapt a dynamic teaching experience	5.56	0.59	Strongly Agree
4. I am and educator that can understand and apply different learning styles.	5.59	0.61	Strongly Agree
5. I am able to use energizing tools and web technology.	5.45	0.76	Strongly Agree
Grand Mean	**5.58**	**0.07**	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

Table 1 shows that the statement no. 1 "I can adapt the curriculum and the requirements in innovative and creative/imaginative ways" has the highest mean of 5.55 (standard deviation, SD, 0.54); while statement no. 2 "I can adapt the situation and look from a different points of view and think on how they can improve the situation" has a mean of 5.64 (SD, 0.58). The grand mean is 5.58 (SD, 0.07) and interpreted as Strongly Agree. Cox (2015) noted that the 21st century teachers are able to adapt to whatever comes their way, with their tools having changed over the years (e.g. smartboards replaced chalkboards, tablets replaced textbooks); their practice adapting based on the needs of their students; their teaching styles adapting to include different modes of learning, and adapting to new technology. They must be able to adapt to the curriculum and the requirements, and be able to use their imagination to teach in creative ways. Hence, LSPU-LB Campus faculty members are adaptors as revealed by these findings.

Table 2. Visionary, a 21st century characteristic of educator as perceived by the respondents.

Indicative Statement	Mean	SD	Descriptive Interpretation
1. I am able to use across the disciplines and through the curricula.	5.45	0.65	Strongly Agree
2. I can see the potential in, grasp, and manipulate the emerging tools and web technology.	5.22	0.85	Strongly Agree
3. I look at the others' ideas and envisage how they would use those in my classes.	5.46	0.71	Strongly Agree
4. I can make leverage to reinforce my own teaching and the learning of my students.	5.49	0.65	Strongly Agree
5. I can able to see new ideas and use these in my classes.	5.67	0.57	Strongly Agree
Grand Mean	**5.45**	**0.14**	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

Table 2 shows that the statement no. 5 "I can able to see new ideas and use these in my classes" has a mean of 5.67 (SD, 0.57), and interpreted as Strongly Agree; followed by the statement no.4, with a mean of 5.49 (SD 0.65), and also interpreted as Strongly Agree. The grand mean of 5.45 (SD 0.14) is interpreted as Strongly Agree. According to Stansbury (2011), a good 21st-century educator is one who is 1) cognizant of the rapidly changing technology trends, 2) in tune with the direction of the economy, and future projected needs for business and industry, 3) aware of the career opportunities for students in the coming years, and all of the requisite educational skills and talents necessary to allow them to position themselves to compete. 21st-century teachers are not teachers in a vacuum, and 4) progressive in pushing for systemic change via curriculum sequencing.

Table 3 shows statement no. 1 "I can be able to continue learning and absorb experience and knowledge for professional development", with the highest mean of 5.61 (SD, 0.65) and interpreted as Strongly Agree, followed by indicative statement no. 5, with a mean of 5.53 (SD, 0.63) and likewise interpreted as Strongly Agree. Also, the other three indicative statement nos. 2, 3, and 4 have each with a mean (SD) of 5.45 (0.65), 5.41 (0.75), and 5.32 (0.68), respectively, and also each interpreted as Strongly Agree. Being in the teaching profession requires keeping up to date with educational developments and research happening so that the best practice can be applied in the classroom (Rhodes, 2019).

Table 3. Learner, a 21st century characteristic of educator as perceived by the respondents.

Indicative Statement	Mean	SD	Descriptive Interpretation
1. I can be able to continue learning and absorb experiences and knowledge for professional development.	5.61	0.65	Strongly Agree
2. I can change and learn as the horizons and landscape changes.	5.45	0.65	Strongly Agree
3. I can be able to learn, grow, contribute to others' learning through social media.	5.41	0.75	Strongly Agree
4. I can stay on top of the latest trends and forward thinking in education.	5.32	0.68	Strongly Agree
5. I must endeavor and stay current.	5.53	0.63	Strongly Agree
Grand Mean	**5.46**	**0.10**	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

Table 4. Technology Savvy, a 21st century characteristic of educator as perceived by the respondents.

Indicative Statement	Mean	SD	Descriptive Interpretation
1. I can empower myself with technology.	5.37	0.86	Strongly Agree
2. I believe that technology does not replace good pedagogy but it is best when used in application not isolation.	5.43	0.83	Strongly Agree
3. I believe that technology helps in effective communication and motivates and support me in developing and creating better environment for both learners and teachers.	5.62	0.64	Strongly Agree
4. I believe that if the purpose to use technology is clear and good, teachers will put efforts to achieve their needs and goals.	5.40	0.77	Strongly Agree
5. I believe that I cannot be a good teacher without technology.	4.86	1.13	Agree
Grand Mean	5.34	0.25	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

Table 4 shows statement no. 3 "I believe that technology helps in effective communication and motivates and support me in developing and creating better environment for both learners and teachers, with the highest mean (SD) of 5.62 (0.64) and interpreted as Strongly Agree, followed by indicative statement no. 2, 4 and 1, all interpreted as Strongly Agree. However, the indicative statement no. 5 "I believe that I cannot be a good teacher without technology obtained the lowest mean of 4.86 (1.13), and interpreted as Agree. According to Trucano (2015)," the development of the types of so-called '21st century skills' - problem-solving, critical thinking, cross-cultural communication, etc. - as well as a variety of non-cognitive skills (such as grit and mindset) are increasingly considered to be important to success in academics, and in life. To a great extent, these are the sorts of skills that teachers, and not machines, are uniquely able to help students develop. But doing so is not easy, and often requires more highly capable teachers than many education systems currently have. Being able to utilize new technologies in support of their teaching, and to keep up with technological changes, challenges teachers to continue to learn themselves. The increased availability of data on student performance as a result of utilizing new technologies, with their ability to track student activities in ways simply not possible when 'assessment' meant an occasional test using pencil and paper challenges teachers to absorb these data and modify their teaching in ways that are most useful to their students, both collectively and individually".

Table 5. Leader, a 21st characteristic century of educator as perceived by the respondents.

Indicative Statement	Mean	SD	Descriptive Interpretation
1. I can be able to lead in the process of ICT integration.	4.89	1.04	Agree
2. I can lead by example by championing processes and modelling skills, walk the talk.	5.23	0.83	Strongly Agree
3. I am an advocator, an early adaptor, and a maverick.	5.16	0.84	Strongly Agree
4. I can set clear goals and objectives crucial to the success of learning activities.	5.40	0.73	Strongly Agree
5. I am a communicator, fluent in tools and technologies in communication and collaboration anywhere, and anytime.	5.28	0.79	Strongly Agree
Grand Mean	**5.19**	**0.17**	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

As shown in Table 5, indicative statement no. 4 "I can set clear goals and objectives crucial to the success of learning activities" had the highest mean (SD) of 5.40 (0.73) and interpreted as Strongly Agree. It was followed by indicative statement nos. 5, 2 and 3, and all interpreted as Strongly Agree. However, the indicative statement no. 1 "I can be able to lead in the process of ICT integration" obtained the lowest mean (SD) with 4.89 (1.04), and interpreted as Agree.

This is not to say that being a teacher leader is easy or that teacher leadership is fully integrated into the teaching culture. Nor can we gloss over the difficulties that await professionals who seek to change the concept of what it means to be a teacher. Change is always accompanied by conflict, disequilibrium, and confusion. In the current era, shaped as it is by dramatic changes in the world and dominated by a push toward accountability and standardization, change that calls for the development of professional communities and the emergence of teacher leadership may be even more difficult to achieve and maintain. Teacher leaders can help schools become communities that prepare students to participate in the new knowledge society. They can influence the organizational practices of schools and work toward distributing resources equitably, upholding high standards, and giving all students a variety of opportunities to learn and participate in their schools. Teacher leaders can promote a profession that views itself as an intellectual and collective enterprise. They can advocate for the recognition of teaching accomplishments and for a redefinition of teacher roles (Lieberman, 2014).

Table 6. Collaborator, a 21st century characteristic of educator as perceived by the respondents.

Indicative Statement	Mean	SD	Descriptive Interpretation
1. I can able to use collaboration tools to enhance and motivate learners to share, contribute, adapt and invent.	5.35	0.72	Strongly Agree
2. I can work with other faculty members in the school particularly those with the same in the general education classes.	5.63	0.65	Strongly Agree
3. I together with my co-faculty members can develop strategies to assist any students who are having learning or behavioral difficulties.	5.68	0.59	Strongly Agree
4. I can develop collaboration team that consists of members from both regular and part-time educators.	5.58	0.66	Strongly Agree
5. I can work harmoniously with my peers to define and develop plans of action.	5.72	0.52	Strongly Agree
Grand Mean	**5.59**	**0.13**	**Strongly Agree**

Legend: 5.0-6.0 (strongly agree); 4.0 – 4.9 (agree); 3.0-3.9 (moderately agree); 2.0-2.9 (moderately disagree); (disagree); 0.1-0.9 (strongly disagree)

Table 6 shows the perception of respondents in terms of collaborator as one of the 21st century characteristics of educators. The indicative statement no. 5 "I can work harmoniously with peers to define and develop plans of action" obtained the highest mean (SD) of 5.72 (0.52) and interpreted as Strongly Agree. This was followed by indicative statement nos. 3, 2, 4 and 1, and all interpreted as Strongly Agreed. Vangrieken, et al. (2015) noted that collaboration was perceived as a continuum ranging from mere aggregates of individuals to strong team collaboration. This continuum was conceptualized as the degree of team entitativity. These are important issues and provide different opportunities for (collaborative) learning. Although teacher collaboration is challenging, this could be beneficial to students, teachers, and the school. It has vital importance for the future as it is needed to build schools into learning organizations, to anticipate the growing importance of collaboration in society and to use education as a role model for students to properly prepare them for the future.

Table 7. Analysis of leader group according to profile

Profile	F	p-value
College	0.652	0.712
Sex	0.011*	0.023
Civil Status	0.158	0.854
Age	4.749*	0.002
Educational Attainment	0.489	0.744
Major	1.197	0.270
Specialization	1.132	0.332
Academic Rank	4.540*	0.002
Years in Service	3.172*	0.005

*Significantly different, F-test, p-value<0.05

A One-way ANOVA was conducted to compare the mean characteristics of the 21st century educators when grouped according to their profiles. There was significant difference on the profiles Sex [F=0.011, p-value<0.05], Age [F=4.749, p-value<0.05], Academic Rank [F=4.540, p-value<0.05], and Years in Service [F=3.172, p-value<0.05].

CONCLUSION AND RECOMMENDATION

The findings clearly indicate that the faculty of LSPU met the qualifications of becoming 21st century educators based on the level of perception as an adaptor (mean, 5.58), visionary (5.46), learner (5.46), technology savvy (5.34); leader (5.19), and collaborator (5.59), which were all interpreted as Strongly Agree. Based on the age level, the faculty members were on their prime years, neither too young nor too old to serve as faculty and gained experience in the field of teaching. Majority of the respondents met the minimum entry requirements in the university since majority had master's degrees. The highest computed mean (SD) of 5.59 (0.13) was obtained from collaborator as one of the characteristics of educator and was interpreted as Strongly Agree. The LPSU faculty had developed and enhanced their knowledge and skills in teaching in order to adapt with the demands of 21st century learners. It is suggested that faculty members should continue and maintain these kinds of competencies of 21st century educators in teaching innovation, including developing and/or applying new pedagogies in teaching and learning, teaching and applying 21st century skills, and implementing design thinking and system thinking for educators.

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