Enabling Life-Long Learning Through Development of 21st Century Skills

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Abstract: There is a great need of identifying the significance of the developments that are taking place in new technological era by the young minds which are existing in the society at a faster growing rate. Equipping the young minds with skills and competencies updating are very much necessary in the forthcoming days, which enables all age-group learners to accept and get adapted to the upcoming expectations of life and place of work in the 21st century. Hence, there is a great demand for preparing learners to be the life-long learners through Education by developing the skills of 21st century such as Digital Literacy, Effective Communication, Collaboration, Critical thinking, Problem-solving, Decision-making and Creativity. The present study aims at exploring some 21st century skills frameworks which have identified and analyzed significant factors which would support learning to be life-long process. The participants of this study include 46 Pre-service teachers (MEd students) from Department of Education, BUB. To collect the data, tool administered was the questionnaire developed by Jan Oliver de Leon, University of Makati. The data obtained was analyzed descriptively and inferentially by calculating Percentage. The results conclude that there are significant differences in the Life-long learning of learners in relation to Sex, Medium of Instruction& Stream of specialization. The researcher suggests that various pedagogies can be considered and compared to know its contribution in the development, attainment of mastery of skills & competencies of 21st century which could include Problem-based learning, Flipped classroom, Serious games, Self-directed learning, Collaborative learning &Personalized learning.

Keywords : Life-long learning, 21st Century skills framework, 21st Century Pedagogies

INTRODUCTION

Life-long learning can be defined as "all learning activities undertaken by a person throughout knowledge, skills and competencies within a personal, civic, social and employment-related perspectives.

As we all know that the new technologies are coming to the market at a faster growing speed which leads to the technological changes of our world, there is an urgent need to improve population's skills, knowledge and competencies continuously. Therefore, I is very much necessary to be Life-long learners in order to develop ourselves, be up-to-date and also to sharpen our skills.

Education will be provided in the form of learning activities as follows-

Formal learning - the activities which takes place within an organized context,

Non-formal learning – the learning process that takes place within a set of activities that are not explicitly designated as learning,

Informal learning – learning that occurs during daily life activities i.e., learning from own experience.

Therefore, Life-long learning includes acquiring and expanding skills, behaviors and knowledge throughout the life of an individual which is a continuous learning process.

The Assessment and teaching of 21st century skills project develops a framework consisting of a hierarchy of skills that play a pivotal role in collaborative problem-solving. Due to the role of technology in the workplace and lifestyles, new skills were needed as well as new emphases on older skills.

Ways of Thinking : i. Creativity and Innovation.
  ii. Critical thinking, Problem-solving, Decision making,
  iii. Learning to learn and metacognition.

Ways of Working : i. Communication,
  ii. Collaboration & Teamwork.

Tools for Working :i. Information Literacy,

ii. ICT Literacy,

iii. Learning to learn & metacognition.

Living in the real world :i. Citizenship - Local & Global,

ii. Life and Career,

iii. Personal & Social responsibility.

Teaching approaches that support Life-long learning and 21st Century skills include-

1. 1.Problem – based learning – Is a pedagogy in which students learn by solving real-world or open-ended problems.
2. 2.Flipped Classroom – Short video lectures are viewed by students at home before class session, class-time devoted to exercises/projects/discussions.
3. 3.Serious games – Have an explicit & carefully through-out educational purpose, not intended to be played for amusement.
4. 4.Self-directed learning – promotes creativity & innovation where the learner learns him/herself with/without other's help.
5. 5.Computer supported Collaborative learning – examines how to use technology as a scaffolding tool to support collaboration and higher order thinking.
6. 6.Personalized learning- where learners can approach problems in their own way and at their own pace.

NEED & SIGNIFICANCE OF THE STUDY

The term Life-long learning is been used in learning or in the field of Education since more than 25 years, but has become more significant in 21st century because of the increased life expectancy & increase in the retirement age of workers. Due to the rapid changes in technologies and global needs, the expectations from the employees have also been changed.

Therefore, in order to succeed in getting a job, it is very much necessary to be a person ready to learn new ideas-regardless of age and should realize that Education should not be stopped when graduated.

The Life-long earning not only increases job prospects and supplements professional competencies, also helps in keeping the mind sharp which improves memory, enhancing self-esteem, helping one to adapt to changes happening in society, helping to make new friends, as there will be meeting new people during the learning activities.

In order to become a Life-long learner, a person should develop 21st century skills which includes digital literacy, communication, critical thinking, problem-solving, collaboration, creativity & imagination, which enables the learners to identify the learning activities which he/she has to undertake which in-turn improves knowledge & skills.

Few people also argue that the learners cannot develop 21st century competencies and skills, unless they are explicitly taught. Therefore, there is a great demand /need for formal education to transform, which enables new forms of learning and acquisition of competencies and skills through the applicability of new pedagogy methods. Some pedagogy methods are also more successful than others which helps students in developing 21st century skills.

This paper explores 21st century skills framework which identifies various skills which are important for the 21st century which also supports Life-long learning. 21st Century pedagogies must aim at employing innovative & research-supported teaching strategies, learning technologies, real-world applications which may contribute to the development and mastery of 21st century competencies and skills.

STATEMENT OF THE PROBLEM

Enabling Life-long learning through development of 21st Century skills,

OBJECTIVES OF THE STUDY

1.To understand the impact of 21st century sills on Life-long learning of pre-service teachers.

2.To examine the existence of Life-long learning through 21st century skills among male

& female pre-service teachers.

3.To examine the Life-long learning through 21st century skills among pre-service teachers in relation to medium of instruction.

4.To examine the Life-long learning through 21st century skills among pre-service teachers in relation to stream of specialization.

STATEMENT OF HYPOTHESES

1.There is no significant impact of 21st century skills on Life-long learning of pre-service teachers.

2.There is no significant difference between the Life-long learning through 21st century skills of male and female pre-service teachers.

3.There is no significant difference between the Life-long learning through 21st century skills of Kannada and English medium pre-service teachers.

4.There is no significant difference between the Life-long learning through 21st century skills of Arts, Science & Commerce pre-service teachers.

METHODOLOGY :

Participants in this study were 46 pre-service teachers(M Ed students) of Department of Education, BUB. The researcher made use of a questionnaire developed by Jan Oliver de Leon, University of Makati to collect the data about the impact of 21st Century skills on Life-long learning. The data obtained was analyzed descriptively and inferentially by calculating mean and percentages.

ANALYSIS & INTERPRETATION OF DATA

Section I : Demographic Information of Pre-service teachers :

Sex :
46 responses
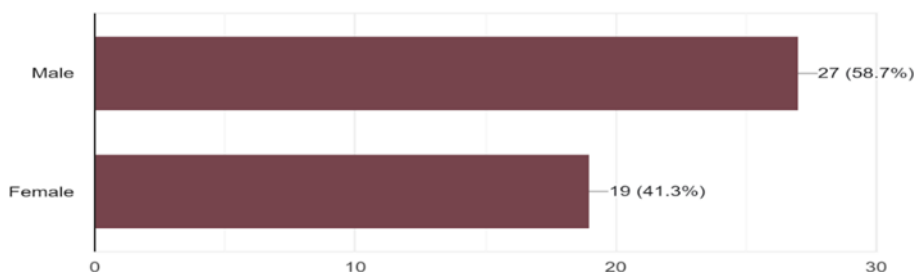
Out of 46 pre-service teachers considered for the present study, 58.7% (27) were male and 41.3%(19) were Female pre-service teachers.

Educational Qualification :
46 responses
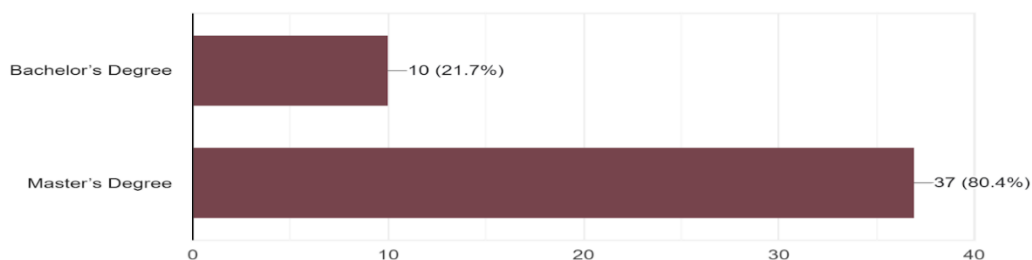
Out of 46 pre-service teachers considered for the present study,21.7%(10) pre-service teachers' educational qualification was Bachelor's degree and 80.4%(37) pre-service teachers' educational qualification was Master's degree.

Stream of Specialization :
46 responses
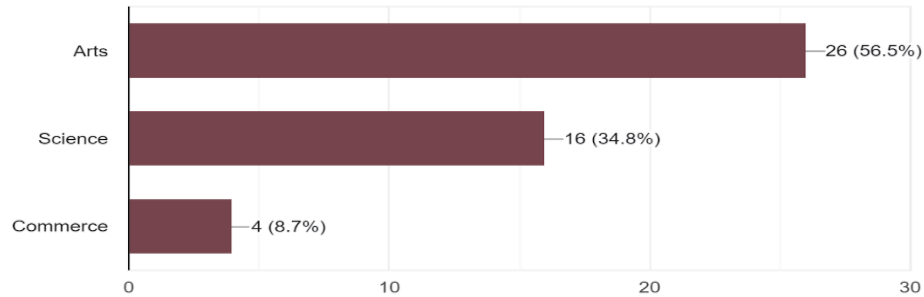
Out of 46 pre-service teachers considered for the present study, 56.5%(26) pre-service teachers were from Arts stream, 34.8%(16) were from Science stream and 8.7%(04) were from Commerce stream of specialization.

Section II : 21st Century Skills of Pre-service teachers :
The graphical representations of the various 21st century skills considered for the present study are as the following and the results of Percentage analysis are represented in the tabular form below:

I. Information, Media & Technology Skills - 1. Information Literacy - I am a pre-service teacher who - a) Knows when there is a need for information
46 responses
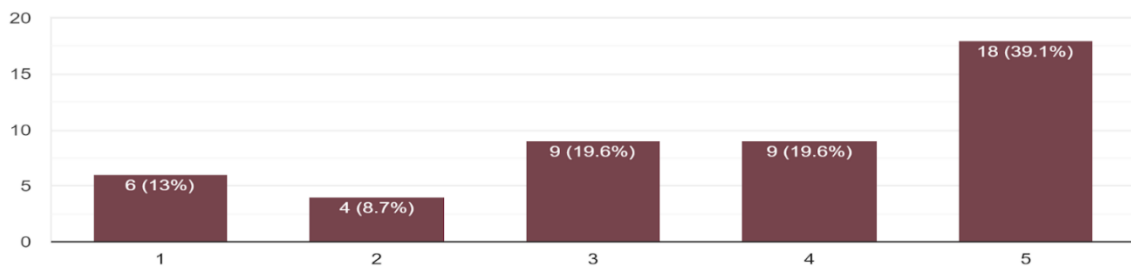
b) Utilizes relevant information from credible sources
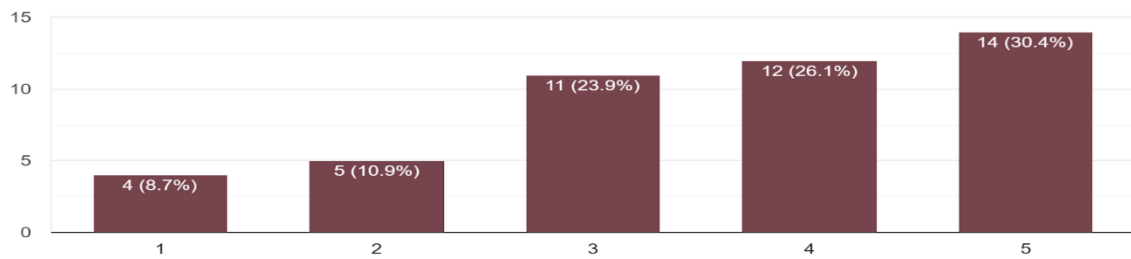46 responses
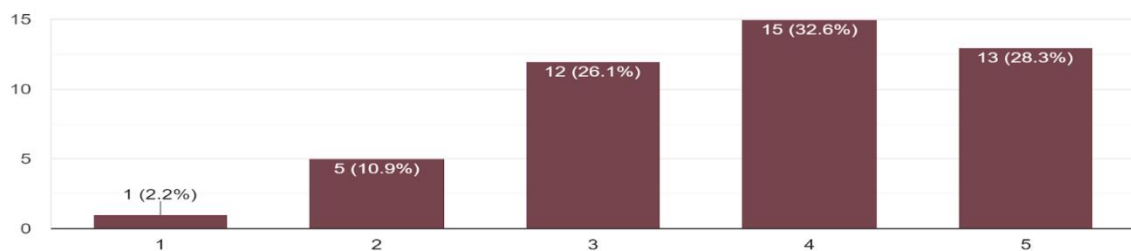
c) Considers the ethical use of communicating information
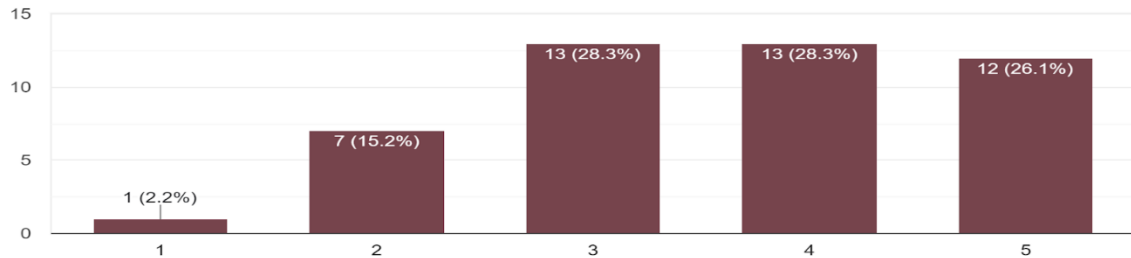
46 responses
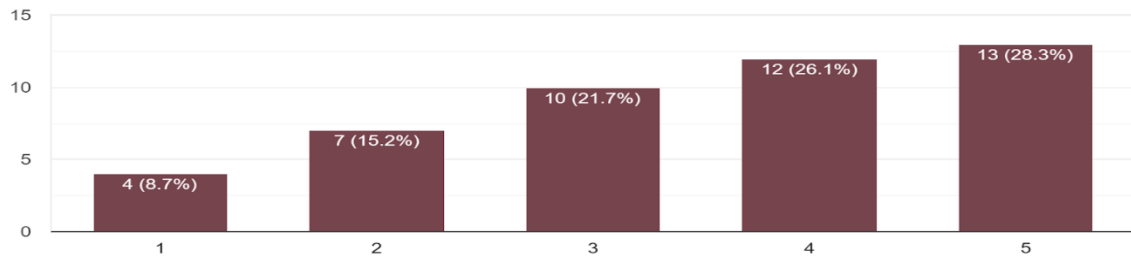
 2. Media Literacy - I am a pre-service teacher who - d) Uses appropriate media to enhance student learning
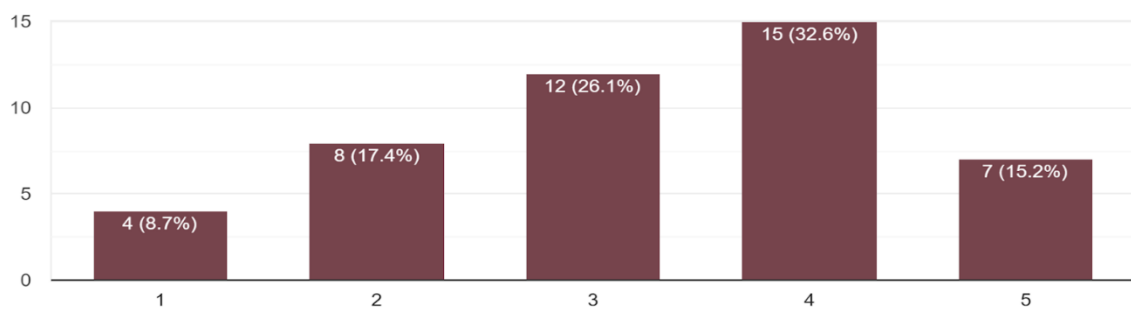
46 responses

e) Utilizes online media as a learning platform
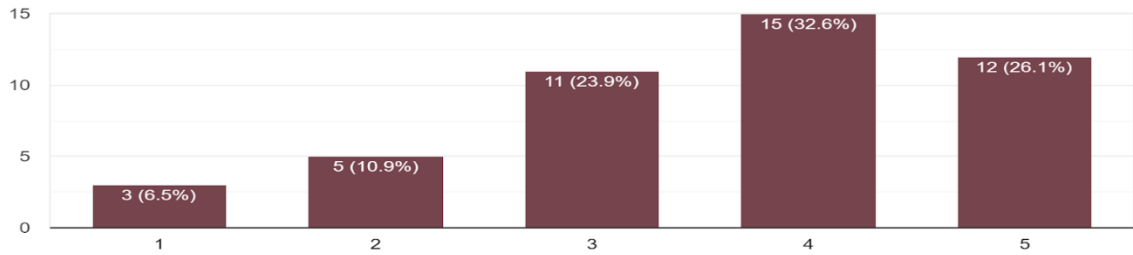
46 responses

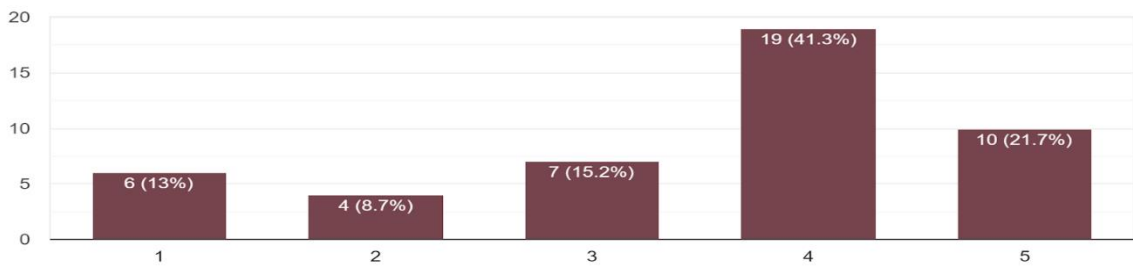f) Integrates digital media & traditional media

46 responses

3. Technology Skills - I am a pre-service teacher who - g) Incorporates digital tools to improve overall teaching and learning process
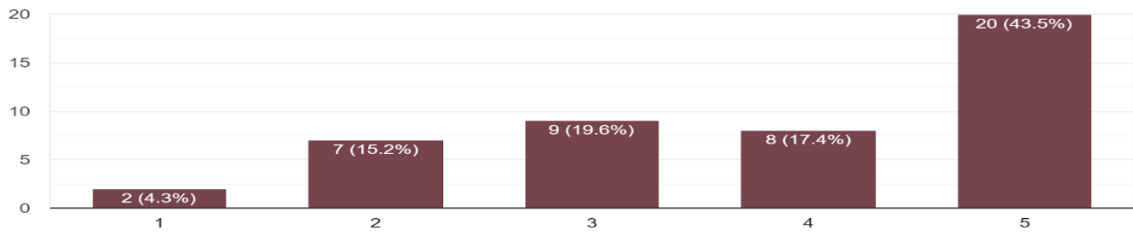46 responses

h) Encourages students to incorporate digital tools for learning
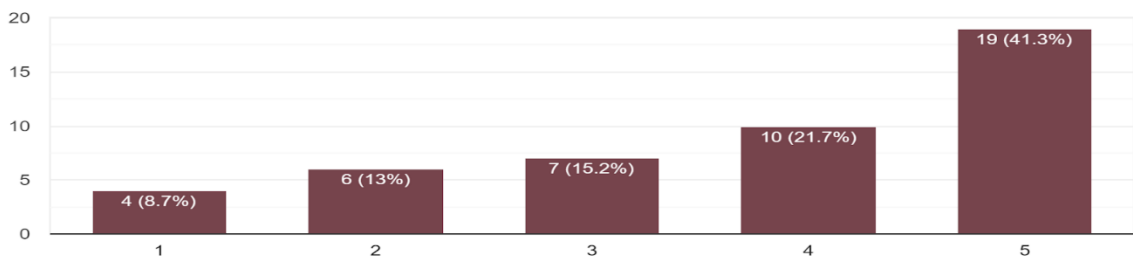46 responses

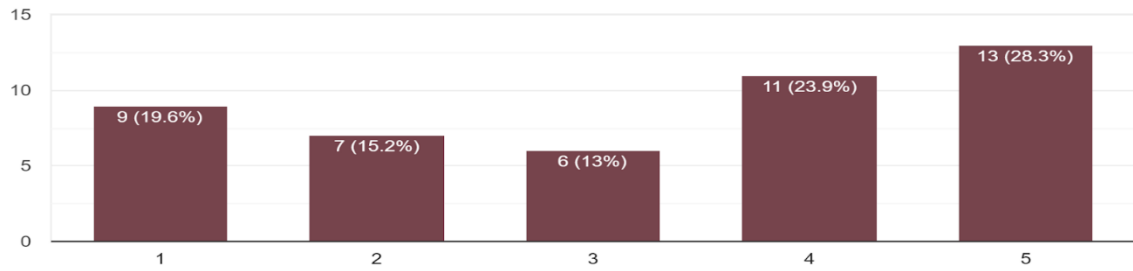i) Effectively uses instructional materials in the classroom
46 responses

II. Learning & Innovation Skills - 1. Creativity - I am a pre-service teacher who- a) Tries new approaches to get things done
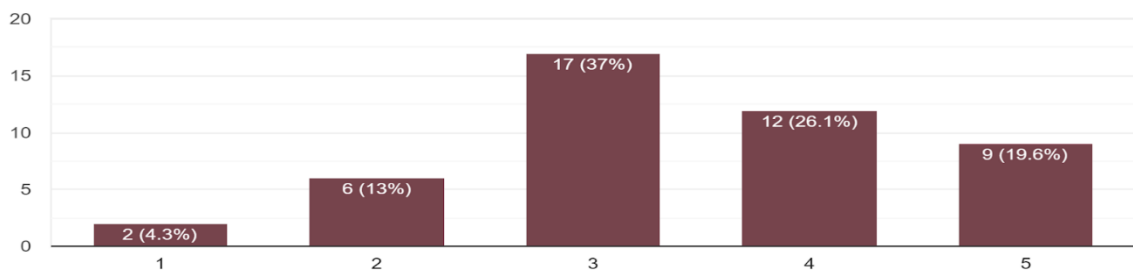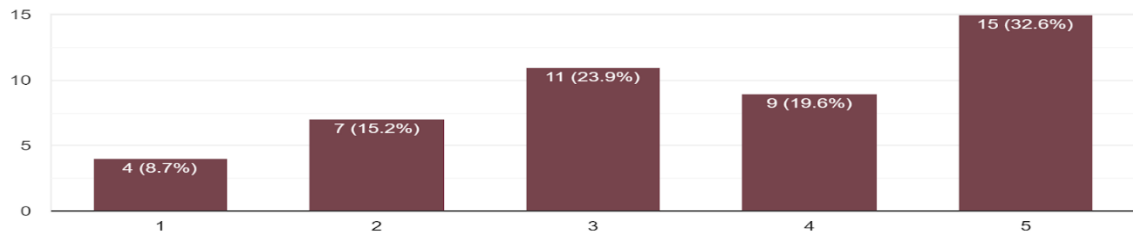46 responses

b) Offers diverse ideas

46 responses

c) Is resilient when confronted with challenges or setbacks
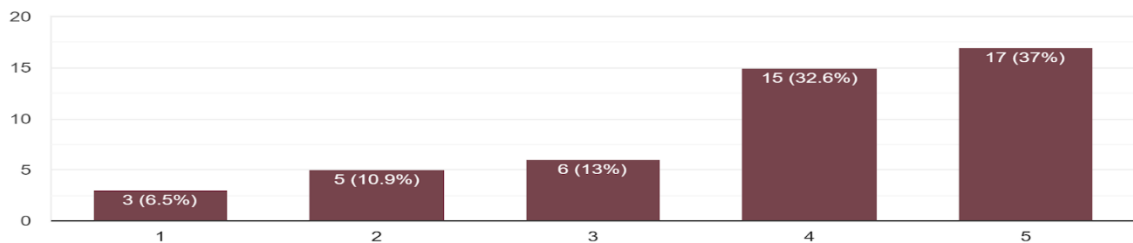
46 responses

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2. Critical thinking - I am a pre-service teacher who- d) Thinks of solutions rather than problems
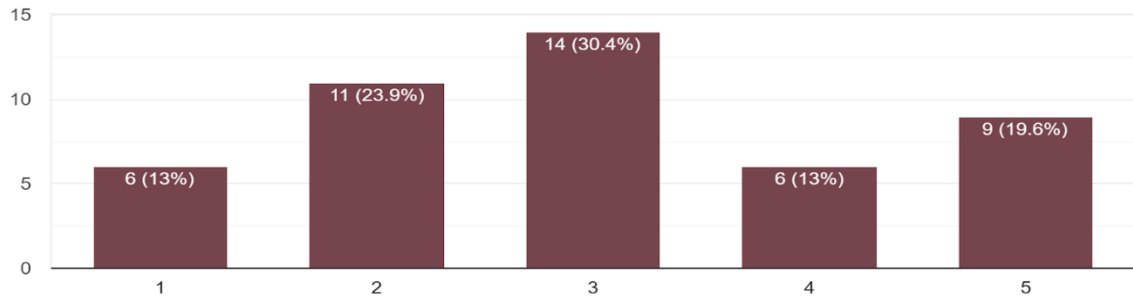
46 responses

e) Evaluates evidences that support an argument before making a decision
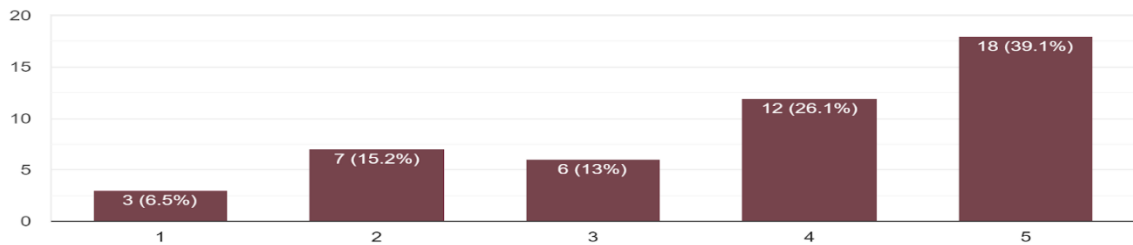
46 responses

f) Uses follow-up questions that focus or broaden injury
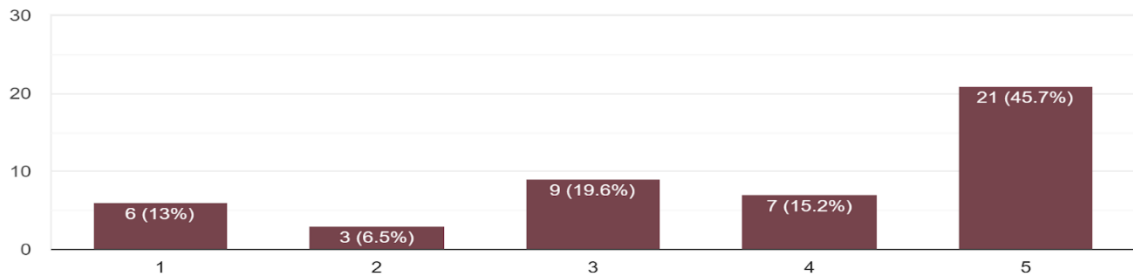
46 responses

3. Self-direction - I am a pre-service teacher who- g) Sets Self-objective & goals

46 responses

h) Actively involves myself in continuing professional development activities regularly

46 responses

i) Is responsible for my professional growth & development

46 responses
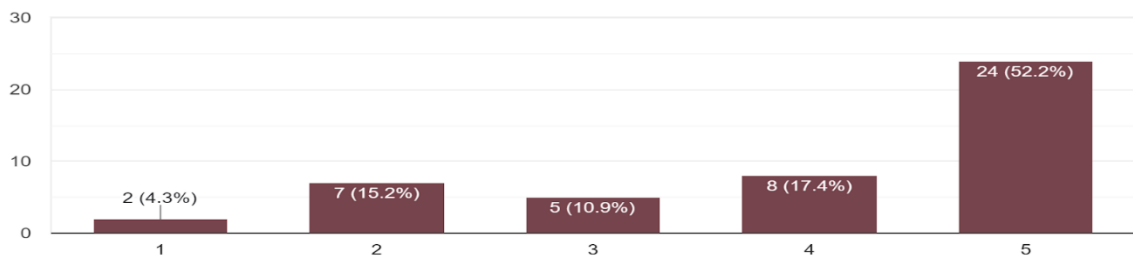
III. Effective Communication Skills - 1. Collaboration & Teamwork - I am a pre-service teacher who- a) Shares leadership; known when to lead and when to follow
46 responses
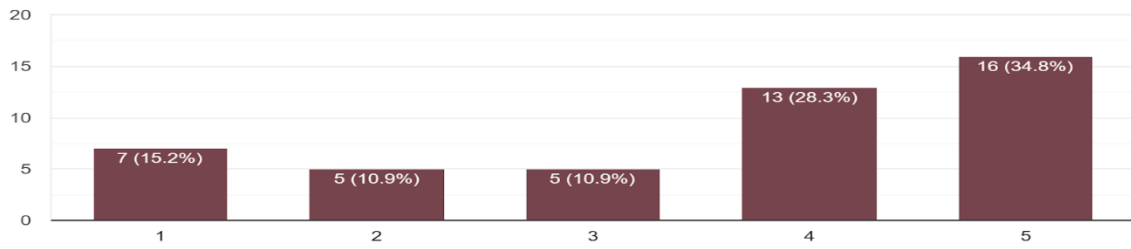
b) Addresses challenges in the team through discussion and consensus-building activities
46 responses
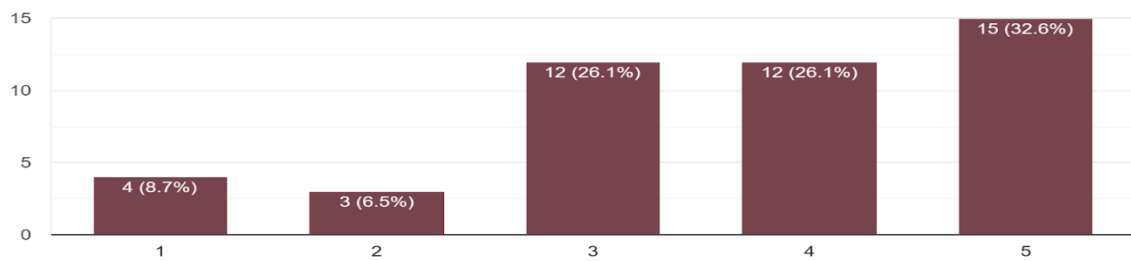
c) Assists others to improve the team's overall performance
46 responses
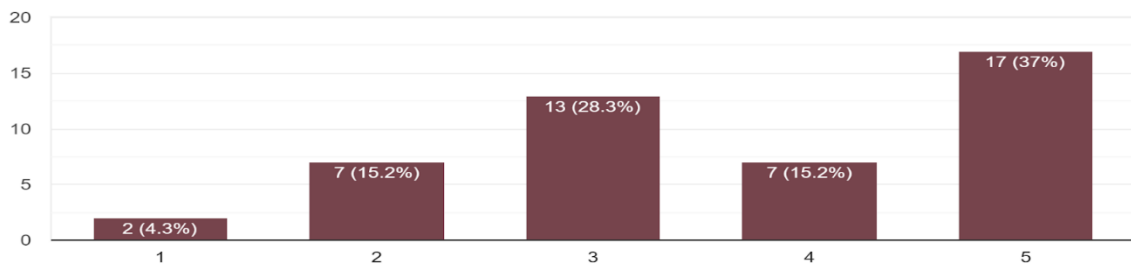
2. Interpersonal Skills - I am a pre-service teacher who - d) Is comfortable in providing constructive feedback
46 responses
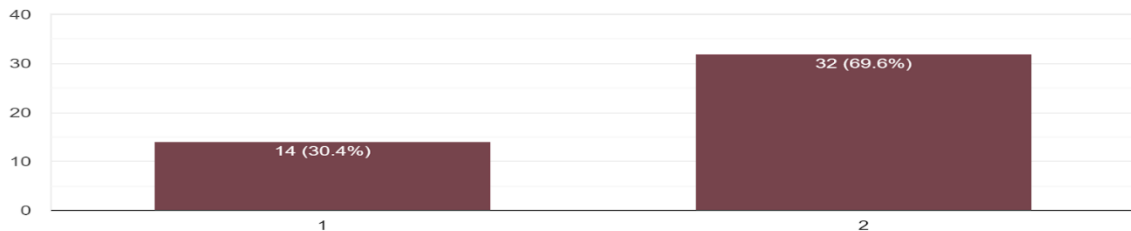
e) Is comfortable in receiving constructive feedback
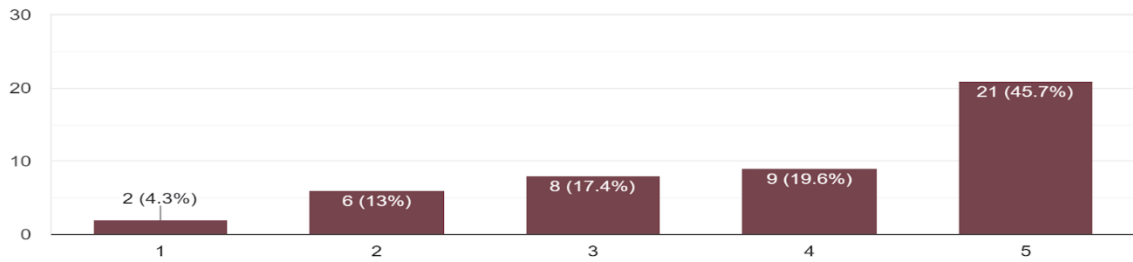
46 responses

f) Maintains good relationship to all members of the team

46 responses
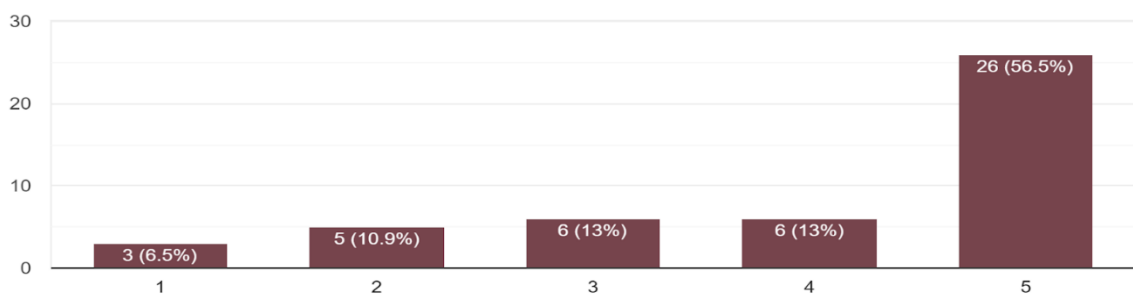
3. Interactive communication - I am a pre-service teacher who- g) Asks probing questions that lead to greater understanding & critical thinking

46 responses
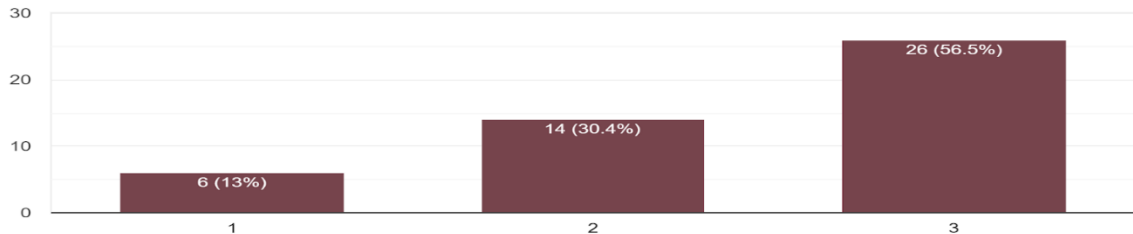
h) Answers questions & concerns promptly

46 responses
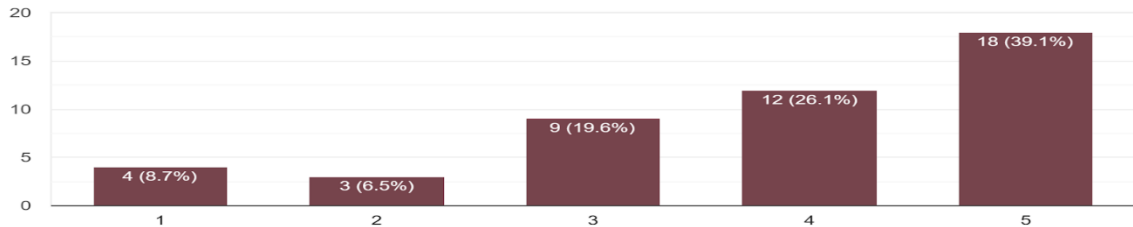
i) Knows how to listen actively

46 responses
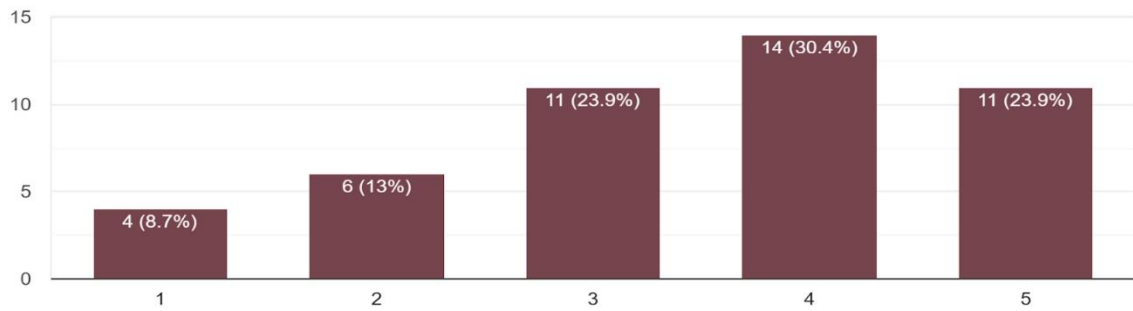
IV. Life and Career Skills   1. Flexibility - I am a pre-service teacher who- a) Effectively performs my task as a pre-service teacher & other extra-curricular assignments

46 responses
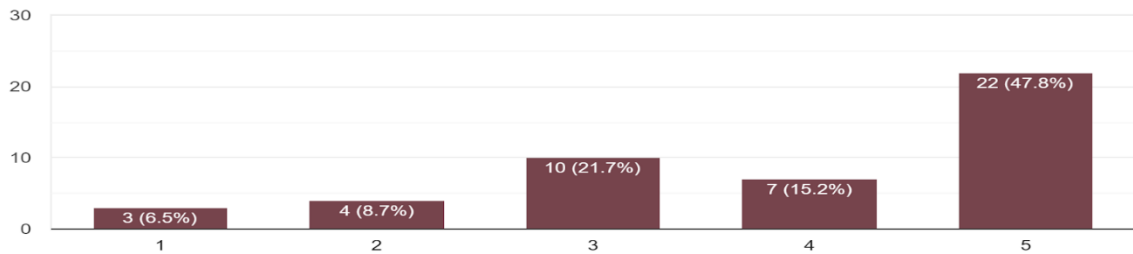
b) Handles millennial & the new generation well

46 responses
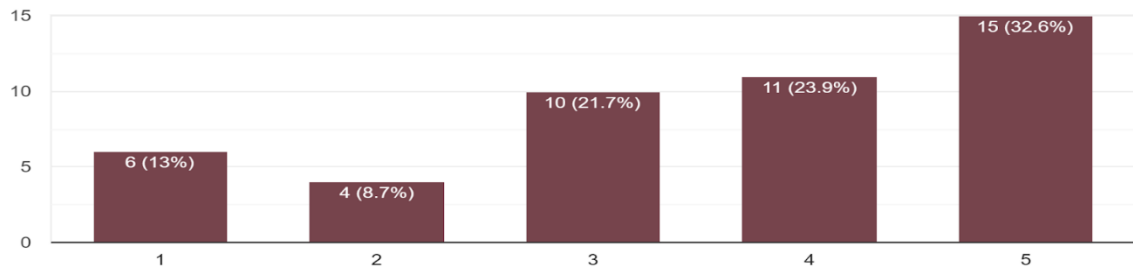
c) Accepts that there are things I don't know & needs to adapt

46 responses
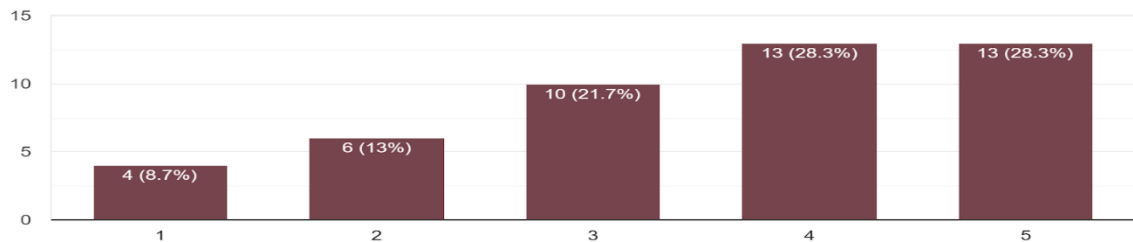
2. Productivity - I am a pre-service teacher who - d) Manages time effectively for everyday activities

46 responses
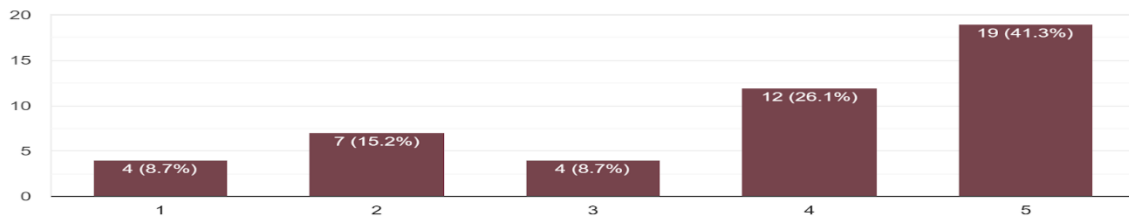
e) Submits reports on time

46 responses
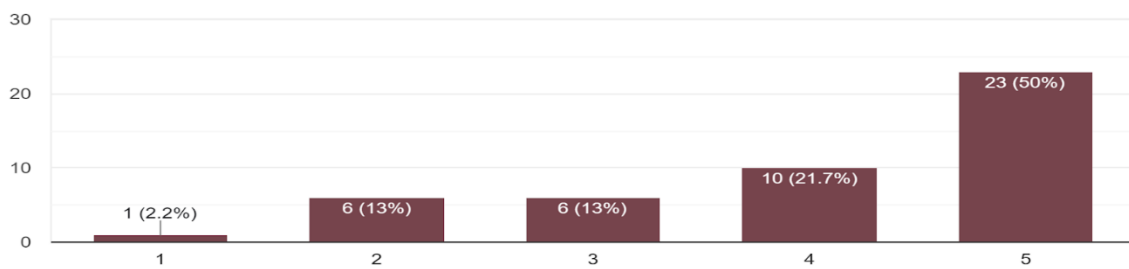
f) Maintains work-life balance

46 responses
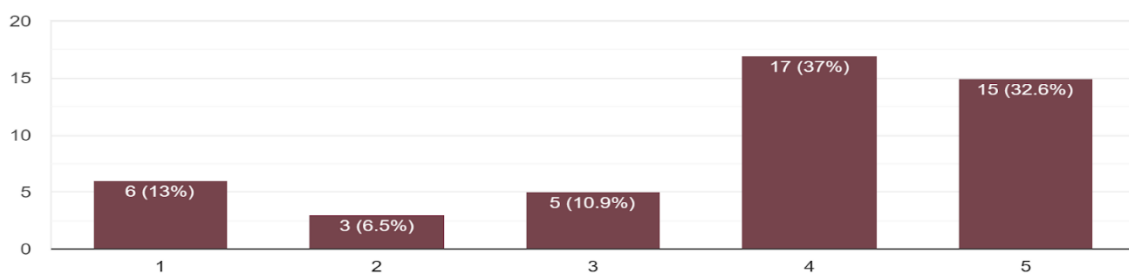
3. Social & Cross-cultural Skills - I am a pre-service teacher who - g) Compliments others

46 responses
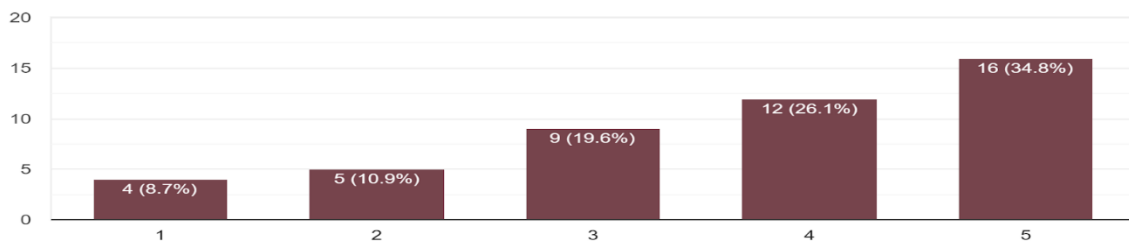
h) Accepts responsibility to own behavior
46 responses
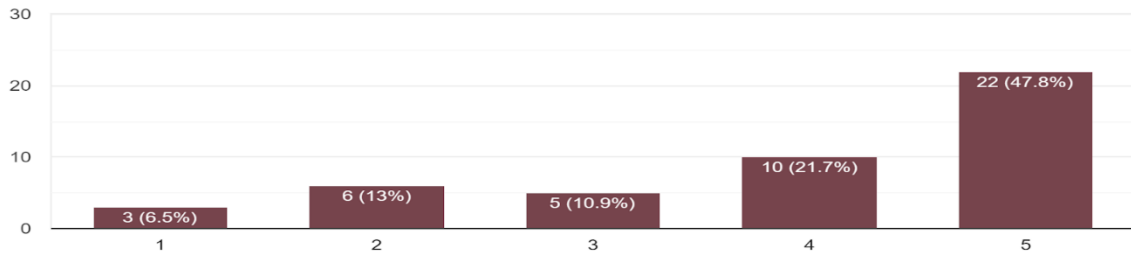
i) Respects individual differences
46 responses
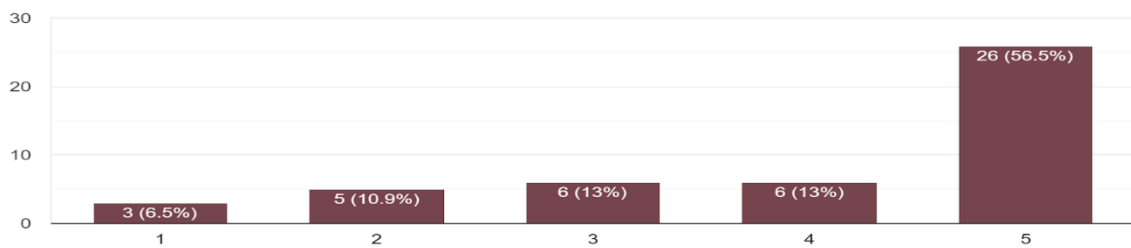
Sl No	21st Century Skills of Pre-service teachers	Never	Rarely	Sometimes	Often	Always
1	Information Literacy	a, b, c Less %	-	-	b More %	a, c More %
2	Technology Skills	g, h, i Less %	-	-	g, h More %	i More %
3	Media Literacy	d, e , f Less %	-	-	e, f More %	d More %
4	Creativity	a, b, c Less %	-	c More %	-	a, b More %
5	Critical Thinking	d, e, f Less %	-	f More %	-	d, e More %
6	Self-direction	g, h, i Less %	-		-	g, h, i More %
7	Collaboration & Team work	a, b, c, d, e & f Less %	d More %	-	-	a, b, c, e & f More %
8	Interactive communication	g, h, i Less %	-	g More %	i More %	h More %
9	Flexibility	a, b, c Less %	-	-	c More %	a, b More %
10	Productivity	d, e, f Less %	-	-	f More %	d, e More %
11	Social & Cross-cultural skills,	g, h, i Less %	-	-	-	g, h, i More %

CONCLUSION :

The updating of competencies and re-skilling will be very much required in the near future, which could be because of the advancements in the rapid technology that exists in our workplace and day-to-day life activities. Therefore, to cope with these fast changes, people must have to change into a Life-long leaner & also develop 21st century skills.

21st Century skills framework has identified a set of required 21st century skills which are presented and discussed. This paper also emphasized pedagogies which the current Education systems should apply in the process of teaching and learning which emphasizes the development of the 21st century skills like Digital literacy, communication, collaboration, critical thinking, problem-solving, decision making and creativity, thus results in fostering Life-long learning.

IMPLICATIONS & SUGGESTIONS

1. 1.Information Literacy- Always, there is a need for information, utilizing relevant information from credible sources and to use communicating information ethically.
2. 2.Media Literacy- Always, there is usage of appropriate media to enhance student learning, utilize online media as learning platform, integrate digital media & traditional media.
3. 3.Technology Skills- Always and often, digital tools have to be incorporated which improves teaching and learning process, encourage students to incorporate digital tools for learning, effectively use instructional materials in the classroom.
4. 4.Creativity- Always, new approaches have to be tried to get things done, offer diverse ideas & to be resilient when confronted with challenges or setbacks.
5. 5.Critical thinking- Students always think of solutions rather than problems, evaluate evidences that support an argument before making a decision, use follow-up questions that focus/broaden injury.
6. 6.Self direction- Students always set self-objectives & goals, actively involve in continuing professional development activities regularly, responsible for professional growth & development.
7. Collaboration & Team work- Always, they share leadership, know when to lead & when to follow, address challenges in the team through discussion & consensus-building activities, assist others to improve the team's overall performance.
8. Interpersonal Skills- They are always comfortable in providing constructive feedback, maintaining good relationship with all members of the team.
9. Interactive communication- They always ask probing questions that lead to greater understanding &concerns promptly, know how to listen actively.
10. Flexibility- Always and often, they effectively perform task as a pre-service teacher and other extra-curricular assignments, handle millennial and new generation well, accept that there are things need to be adapted.
11. Productivity- They always know managing time effectively for everyday activities, submit reports on time, maintain work-life balance.
12. Social & Cross-cultural skills- They always compliment others, accepts responsibility to own behavior, respects individual differences.
13. These are the skills(21st Century skills), the students need to develop in order to thrive in today's and tomorrow's dynamic workplace, increase their ability to work cross-culturally, and be able to take on positions of leadership.
14. 21st Century skills are the tools that can be universally applied to enhance ways of thinking, learning, working and living in the world.
15. These skills are intended to help students keep up with the lighting-pace of today's modern markets. Each skill is unique in how it helps students, but they all have one quality in common. They are essential in the age of the Internet.
16. Workshops can be run to equip teachers to use new teaching strategies or educational software, giving them hands-on demonstrations and offering concrete entry points to bring it into their classroom.
17. There is a great demand to build staff capacity to demonstrate 21st Century skills in support of student learning, develop strategies to support teachers with implementation of 21st century skills.
18. Equipping educators with data to proactively identify and support students who are off track, by making data-driven decisions about the best way to keep each student on track.

19. Survey can be carried out to know about the reflection of development of 21st century, socio-emotional skills on students.

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APPENDIX

ENABLING LIFE-LONG LEARNING THROUGH DEVELOPMENT OF 21stCENTURY SKILLS

The questionnaire (developed by Jan Oliver de Leon, University of Makati) consists of 2 parts (Part I- Demographic information, Part II- 21st Century Skills of Pre-service teachers) & will not take more than 20 minutes to complete. All responses will be kept anonymous & names of participants will not be known.

Part I- Profile of Pre-service teacher:

Instruction: Please check the box that corresponds to your answers.

Name:

Sex: (   ) Male
       (   ) Female

Educational Qualification : (   ) Bachelor's Degree
                            (   ) Master's Degree

Stream of Specialization : (   ) Arts
                            (   ) Science
                            (   ) Commerce

Part II- 21st Century Skills of Pre-service teacher :

Instruction: Please check the box that corresponds to your answer in terms of Frequency of your 21st Century Skills based on the following indicators :

1-Never, 2- Rarely, 3- Sometimes, 4- Often, 5- Always.

Sl No	Statements	Never	Rarely	Sometimes	Often	Always
I	Information, Media & Technology Skills					
	I am a pre-service teacher who-					
1	Information Literacy					
	a) Knows when there is a need for information					
	b)Utilizes relevant information from credible sources					
	c)Considers the ethical use of communicating information					
2	Media Literacy					
	d)Uses appropriate media to enhance student learning					
	e)Utilizes online media as a learning platform					
	f)Integrates digital media & traditional media					
3	Technology Skills					
	g)Incorporates digital tools to improve overall teaching and learning process					
	h)Encourages students to incorporate digital tools for learning					
	i)Effectively uses instructional materials in the classroom					
II	Learning & Innovation Skills					
	I am a pre-service teacher who-					
1	Creativity					
	a)Tries new approaches to get things done					
	b)Offers diverse ideas					
	c)Is resilient when confronted with challenges or setbacks					
2	Critical thinking					
	d)Thinks of solutions rather than problems					
	e)Evaluates evidences that support an argument before making a decision					
	f)Uses follow-up questions that focus or broaden injury					
3	Self-direction					
	g)Sets Self-objective & goals					
	h)Actively involves myself in continuing professional development activities regularly					
	i)Is responsible for my professional growth & development					
III	Effective Communication Skills					
	I am a pre-service teacher who-					
1	Collaboration & Teamwork					
	a)Shares leadership; known when to lead and when to follow					
	b)Addresses challenges in the team through discussion and consensus-building activities					

		c)Assists others to improve the team's overall performance					
	2	Interpersonal Skills					
		d)Is comfortable in providing constructive feedback					
		e)Is comfortable in receiving constructive feedback					
		f)Maintains good relationship to all members of the team					
	3	Interactive communication					
		g)Asks probing questions that lead to greater understanding & critical thinking					
		h)Answers questions & concerns promptly					
		i)Knows how to listen actively					
IV		Life and Career Skills					
		I am a pre-service teacher who-					
	1	Flexibility					
		a)Effectively performs my task as a pre-service teacher & other extra-curricular assignments b)Handles millennial & the new generation well					
		b)Handles millennial & the new generation well					
		c)Accepts that there are things I don't know & needs to adapt					
	2	Productivity					
		d)Manages time effectively for everyday activities					
		e)Submits reports on time					
		f)Maintains work-life balance					
	3	Social & Cross-cultural Skills					
		g)Compliments others					
		h)Accepts responsibility to own behaviour					
		i)Respects individual differences					