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RESEARCH ARTICLE

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Education Students' Health Care System and Disease Awareness During the Covid-19 Pandemic

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Abstract: **Introduction:** Healthcare access remains to be a major global issue, resulting in more serious health concerns among students. Hence, recognizing the health care system and diseases in Iloilo city is critical in understanding the nature of environmental exposures of education students during the COVID-19 pandemic. **Objective:** This study determined education students' level of awareness on the health care system and diseases during the COVID-19 pandemic. **Methods:** This descriptive-correlational research study utilized a duly-validated researcher-made questionnaire and was administered through Google Forms among the thirty (30) conveniently selected education students. The statistical tools used were: mean, standard deviation, and Pearson's R testing set at .05 level of significance. All statistical computations were processed using Statistical Package for Social Sciences (SPSS). **Results:** The results showed that education students were slightly aware (M = 2.44, SD = 0.24). Moreover, there were significantly high positive correlations (r(26) =0.752, p=0.001) on the access to medical care, location of health facilities, the spread of diseases common in the area, health, and average lifespan of Ilonggos. **Conclusion:** Awareness of sustainable healthcare system and prevention of diseases among students will stimulate wider discernment of health care access and services, especially during the COVID-19 pandemic and even in the new normal.

Keywords: Health care system, Diseases, Awareness, Education students

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1.1 Background of the Study

The link between education and health is never apparent. Poor health can generate educational setbacks and interfere with education, not simply as a result of poor educational attainment (Center on Society and Health, 2015). Our health and well-being are affected by our social, physical, and environmental surroundings in ways that are intimately related to health policy. Environmental hazards, as well as many other health consequences, are heavily determined by spatial location (the geographic context of locations and the connectivity between them). The location of health-care facilities, the targeting of public-health measures, and the monitoring of disease outbreaks, for example, all have a geographical context (Dorling, Shaw, and Tunstall, 2014). Furthermore, the Philippine Constitution of 1987 recognizes health as a fundamental human right. In the Philippines, this is given through a dual health-care delivery system that includes both the public and private sectors. Health services are supplied by government facilities under the national and municipal governments, and the public sector is mainly funded through a tax-based budgeting system (World Health Organization, 2018).

Health-care access has an influence on a person's entire physical, social, and mental health, as well as their quality of life. There is a need to understand illness risk factors and how they interact with the social, built, and natural settings, such as genetics, lifestyle, environment, and profession (Lagomarsino, Garabrant, Adyas, Muga, & Otoo, 2012). Also, healthcare access continues to be a major worldwide problem which leads to a more serious concern and widespread of untreated diseases. According to a recent research by the World Health Organization (WHO) and the World Bank (2015), about 400 million people throughout the world do not have access to basic healthcare services. Abrigo and Paqueo (2017) states that policy responses to improve access to healthcare services vary by country, but generally range from more traditional supply-side interventions, such as direct provision of healthcare services, to more recent innovations, such as the expansion of social health insurance and the introduction of conditional cash transfer programs, to induce healthcare demand (Tangcharoensathien & Palu, 2015). Social health insurance appears to be the most prevalent demand-side intervention with many of the major reforms implemented in recent years (Lagomarsino, et. al, 2012). Poor chronic illness management, increased burden from avoidable diseases and disability, and early mortality are among potential health consequences of limited health care access (Gulliford, 2020).

Equitable access to education and health care is regarded as one of the pillars of greater community capacity across societies (Nunn et. al, 2008). In the light of these realities and with the aim of contributing valuable information, the researchers seek to determine education students' level of awareness on health care system and diseases during the COVID-19 pandemic. Furthermore, it is hypothesized that there was no statistically significant relationship in the respondent's level of awareness. Thus, this study was undertaken.

2.0 Methodology

2. 1 Purpose of the Study and Research Design

A descriptive-correlational method of research was used in this study which aims to describe the variables and the relationships that occur naturally between and among them. (Driessnack et. al, 2007). The descriptive-correlational design fits well into this study for it intends to determine the relationship on education students' level of awareness on health care system and diseases during the COVID-19 pandemic as a potential basis for its comprehensive dissemination.

2. 2 Respondents

The respondents of the study were thirty (30) education students who were currently residing in the city of Iloilo. The convenient sampling technique was employed in the selection of the respondents of the study.

2. 3 Instrumentation

This study utilized a duly-validated researcher-made questionnaire administered through Google Forms. The draft of the questionnaire was drawn out based on the researcher's readings, previous studies, professional literature, published and unpublished research relevant to the study. The said instrument was composed of 20 questions. 4 point Likert scale in conjunction with the mean and ranking scheme was utilized.

The following are the scales used to indicate the education students' level of awareness on the health care system and diseases during the COVID-19 pandemic.

Responses	Assigned Score
Highly Aware	4
Aware	3
Slightly Aware	2
Not Aware	1

2.4 Data Gathering Procedure

After the letter of permission to conduct the study was approved by the Dean, the questionnaire was administered to the respondents of the study through messenger and e-mail. Responses were generated through Google forms which were disseminated last September 6-11, 2021. Thirty (30) copies of the questionnaire given out were successfully completed and retrieved. After data gathering, the researchers tallied the responses and underwent statistical treatment. The Likert scale for interpreting the level of awareness is as follows.

Scale	Description
3.26-4.00	Highly Aware
2.51-3.25	Aware
1.76-2.50	Slightly Aware
1.00-1.75	Not Aware

2. 5 Data Analysis Procedure

The collected data were analyzed using quantitative data analysis approaches. The descriptive analysis uses frequencies, percentages, mean, and standard deviation while inferential statistics uses one-way Pearson's r to present quantitative data collected from students using questionnaires. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 20 testing set at .05 level of significance. The scale of interpreting the correlations is as follows.

Scale	Description
0.90-1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70-0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50-0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30-0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00-0.30 (0.00 to -0.30)	Negligible correlation

3.1 Results

Table 1. *Education Students' Awareness on Health Care System and Diseases during the COVID-19 Pandemic*

	M	SD	VI
Access to medical care	2.38	0.17	Slightly Aware
Location of health facilities	2.86	0.55	Aware
The spread of diseases common in the area	2.42	0.79	Slightly Aware
Health and average lifespan of Ilonggos	2.08	0.70	Slightly Aware
Congregated Result	**2.44**	**0.24**	**Slightly Aware**

Legend: M –Mean; VI – Verbal Interpretation; (3.26 - 4.00) - Highly Aware; (2.51 – 3.25) – Aware; (1.76 - 2.50) - Least Aware; (1.00 - 1.75) – Unaware

Table 1 tells education students' level of awareness on the health care system and diseases during the COVID-19 pandemic. Specifically, the data revealed that they were aware of the location of healthcare facilities in the city (M=2.86, SD=0.55), yet were slightly aware of their access to medical care (M=2.38, SD=0.17), the localized spread of diseases (M=2.42, SD=0.79), and the city population's health and average lifespan (M=2.08, SD=0.70) which prompted that overall, education students were slightly aware in regards to the healthcare system and diseases in the city (M=2.44, SD=0.24).

Table 2. *Relationship of Education Students' Awareness on access to medical care, location of health facilities, the spread of diseases common in the area, health and average lifespan of Ilonggos*

Variables	Access to medical care		Location of health facilities		Spread of diseases common in the area		Health and average Lifespan of Ilonggos	
	R	*p*	*r*	*p*	*r*	*p*	*r*	*P*
Access to medical care	-	-	-	-	-	-	-	-
Location of health facilities	.599*	-	-	-	-	-	-	-
Spread of diseases common in the area	.752*	-	.685*	-	-	-	-	-
Health and average Lifespan of Ilonggos	.796*	-	.590*	.001	.800*	-	-	-

*Note**. Correlation is significant at the 0.05 level (2-tailed).

The result showed that there were significant high positive correlations (r (26) =0.752, p=0.001) towards education students' awareness on access to medical care, location of health facilities, spread of diseases common in the area, health and average lifespan of Ilonggos.

4.1 Discussion

Improvements in medical treatment and healthcare systems have resulted in higher survival rates from disease and injury, with many people continuing to live with some form of residual impairment. From the findings of the study, education students were moderately aware but not completely informed on the health care system and diseases during the COVID-19 pandemic. With this, they were not able to fully practice their privileges as citizens who are given the right to proper healthcare.

This indicates that there lies a need to widen their awareness to fully convey their demands to health care experts, navigate, and take advantage of available healthcare privileges while prolonging the average lifespan of the city given that the poll done by 2nd PhilCare Index (2019) showed that Ilonggos are among the most stressed of all Filipinos (Daily Guardian, 2019). Life expectancy is influenced by factors relating to a person's quality of life, such as high stress, as well as traditional lifestyle-associated risk factors (National Institute for Health and Welfare, 2020). Imperatively, stress is confirmed to have a relation with suicidal thinking (Rosiek et al., 2016) and it is no coincidence (Conserva, 2020) that the Iloilo Police Provincial Office recorded 78 suicide cases in 2019 and 63 further incidents from January 1 to September 15, 2020. Consequently, Pedroso (2021) affirms that Ilonggo students battle to keep up with academic expectations. Feizi, Aliyari, and Roohafza (2012) purport that personal qualities, lifestyle, social support, and appraisal of the stressors, life events, and sociodemographic and occupational variables can all influence the degree of stress experienced and how a person reacts to it. On the contrary, Ilonggos' tenacious lifestyle and traditions have persisted and are still prominent today (Pedroso, 2021) continuously making everyone resilient during the pandemic.

However, the findings of this study suggested that the lack of information among Ilonggos not only makes it difficult for them to get services, but it also makes them politically vulnerable as major participants in the system's management. (Pridmore, Thomas, Havemann, et al., 2007). Accordingly, for screening and early identification, it is critical to be aware of disease and symptoms. During the COVID-19 outbreak, videoconferencing technology has shown to be a valuable platform for facilitating and supporting teaching initiatives (Pedroso et al., 2021). When people are aware of an illness and its symptoms, they are more likely to take steps to prevent it from happening to them or to seek medical attention for routine checkups. (Roche, 2021). As awareness is crucial in the efforts to improve healthcare access, it provides relevant tools, knowledge, and skills to communities, medical professionals, and patients so that they can make high-quality, educated decisions about prevention, diagnosis, treatment, care, and support (Merck, 2018). In the same way, disease awareness entails understanding the elements that cause disease, its symptoms, and how to prevent it. Disease knowledge is essential for living a healthy life (Apollo Homecare, 2021). As a result, delivering precise and factual information during public health emergencies like the pandemic is a critical component of epidemic management methods. Early knowledge of the illness outbreak will assist the general public in understanding risk behavior and responding quickly to the outbreak (Balkhy et al. 2010). Educational seminars and learning activities that provide experiential and meaningful learning boost students' understanding (Pedroso, 2021). It follows that, if people are not aware of diseases and healthcare options it keeps them from taking preventative action or from visiting their doctor and accessing care.

The findings also support the concepts put forth by the 2nd PhilCare Wellness Index in the year 2019, as they found out that Ilonggos are better able to pay their medical bills and see their doctors and dentists on a more regular basis than the rest of the country (Daily Guardian, 2019). According to the survey conducted between ages 18-90 years old, Iloilo led in most other elements of wellness in the Visayas. Ilonggos enjoy the most leisure time, are the most health-conscious, are the most content with their personal life, and are also the most financially capable of the region's population (Daily Guardian, 2019). Furthermore, Iloilo topped the medical wellness domain countrywide with a score of 2.61 or "good". Ilonggos could be a role model for Filipinos when it comes to preparing for medical emergencies (Paragas, 2019). In contrast, in the US over half of all Americans lack copies of essential personal documents. Documents such as insurance forms, medical, vital, and immunization records should be collected and kept safe. Given the numerous warnings that a new epidemic will ultimately develop, as well as the abundance of information and lessons acquired from previous epidemics, this lack of readiness is particularly startling.

Even so, the Centers for Disease Control and Prevention (2018) highlights that potentially life-threatening circumstances have actual consequences for personal and public health. Furthermore, health disaster preparation exercises were found to improve participants' understanding of emergency activities, policies, and procedures, as well as their general competence and confidence (post-exercise) (Skryabina, et al., (2017). Due to the particular nature of the COVID-19 crisis, which entails a large level of stress and uncertainty, the leader's personality attributes and leadership style are crucial in creating trust and responsibility within the organization (Pedroso, Siason, Tiangco-Siason, 2021). Therefore, to improve access to healthcare, people must first learn to raise their awareness. Providing communities, medical professionals, and patients with the tools, information, and skills they need to make good decisions about prevention, diagnosis, treatment, care, and support will lead to the mitigation of the effects of diseases.

5.1 Conclusion

The education students were fairly cognizant of the locations of health facilities within the Iloilo city. However, information about the spread of common diseases offered health care services and health status within the area still needs more dissemination. It is also revealed that the casual attitudes of ordinary education students on health care issues are because of inequality, while it still exists in the society, is never a serious problem in the city. In this regard, full awareness of the community should be addressed in as much as it is in a viable position to stimulate wider discernment of health care access and services through in-depth academic discussions and may take active participation in local and national health care equality advocacy, and seminars. Sustainability of the health care system within the city should be ensured and the authorities should give more advocacy to health-initiated programs which could raise students' level of awareness and involvement as well. It is also revealed that the casual attitudes of ordinary education students on health care issues are because of inequality, while it still exists in the society, is never a serious problem in the city.

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A Teachers' Journey: Phenomenological Analysis in Teaching Research

Dr Reynaldo V. Moral[1]

Abstract: This study portrays the lived experiences of some research teachers from different public and private schools in Cebu City who taught specific research subjects in the senior high schools for the first semester of 2018-2019. The main goal of this study is to explore the educational practices of the nine teacher respondents based on their trials, adjustments, managing mechanisms, who showed willingness to participate. The descriptive phenomenological design was used by the researcher from Husserlian philosophy using Colaizzi Data Analysis. Semi-structured interviews were collated and coded after bracketing. Furthermore, the field notes were used for the informants upon asking their consent as a form ethical consideration. The highlights of the experiences of these research teachers are condensed in the following themes: "Different Strokes for Different Strokes"; "Invest and Harvest"; "Art of Communication"; "Between Hard and Soft"; Time will Reveal"; and "Technology Conquers Limitations." Results also showed that the research teachers still consider the whole experience worthwhile and beneficial despite "scanty of instructional materials and relevant trainings" which has long been a predicament in enriching the curriculum.

Keywords: Research teacher, Senior high school, Phenomenology, Challenges, Creativity

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1.1 Introduction

Evidenced-based practice involves systematic, deliberate, and self-critical-inquiry about a research teacher as a practitioner modelled by professional action in education which is desirable especially on teaching research (Borg, 2006). There are several advantages for teachers engaging these activities as exemplified by Kincheloe (2003) such as the benefits of teaching research, in-depth and enrichment ways from their experiences, functional learners on the art of questioning, crafters of knowledge on enhancing their professional needs and current trends of education as well as a continuous exploration of the phenomena in the classroom setting that are subject for interpretation.

Additionally, the improvement of teaching profession inspired the teachers in response to the changing conditions when they are more engaged with their senior high school students with this developing K-12 curriculum of the Department of Education. Their students' learning was also investigated to validate the progress. Thus, different strategies and professional attributes influenced the research teachers through attending relevant trainings and seminar-workshops, conducting action research pertaining to issues and be shared its findings during in-service trainings (Hei & David, 2017).

The concept of research is relative to the work of practitioners, administrators, and lawmakers. Much more in the field of the academe wherein professional education has a strong and continuous advocacy of learning, analysis of findings, behavioral adaptation, and conforming institutional standards for quality education (Pamatmat, 2016). Therefore, undergoing research is a responsibility to be functioned by scholarly investigators in various disciplines without taking for granted their queries to be answered with authentic dissemination of the report.

This paper aimed to gain deeper understanding on the lived experiences – the aspirations, challenges, adjustments, and their coping mechanisms of the research teachers at senior high school students in private and public schools in Cebu City during the first semester of school year 2018-2019. Moreover, these research teacher participants 'fortunately' or 'unfortunately' were thirsty in strengthening the links between research and teaching. It also sought to assess whether the curriculum provided by the academe is relevant and useful to the actual carry out teaching considering that not much has been published about high school teachers' aspirations and beliefs about research, and their actual experience with it. These are viewed very helpful as basis for curriculum revisiting and enrichment to really promote the research culture in the Department of Education- secondary level as well as in similar contexts.

1.2 Theoretical Underpinnings

From the curriculum guide of senior high school Practical Research 1, the nature of inquiry and research are the two terms to be tackled in the content standard. Both involve investigative work in which the researcher seeks information about something by searching or examining the object of research (Baraceros, 2016).

Inquiry-based learning gets its support from John Dewey's theory "Learning by Doing" as cited by Gandhi (in Malagar, Villarba, & Bonotan, 2016). The following assumptions of learning by doing are specified as experiential learning to wit:

- Individuals learn best when they are engaged in different learning experiences.
- Information has to be revealed through significant meanings and behavior; and
- The independence of learning is a commitment for every engaged individual to attain the highest learning given the objectives and the framework.

Moreover, when something has been experienced, there are sufferings to be undergone, therefore. The act of doing something on these things will bring back something good in return, and maybe in an unusual setting for an inquirer. These connecting phases measure the success of activities experienced by the teacher-researcher with their students (Dewey, 1997).

The Theory of Skills Acquisition by Dreyfus postulated that behaviour and rationality of three to five years of experience were considered novice. But with more than five years of experience, there is a potential development of skills reaching up to the level of being an expert (Wallace & Irons, 2010).

1.3 Ethical Considerations

Following the research ethics protocol, a brief background of the study to the prospective participants was given to them underscoring its merits and benefits. The researcher then asked for the participants' informed consent. Once the participants expressed their willingness to be interviewed, only then did the interview begin. Permission was asked for the audio taping of the conversation for greater accuracy of the data collection. The confidentiality and anonymity would be strictly observed from the participants as an assurance. The interview questions were open-ended questions which include the opinions, attitudes, and perceptions of the research teachers in the senior high school students, and the preparation and coping mechanism of the participants to adapt to their unique situation. The participants were also asked to fill up a written form about their demographical data and checklist regarding their attitudes toward research. The demographic data and checklist on participants were stores separately from the code books culled from the recordings.

2.1 Research Method

This study make used of descriptive phenomenological study based on Husserlian philosophical approach and Colaizzi's method for qualitative data analysis. The philosophical stance of Husserlian phenomenology is that of the lived, human experience and as such it required to restore the human world as a basis of science that brought justice to the everyday lived experience (Christensen, Welch, & Barr, 2017). Moreover, the rich and multifaceted source of undeclared meaning connected with being and experiencing shapes an individual understands of their lifeworld. On the other hand, descriptive phenomenology, is regarded as a valuable for qualitative design or methodical tool for focusing on research questions to probe and enlighten about a phenomenon by providing images to capture meanings of the situations (Malagar, Villarba, & Bonotan, 2016).

The main instrument of this study was the researcher himself who conducted in-depth interview with the participants to generate data about the participants' personal and professional experiences. Since the goal of phenomenological interviewing is to describe the meaning of some events, from the lens of the participants and not of the researcher, a central concern is for the researcher to hold in abeyance, one's own presuppositions regarding the experience to be described – a process termed bracketing (Pollo, Henly & Thompson, Kornhaber in Malagar et al. 2016). It refers to the suspension of one's beliefs, assumptions, preconceptions, and biases related to the phenomenon under investigation so that the phenomenon can be seen with a fresh approach. This is a fundamental concept aligned to Husserlian philosophy which ensures a trustworthy description of the phenomenon.

2.2 Participants of the Study

There are Nine (9) faculty or basic educators from different secondary public and private institutions in Cebu City were purposely chosen as participants/informants of this research study. The informants comprising of 6 females and 3 males; among them, 5 are married, 4 are single and the age group ranges from 25-45 years old. As regards to educational attainment, two (2) have completed their post graduate studies, four (4) have completed the master's degree, and three (3) hold bachelor's degree with master's units. Three (3) of them are teaching research in the science class in the public junior high school, two (2) are teaching in the public high school, one (1) in the state university (1) in science high school, Cebu; and two (2) from private institutions. As to research subjects taught, three (3) are teaching Research 1 and 2 in Grades 8 and 9; one (1) is teaching Creative Investigations (CI) and Practical Research 2; and the remaining five (5) are assigned to teach either Practical Research subjects, or Mixed research. In terms of employment status, majority are holding a regular permanent status, while only one (1) is a newly hired. When it comes to research outputs produced, all regular permanent teachers have completed their theses except for the only one (1) respondent who was able to publish an international journal and presented a research congress. They have been teaching for several years which made them part of the research sample.

3.1 Findings And Discussion

The highlights of the lived experiences of the research teachers are condensed in the following themes:

- "Different Strokes for Different Folks"
- "Invest and Harvest"
- "Art of Communication"
- "Between Hard and Soft"
- "Time will Reveal"
- "Technology Conquers Limitations"

Theme 1: "Different Strokes for Different Folks"

The participants coming from different schools and grade levels are prepared to teach according to there are of specialization. However, their teaching styles vary as they describe their student's learning style and the compelling reasons to have more training in research methods. They truly admitted that their experiences in teaching prior to the opening of the senior high school research subjects are not enough considering the complexity and scope of research methods. With more than five years' experience, one may potentially develop skills to the level described as expert. As a participant shared:

> "Teaching research, it was quite tedious at first but overtime I learned to employ some strategies which made it easier for me to teach the subject. Most of the time, I used the lecture method then I had the one-one-one mentoring which proved to be very helpful and effective." (INF#4, Line 14-18)

Participants 6 and 2 added that

> "My experiences in teaching research have been a roller coaster ride. At times I feel so hyped and energetic especially if I am well-conditioned like I've had enough sleep the prior night and the topic that we'll be dealing is too easy. There are also moments wherein I regret teaching the subject and I feel I am not crafted for it." (INF#2, Line 10-15)

Theme 2: "Invest and Harvest"

Some of the participants remarked that teaching research is a form of investment. For what they have sown could be reaped a hundred folds out of their prowess. They were able to cope with all those challenges they have faced through their courage, support system and camaraderie. As mentioned by a participant:

> "As a newbie in the field of teaching research, I have experiences things I considered useful and essential not just only for the students, but also a platform for me to expound my learning and explore more. I also have learned that is not easy as frying eggs, but as fulfilled as a noble teacher when you have witnessed that students learned and found the essence of research significant to their lives and to the society…that I have helped my students to wonder what's beyond the theories and guided them to experience and experiment." (INF#3, Line 11-20)

Theme 3: "Art of Communication"

Since learning is a continuous process, the modes of communication in research can be intensively done especially in providing the research teachers with many ideas about how they can design and carry out their art of teaching effectively. Thus, some participants value the importance of communication as they said in part:

> "I also account my experiences and learned managed my time especially in reading useful manuscripts, journals, and other print media essential to address my students' queries." (INF#3, Line 53-56)

> "The struggles that I usually encountered were the lack of resource book, facilities like library, equipment's, computers that used to upgrade, also the lack of support." (INF#5, Line 9-11)

Theme 4: "Between Hard and Soft"

Research studies happen in any field of knowledge. On the other hand, some research teachers claimed that their teaching experience influence their performance according to their adjustments as they have used to teach based on their majors.This was affirmed by participants who were once teaching hard sciences (natural science) and soft sciences (humanities and social sciences) in the junior high school level saying:

> "Particularly, those struggles most of the time are the topics that are not really related in my field though it is really related in science…they have many topics, struggles, and research design I am not comfortable which I am not familiar with, but because I used to do experimental activities, though I know some research designs like descriptive chosen by students...Not really a mismatch because it still science. Though specific to teaching physics, there are some points that they could relate. But not that really sharp." (INF#7, Line 27-32, 51-53)

Theme 5: "Time will Reveal"

Research is time consuming. In other words, research teachers who are conducting research study and even budget the content standard from the curriculum guide or syllabi should be conscious enough on the characteristic of prudence. Thus, the participants commented:

> "It took them much time to ponder on research problem to the point that I ended up spoon-feeding it to them…Next is their poor time management. As observed, most of them procrastinate, thus submitting their group outputs on time became an issue." (INF#4, Line 33-34, 39-41)

> "In teaching research as we all know, research is time consuming, takes dedication, patience, finding the cause and effects, and whys and how's. In doing so, we must have a time, but one of the challenges especially for single moms they have other things to do aside from…" (INF#9, Line 7-11)

Theme 6: "Technology Conquers Limitations"

With the surge in the use of information and communication technology, there is a need to have standardized and more reliable research. However, assessing the improvement in research as well as academic writing skills is subject for upgrading due to scantiness of technological equipment. Informants 5 suggested:

> "It would be better if there was an internet connection so that there will be an easy access to information when they are searching." (INF#5, Line 22-23)

4.1 Conclusion

This phenomenological study distilled the essence of what is like to be a research teacher in the secondary level. It is like "different strokes for different folks" comprising groups of teachers who teach in various ways. One must invest to harvest; and in return it would turn into an effective tool in teaching effectively and produce graduates that are valuable in society. They realized that the art of communication in teaching research plays a significant role especially in the field of reading and asking guide from their colleagues through exchanging of ideas during scanty teaching resources. The informants confronted to accept these challenges even if their experiences were not enough due to lack of training resulting to admit the fact that their specific major is aligned to hard or soft sciences. Their efficiency in teaching research needs ample time; more so in producing related research outputs that are in high demand and for personal and professional growth. Based on their experiences, they still aspired to accept the challenge with the hope of providing them with available and adequate technology which conquers limitation in teaching diverse learners.

Recommendation

The following recommendations have been developed from the data collected as part of this research. Recommendations are being made in three categories:

Senior High School Teachers who need more knowledge in teaching research should consider: 1) a meticulous reading of research materials such as journals, research books, and monographs having different research designs; 2) pursue research culture by finishing their post-graduate studies and participate in research congress; and 3) teachers should be reduced with teaching loads in order to have time doing an action research mandated by the Department of Education.

School heads may consider: 1) initiating in putting a functional research and development office to enhance their teachers' basic pedagogical knowledge from the standpoint of Philippine Professional Standards for Teachers (PPST); and 2) inviting expert to conduct seminar-workshops to educate their teachers regarding educational research since they are considered as instructional leaders during their respective Learning Action Cell (LAC) session.

A parallel study is recommended to expand the scope of this study. Considering its limited scope and methodology, the researcher recommends the following research topics to serve as an additional development and verify during in-service trainings or learning action cell session. The inclusion of others in this study is strongly adhered and is addressed to the master teachers, head teachers, and school heads as instructional leaders.

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Review of Teacher's World

RESEARCH ARTICLE

Impact of Self – Esteem on Self – Concept in Mathematics among Pre-Service Teachers in Selected Higher Education in Zamboanga City

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Abstract: Various researches have shown the importance of enhancing self–esteem with several cognitive factors, such as self–concept. Several studies also revealed a strong causal relationship between self–esteem and self–concept in Mathematics. However, none or little has been known how self – esteem can affect self–concept in Mathematics among pre-service teachers. As future educators, developing positive self – esteem and positive self – concept in Mathematics during the pre-service teaching period are encouraged since learning Mathematics provides foundational knowledge in teaching other school subjects, such as Engineering, Science, Art, Music, and Electronics and various fields and disciplines. This study therefore, investigated the impact of self–esteem on the self-concept in Mathematics among pre-service teachers. Three research questions and one hypothesis guided this study. This utilized descriptive survey design and data were obtained online thru Google Forms. A sample of 135 pre-service teachers from a selected university in Zamboanga City was chosen randomly through proportionate and systematic sampling procedures. This study adapted Math – Specific Self-Esteem questionnaire by Reyna (2000) and the Self-Description Questionnaire by Marsh, et. al (1985). This was validated by the research instructor and subject matter experts, and both attained acceptable reliability coefficients during the pilot testing based on the computed Cronbach's alpha. Frequency tables, mean, standard deviation, Pearson – r correlation were utilized to analyse the data. Findings revealed that pre-service teachers had moderate self-esteem and self–concept level. Results also showed that there was a significant positive correlation between the two variables. This study recommends that math teachers in higher education create learning activities that can foster positive self–esteem and self-concept in Mathematics among pre-service teachers.

Keywords: Self - esteem, Self – concept, Mathematics and Pre-service Teachers

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1.1 Introduction

In order to improve teaching-learning and decision-making processes in school, teachers and school administrators are encouraged to conduct researches. Teachers, Parents, and administrators are commonly concerned about self-esteem; through self-esteem, pre-service teachers will have the benefits and disadvantages of teaching soon. Self-esteem is an apex part of success (Christou et al.2001), it will help them build the self-concept that they needed to deliver any topics properly with confidence, and through self-esteem, it will build up well-trained teachers. Pre-service teachers teach Math among College students preparing to become teachers and embrace feelings, emotions, and self-esteem.

Many researchers over eras emphasized the need for self-esteem as a fundamental aspect of life; the notable researcher, psychologist and academic, Albert Bandura has set forth the significance of self-esteem in his social cognitive psychology theory. Self-esteem, known as self-respect, is the confidence of a student in one's value or abilities. In, the term self-esteem is describing the emotional and cognitive evaluation of our worth. It also has to do with people's emotions that follow from their sense of worthiness or unworthiness. According to Martinez et al. (1982) in a meta-analysis of 202,823 individuals across 128 studies examined the relationship between self- measures (e.g.., self-concept, self-esteem, self-attitude, and self-regard) and standards of performance. Their result showed a low correlation between self-concept and understanding and a negative relationship between mathematics intelligence measures. Duke and Martinez (1994) found a multidimensional characteristic within self-esteem. This study showed a minority status does not affect self-esteem, but it involves a specific self-concept and success. The prominence of self-concept lies in the significant role it plays in character formation. According to Musitu,et al.(1994), Self-concept is understood as the notion a person has of him/herself, based on experiences with others and on how individuals assess their one's behaviour. In particular, this study aims to excavate the type of educational system and the numerous lifespan spent in teacher education programs on pre-service teacher's mathematics and mathematical self-esteem and mathematical self-concept. Many learners are not confident about their mathematical ability to solve problems. A poor attitude toward the discipline is thought to plague learners at every level of schooling. The fear of both answering mathematical questions in class and/or taking mathematical tests has been studied by Tobias (1978), Kelly and Tomhave (1985) and Stodolsky (1985) and often escalates to a level termed mathematics anxiety. Individuals with poor attitudes toward mathematics are often reported to have a low self-concept and feelings of incompetence. These attitudes are manifested as self-deprecating remarks and a perpetual lack of success in mathematics (Tobias, 1978) even though "self-evaluation and anxiety levels are not realistic assessments of their ability" (Gourgey, 1984, p. 15).

1.2 Objective of the Study

This study aims to determine the relationship between the Self-Esteem and Self-Concept of the pre service teachers of the College of Teacher Education of Zamboanga Peninsula Polytechnic State University. Specifically, this study seeks to answer the following questions: (1) what is the profile the pre-service teachers of the College of Teacher Education of Zamboanga Peninsula Polytechnic State University. In terms of, (a)Sex,(b)Course and (c) Major,(d)Age. Duke and Martinez (1994) found a multidimensional characteristic within self-esteem. (2)What is the level of self-esteem in mathematics of Pre-service teachers in terms of: (I) Grade Information (II) Academic Characteristics (III) Mathematics Experience (IV) Attitudes in mathematics (V) Human Influences (VI) Teacher Experience (VII) Self-Motivation Relationship between academic achievement, academic performance and self-esteem at a public school by Amy L. Hall (2007) (3) what is the level of Self-Concept in mathematics of the Pre-Service Teachers? (4) Is there a significant relationship between self-esteem and self-concept in mathematics among pre-service teachers.

2.1 Methodology

In our study, we used a quantitative design with cross-sectional surveys as the research method. Cross-sectional surveys are observational studies in which the study wants to gather data from a subset of the target population at a specific point in time. At any given time, researchers will test a variety of variables. The purpose of these studies is to assess the current situation; they aim to determine the variance or the conditions that explain the change. Cross-sectional studies are easy in structure. The researcher takes a cross-section of the population (a sample) studies it at one time to find the prevalence of a situation {2019}. Cross-sectional studies are systematic studies that look at data from a group of people at one point in time. They are often used to assess the prevalence of health outcomes, comprehend health determinants, and identify population characteristics. Cross-sectional studies, unlike other forms of retrospective studies, do not monitor individuals over time. 'Wang & Cheng 2020' is a project by Wang and Cheng. It will be conducted through a Google form due to the health protocols to be followed by the schools due to the Covid-19 Pandemic. And it will be collected through the use of the internet because we can’t follow the standard procedure due to the situation we are in. Cross-sectional studies are systematic studies that look at data from a group of people at one point in time. They are often used to assess the prevalence of health outcomes, comprehend health determinants, and identify population characteristics. Cross-sectional studies, unlike other forms of retrospective studies, do not monitor individuals over time. 'Wang & Cheng 2020' is a project by Wang and Cheng.

2.2 Study Participants

The population that we are conducting is in the Zamboanga Peninsula Polytechnic State University within the College of Teacher Education. To be followed by our student through 1st year and 4th year Pre service teacher.

Courses in CTE	First year	Second year	Third year	Fourth Year	Total
BEED	3	14	7	6	30
BTLED	13	12	7		32
BTVLED	3	7	10		20
BSED-MATH	4	6	6		16
BSED-TLE				2	2
BPED/ BSED-MAPEH	8	3	6	18	35
Total	31	42	36	26	135

2.3 Sampling Procedure

Stratified Sampling/Systematic Sampling

Course in CTE	N	%	n
BEED	265	23.33	30
BTLED/BSED-TLE	206	18.13	34
BTVTED/BTTE	295	25.97	28
BSED-MATH	116	10.21	16
BPED/BSED-MAPEH	254	22.36	36
Total	1136	100	135

3.1 Results and Discussion

Our study result came from a respondent in Zamboanga Peninsula Polytechnic State College using a cross-sectional survey due to the pandemic situation. We deliver the survey form through the use of online with the platform of Google form application. Stratified sampling is our basis for handling the respondent within the College of Teacher education in Zamboanga Peninsula Polytechnic State College.

Research Problem 1: What is the profile of the respondents in terms of Sex, Age, Course and Year Level?

Table 1 Frequency Distribution of Respondents in terms of Sex and Age

Variable	f	%
Sex		
Male	43	31.85
Female	92	68.1
Total	135	100
Age		
18 – 22	98	72.59
23 – 27	31	22.96
28 – 32	5	3.70
33 – 37	1	0.74

Our overall participants are over 135 students within the College of teacher education while finding a respondent using stratified sampling. Most are respondents came from the female, with 92 respondents and 43 for male and while in the age group our respondent mostly came from an 18 to 22-year-old category with a 98 out of it while the least came from the sort of 33-37 years old with 1 respondent.

Table 2 Frequency Distribution of Respondents in terms of Year Level

Year Level	f	%
First	31	22.96
Second	49	36.29
Third	29	21.48
Fourth	26	19.25

The distribution of year level our respondent mostly came from the second year with a 49 while the least is the third year with 29.

Table 3 Frequency Distribution of Respondents in terms of Course

Course	f	%
BEED	30	22.22
BSED-MATH	16	11.85
BPED	35	25.92
BTVTED	20	14.81
BTLED	34	25.18

The distribution of the course level is the BPED has the most respondent with 35 respondents while the least is in the BSED-MATH has 16 respondents.

Research Problem 2: What is the level of Metacognitive Knowledge of strategies of the pre service teachers in mathematics in terms of:

I. Grade Information

Statements	(5)	(4)	(3)	(2)	(1)	(5)+(4)	(3)	(2)+(1)
GI1	2	25	88	18	2	27	88	20
GI2	2	25	90	17	1	27	90	18

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table above shows that the respondents mostly answered Neutral.

II. Academics Characteristics

Statements	(5)	(4)	(3)	(2)	(1)	(5)+(4)	3	(2)+(1)
AC1	1	25	84	21	4	26	84	25
AC2	7	43	73	11	1	50	73	12

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table above shows that the respondents mostly answered Neutral but in the second statement, the agree and strongly agree highly increased.

III. Mathematics Experience

Statements	(5)	(4)	(3)	(2)	(1)	(5)+(4)	3	(2)+(1)
ME1	13	51	59	9	3	64	59	12
ME2	13	51	59	9	3	64	59	12
ME3	12	52	60	10	1	64	60	11
ME4	12	52	60	10	1	64	60	11
ME5	21	64	46	4	0	75	46	4
ME6	21	65	45	4	0	76	45	4
ME7	2	20	82	28	3	22	82	31

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table above shows that the respondents mostly agreed to the statements but in the last statement, the neutral increased very high at 82

IV. Attitudes in Mathematics

Statements	(5)	(4)	(3)	(2)	(1)	(5)+(4)	(3)	(2)+(1)
AM1	12	27	60	27	9	39	60	38
AM2	15	48	60	11	1	63	60	12
AM3	13	37	67	15	2	50	67	17
AM4	9	21	82	21	2	30	82	23
AM5	38	63	31	3	0	81	31	3
AM6	18	60	53	4	0	78	53	4
AM7	9	20	72	29	5	29	72	34

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

This table above shows that, usually most response are neutral but in the statement 5, the Agree responses increased to 81.

V. Human Influence

Statements	(5)	(4)	(3)	(2)	(1)	(5)+(4)	(3)	(2)+(1)
HI1	37	54	33	9	2	91	33	11
HI2	18	51	53	12	1	69	53	13
HI3	6	27	76	24	2	33	76	26
HI4	11	29	66	24	5	40	66	29

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table above shows that some respondents agreed and neutral but the highest response is HI4 who agreed which is 91 responses and the lowest who disagreed which have 11 responses.

VI. Teacher Experience

Statements	**(5)**	**(4)**	**(3)**	**(2)**	**(1)**	**(5)+(4)**	**(3)**	**(2)+(1)**
TE1	10	52	69	3	1	62	69	4
TE2	10	55	62	7	1	65	62	8
TE3	5	49	63	16	2	54	63	18
TE4	10	47	69	16	3	57	69	19

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table above shows that the respondents mostly answered agree and neutral but the highest response is in the neutral which is 69 and the lowest is 48 who disagree in the first statement which have 4 responses only.

VII. Self-Motivation

Statements	**(5)**	**(4)**	**(3)**	**(2)**	**(1)**	**(5)+(4)**	**(3)**	**(2)+(1)**
SM1	10	33	68	20	4	43	68	24
SM2	29	54	48	3	1	83	48	4
SM3	8	44	69	13	1	52	69	14
SM4	9	44	63	18	1	53	63	19
SM5	4	28	79	21	3	32	79	24
SM6	8	45	71	10	1	53	71	11
SM7	27	43	57	8	0	70	57	8
SM8	20	59	51	5	0	79	51	5
SM9	20	42	61	11	1	62	61	12

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The table result of self-motivation above shows that some of the respondents agree and neutral but the highest response is 32 who agree and disagree in the second statement which have 83 responses and the lowest who disagree in the second statement which have 4 responses only.

Level of Self-Esteem

Self-Esteem Subscale	Mean	SD
Grade Information	3.063	0.639
Academics Characteristics	3.156	0.615
Mathematics Experience	3.476	0.625
Attitudes in Mathematics	3.376	0.648
Human Influence	3.268	0.507
Teacher Experience	3.319	0.523
Self-Motivation	3.435	0.55
Overall	3.299	0.639

The table above shows that Mathematics Experience has the highest mean in agreeing in the statements averaging 3.476 and Grade Information has the lowest mean in agreeing in the statements averaging 3.063.

Research Problem 3: What is the level of Self-Concept in mathematics of the Pre-Service Teachers?

Level of Self-Concept

Statements	**(5)**	**(4)**	**(3)**	**(2)**	**(1)**	**(5)+(4)**	**(3)**	**(2)+(1)**
SC1	11	29	66	24	5	40	66	29
SC2	10	52	69	3	1	62	69	4
SC3	10	55	62	7	1	65	62	8
SC4	5	49	63	16	2	54	63	18
SC5	10	47	59	16	3	57	59	19
SC6	20	42	61	11	1	62	61	12
SC7	20	59	51	5	0	79	51	5
SC8	8	45	71	10	1	53	71	11
SC9	4	28	79	21	3	32	79	24
SC10	9	44	63	18	1	53	63	19

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Mean: 3.681
Standard Deviation: 0.565

The table above shows that the respondents mostly answered neutral and the highest is in the statement 9 which have 79 individuals who agree and in disagree, in the statement 7 there is 79 individuals also.

Pearson - r Correlation Coefficient and Coefficient of Determination between Mathematics Self – Esteem and Self – Concept of the Respondents

Pearson - r Coefficient	Coefficient of Determination	Interpretation
0.792 ^{s}	0.627	High Positive Correlation

Legend: ^{s} Significant at alpha = .05 level.

The table above indicates that there is a high significant positive correlation between mathematics self - esteem and self - concept of the college students in the control group, with a correlation coefficient of .792. It also indicates that 62.7% of the variance in the mathematics self - esteem is attributed to the self - concept of the college students; leaving 37.3% of the variance in the mathematics self - esteem is attributed to other factors or due to sampling error. This implies that mathematics self - esteem has a small effect on the self - concept of the college students.

4.1 Conclusion

The researcher came to the conclusion that most statistical analyses are based on the probability statement that each analysis is independent of the other dependent as well as the other test. With a correlation value of .792, the table above shows that there is a strong significant positive link between mathematics self-esteem and self-concept of college students in the control group. It also shows that the self-concept of college students accounts for 62.7 percent of the variance in mathematics self-esteem, leaving 37.3 percent to chance. Other causes like sampling error are blamed for the variation in mathematics self-esteem. This suggests that mathematics self-esteem has a major impact on college students' self-concept.

Recommendations

- This study found a substantial, significant positive relationship between mathematics self-esteem and self-concept among college students in the control group.
- The implementation of studying mathematics and focusing on pre-service teachers' self-esteem must be continually improved in order to sustain competent pupils and achieve great goals for the mission and vision.

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RESEARCH ARTICLE

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Exploring Mathematics Metacognitive Knowledge among Preservice Teachers: Basis for Curricular Enhancement

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Abstract: In our research studies entitled "Assessing Mathematics Metacognitive Knowledge among Preservice Teacher," we gathered a total of 147 participants to partake in our research studies on Zamboanga Peninsula Polytechnic State University under the College of teacher education departments. Our variable has three subscales in metacognitive knowledge to ensure how they approach mathematics in their daily classes in the given subject.Cognitive/Metacognitive Strategies, CompetenceEnhancing Strategies, and Avoidance Strategies this subscale was used in the questionnaire through an online form like the platform of google application. We used various statistical tools to ensure the accuracy of the data given by the participants. During the survey results, we have 45 males and 102 females. Most participants in the study are 18-22 with 115 participants, while the least is between 33-37 with 3. At the year level, the one who contributed to our research study is 1st to 3rd year. 1st year has 35, 2nd has 61 and 3rd is 41 while the least is 4th is 10. The course category with the highest number of participants who partakes our research is BTVTED with a 46, while between the middle of the pact is BEED and BPED with participants of BEED is 34 and BPED is 31 while the least is BTLED with 17 participants. The highest mean level is the cognitive/metacognitive strategies with a 4.145, while the highest standard deviation is avoidance strategies with a 0.718. our correlation result has a moderate positive correlation, and the two tables have a negligible correlation. T-test results have one variable that rejects the null hypothesis and the other two variables that the null hypothesis is not rejected. Lastly, the development of the Analysis of variance between the Year level and course that all three variables have considered that the null hypothesis is not rejected.

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No potential conflict of interest was reported by the author(s).

Keywords: Mathematics, Metacognitive, Knowledge, Teachers, Curricular, Enhancement

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1.1 Introduction

Our research study focuses on Zamboanga Peninsula Polytechnic State University in the college of teacher education to comply with their metacognitive knowledge in mathematics by assessing among the preservice teacher. Studies on problem-solving behavior have generally been conducted on gifted students (e.g., Pativisan 2006), lower achievers (e.g., Teong 2003a), and young children(e.g., Desoete, Roeyers and Buysee 2001; Yeap 1998). these practices are often authentic in every student on how we cope with some mathematical issues, and every student has a different distinct trait. Most studies have dealt with paired or group problem-solving behavior (e.g., Artzt and Armour-Thomas 1992; Garofaloand Lester 1985; Goos, Galbraith, and Renshaw, 2002; Lester, Garofalo and Kroll 1989). Preservice teachers bring perspectives of, and beliefs about, mathematics teaching from their own schooling (Brown & Borko, 1992; Marks, 2007; Sherrf & Singer, 2012).

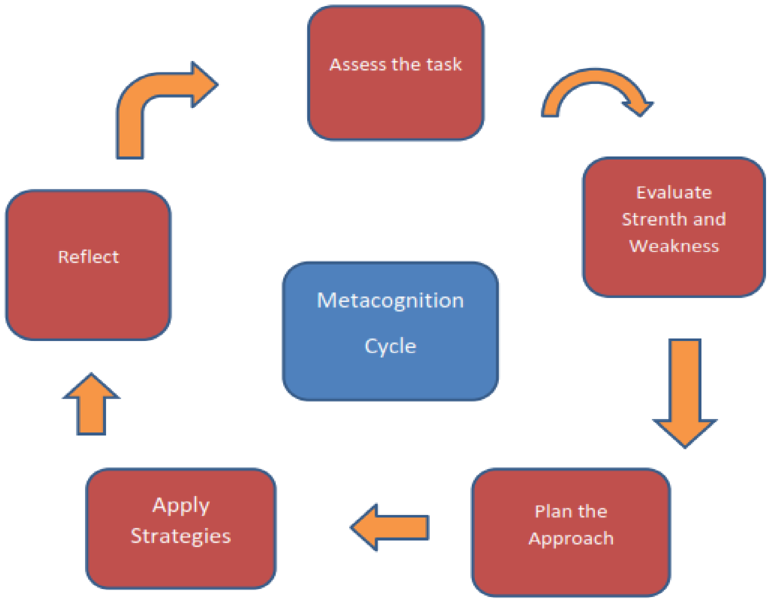
A person's attempts to obtain new information before he or she overcomes the tension created by the problem and searches for an explanation that is appropriate to the problem situation. Utilizing his or her mathematical abilities [19]. This process contributes to the students' mathematical skills by using these skills in daily life [48]. Problem solving is the process of interpreting a situation mathematically that usually engages several repetitive cycles of expressing, testing, and revising mathematical interpretation ([11], p. 782). Especially in mathematics in order for student progress and learning new information is too have a repetition of things in order for them to understands certain topic and assumable able to cope up the lesson. Any studies have promotes diverse skills such as communication, collaboration, mathematical problem- solving, and critical thinking. abilities to think (Daher, Anabousy, & Jabarin, 2018; Smith & Mancy, 2018). Every student is encountering different learning strategies in mathematics, Sometimes these strategies could be at fault or maybe the strategies are a success. Having knowledge about metacognitive processes and using these processes in effective and productive ways increases the metacognitive awareness levels of individuals (Marshall, 2003). In every mathematics subject as a student must find their own way of learning and able gain new information within the topic. According to Peña-Ayala and Cárdenas (2015), the simplest of human actions rely entirely on cognitive activity. The study of Naglieri and Johnson (2000) indicated that the provision of explicit metacognitive strategies can further enhance students' performance in mathematics – displaying the importance of planning to ensure effectiveness. Adding to this, Grizzle-Martin (2014) recommended the use of clear teaching that concentrates on cognitive and metacognitive strategies. If the teaching of mathematics is concise, clear, and easy to learn, students can probably quickly obtain new knowledge and understand every lesson the teacher delivers.

The transition from preservice to inservice is not always smooth. Studies have focused on preservice mathematics teachers' beliefs, conceptions, and perspectives (Brown & Borko, 1992; Bush, 1986; Cooney, Shealy, & Arvold, 1998; Sandholtz, 2011). They have found that teachers have been impacted significantly by their experiences with mathematics and schooling long before they enter teacher preparation programs. Kilic (2014).

1.2 Conceptual Framework

According to Flavell et al. (2002), metacognitive knowledge about memory includes explicit, conscious, and factual knowledge about the importance of a person, task, and strategy variables for memorizing and recalling information. This research study will make us understand how they approach mathematics subjects and evaluate their mathematics ability. Other research points to the difficulty preservice teachers often have integrating what they learned in their teacher preparation program with what they experience in schools (Cavanagh & Prescott, 2007; Hine, 2015). And, even though preservice teachers are regularly exposed to progressive pedagogical approaches, they nevertheless often shift to more traditional teaching practices as they move into the practicum and begin their teaching career(Marks, 2007)

This section covers the review of related studies and literature and presentation of the conceptual model



1.3 Statement of the Problem

This study seeks to determine the metacognitive knowledge of strategies in mathematics among the preservice teacher of College of Teacher Education of Zamboanga Peninsula State University Specifically,this study seek to answer the following questions

- What is the profile of the preservice teachers of the College of Teacher Education of Zamboanga Peninsula Polytechnic State University
  a) Sex b) Age, c) Course and Major, d) Year Level

- What is the level of Metacognitive Knowledge of Strategies of the preservice teacher in mathematics in terms of

  a) Cognitive/Metacognitive Strategies b) Competence-Enhancing Strategies c) Avoidance Strategies

- Is there a significant relationship between the metacognitive knowledge in Math among preservice teachers?
- Is there a significant difference in the Metacognitive Knowledge of Strategies the preservice teachers in

Mathematics when grouped according to:

a) Sex b) Course and Major c) Year Level

The findings of the study will benefit to

Dean.This research study provide the information that can help the institution towards their approach in mathematics.
Teacher. This research study will help the teacher to maximize their learning strategy in mathematics.
Student. This research study will help the student to develop their metacognitive knowledge in mathematics

1.4 Scope and Limitation

This study will be conducted with a Pre-service teacher of Zamboanga Peninsula State University through assessing their Metacognitive knowledge in mathematics. This study focuses on their approach towards learning mathematics and how they handle it on a daily basis in mathematics classes

2.1 Methodology

2.2 Research Design

The research design we used is our research is a quantitative design cross-sectional survey. Cross-sectional surveys are observational surveys conducted in situations where the researcher intends to collect data from a sample of the target population at a given point in time. Researchers can evaluate various variables at a particular time. Cross-sectional studies take a cross-section of the people and study a phenomenon, situation, or event under consideration. These studies aim to investigate the case in the present, and these studies do not aim at studying the change and the factors causing change. Cross-sectional studies are observational in nature and are referred to as descriptive research rather than causal or relational research, which means they cannot be used to establish the origin of an illness. Researchers take notes on the information in a population, but they don't play with the variables (Cherry 2019)

Cross-sectional studies are retrospective studies that look at data from a group of people at one point in time. They are often used to assess the prevalence of health outcomes, comprehend health determinants, and identify population characteristics. Cross-sectional studies, unlike other forms of retrospective studies, do not monitor individuals over time. {Wang & Cheng 2020}. It will be conducted through a google form due to the schools' health protocols due to the Covid-19 Pandemic. It will be collected through the internet because we can't follow the standard procedure due to our situation.

2.3 Population and Sample

The population that we are conducting is in the Zamboanga Peninsula Polytechnic State University within the College of Teacher Education. To be followed by our student through 1st year and 4th year preservice teacher.

Course in CTE	First Year	Second Year	Third Year	Fourth Year	Total
BEED	75	88	60	42	265
BSED-MATH	41	41	34	0	116
BPED/BSED MAPEH	45	82	89	37	253
BTVTED/BTTE	125	86	79	5	295
BTLED/BSED-TLE	66	58	50	32	206
Total	352	355	312	116	1135

Sampling Procedure

Stratified Sampling/Systematic Sampling

Course in CTE	N	%	n
BEED	265	23.35	47
BSED-MATH	116	10.22	20
BPED/BSED MAPEH	253	22.29	45
BTVTED/BTTE	295	25.99	52
BTLED/BSED-TLE	206	18.15	36
Total	1135	100	200

2.4 Research Instruments

The research shall adopt existing literature through our survey questionnaire that will be done at the meets of the study. The survey questionnaire will be organized into three subscales to measure the pre- service teacher's ability in math during the metacognitive experience. All these questionnaires are from a metacognitive strategy. A person gains metacognitive knowledge and learns about the learning unit and the best design for it through metacognitive experiences. The basic concepts, beliefs, and empirical research designing an instrument to quantify processes that characterize psychological and social phenomena are outlined in A Technique for Attitude Measurement (Likert, 1932). wonders of social and psychological nature (Likert, 1932).

A Likert scale is made up of statements that specify and explain the context and significance of the construct being calculated. The scale's statements reflect a belief, preference, decision, or opinion. The statements are put together to form a single- dimensional construct (Babbie, 1999; McIver & Carmines, 1981). Each statement's answer spectrum is a linear scale that indicates how often respondents agree or disagree with each statement. For statements favorable to the construct, a generic answer spectrum is 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided or Neutral, 4 = Agree, and 5 = Strongly Agree.

The focus of the article is on the consistency of test scores obtained from a Likert-type scale. Proof researchers present in journal papers documenting the validity of test scores, including a summary of item-generating strategies to determine the material, is also relevant but not discussed in the article. Face validity, expert assessments attesting to criterion and construct validity, and scientific proof attesting to standard and construct validity (Nunnally & Bernstein, 1994, Chapter 3). The article's research is based on the following principles: (a) measurement reliability is a property of the test scores obtained from the instrument of measurement and (b) according to study reporting guidelines, writers must cite reliability coefficients for test scores that are recorded and interpreted (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999; Wilkinson & The Task Force on Statistical Inference, 1999).

The accuracy of measurement is referred to as reliability. The reliability of a test score that quantifies psychological and social constructs is derived from classical test theory and states that an individual's accurate score is made up of an observed (measured) score minus random errors of measurement, as expressed by the equation below (Cronbach, 1984).

The validity of our divided subcale questionnaire in the Cronbach alpha is Metacognitive Knowledge of Strategies {Cognitive/Metacognitive Strategies} 0.720177,{Competence-Enhancing Strategies} 0.771692 and {Avoidance Strategies} 0.778818

2.5 Data Gathering Procedures

The researcher seeks approval from our respected research teacher to aboard the survey questionnaire using Google Forms and check the survey questionnaire if there is an error during the making of the questionnaire in the Zamboanga Polytechnic State University. To pursue or conduct a survey, we must have a letter throughout all courses in the College of Teacher Education Department to seek a letter of approval from the Dean so that we can have a result throughout our investigation of our respective research.

To commence Data collection with our respective courses that it must be validated and approved by the Dean. Since we are in a pandemic situation, Data collection will be taken in a Google Form. The researcher will assign a particular person who will monitor the google form from every course of the CTE department of ZPPSU. The researcher will explain the study's importance and gain a benefit after answering a questionnaire solely to ask their active participation in this study. The participants will forward an invitation with a link by the researcher to our instructor or students.

Chapter 4

3.1 Result and Discussion

Our study result came from a respondent in Zamboanga Peninsula Polytechnic State College using a cross-sectional survey due to the pandemic situation. We deliver the survey form through the use of online with the platform of google form application. Stratified sampling is our basis for handling the respondent within the College of Teacher education in Zamboanga Peninsula Polytechnic State College

Research Problem 1: What is the profile of the respondents in terms of Sex, Age, Course and Year Level?

Table 1 Frequency Distribution of Respondents in terms of Sex and Age

Variable	f	%
Sex		
Male	45	3
Female	102	6
Total	147	1
Age		
18 – 22	115	7
23 – 27	25	1
28 – 32	4	2
33 – 37	3	2

Our overall participants are over 147 students within the College of teacher education while finding a respondent using stratified sampling. Most are respondents came from the female, with 102 respondents and 45 for male. and while in the age group our respondent mostly came from an 18 to 22-year-old category with a 115 out of it while the least came from the sort of 33-37 years old with three respondents.

Table 2 Frequency Distribution of Respondents in terms of Year Level

Year Level	f	%
First	35	2
Second	61	4
Third	41	2
Fourth	10	6

The distribution of year level our respondent mostly came from the second year with a 61 while the least is the fourth year with 10

Table 3
Frequency Distribution of Respondents in terms of Course

Course	f	%
BEED	34	23
BSED-MATH	19	12
BPED	31	21
BTVTED	46	3
BTLED	17	11

The distribution of the course level is the BTVTED has the most respondent with 46 respondents while the least is in the BTLED has 17 respondents.

Research Problem 2: What is the level of Metacognitive Knowledge of Strategies of the preservice teacher in mathematics in terms of

- Cognitive/Metacognitive Strategies
- Competence-Enhancing Strategies
- Avoidance Strategies

Table 1: Level of Cognitive/Metacognitive Strategies

Statements	(5)	(4)	(3)	(2)	(1)	(5) + (4)	(3)	(2) + (1)
1.When i am reading a mathematical problem I am thinking whether there are various ways of solving it.	40	90	16	1	0	130	16	1
2.I pay attention to the words in the phrasing of the problem in order to figure out what is required so that I solved it. {e.g., the word and means addition}	44	87	16	0	0	131	16	0
3.When I do not understand something i am asking my teacher to explain it to me so that I can go on on my own.	57	63	24	2	1	120	24	3
4.When I have solved a mathematical problem I am checking if I did the computations correctly.	65	67	14	1	0	132	14	1
5.When I find the mathematical problem complicated I am thinking the various pieces of it separately and in which sequence to put them in order to solve it .	33	80	33	0	1	113	33	1
6.When I finish the solution of a mathematical problem I read the problem again and check if I did the operations in the order they should be done.	53	75	16	2	1	128	16	3
7.When I finish the solution of a mathematical problem I evaluate the outcome if it is in accordance with what the problem required.	37	71	38	1	0	108	38	1
8.When a mathematical problem is complex I am thinking it advance the operations that need to be done and in which sequence.	24	79	42	2	0	103	42	2
9.When I have a difficult problem to solve i am reading it many times in order to understand what the problem requires.	74	59	12	1	1	133	12	2
10.As I do computations to solve a mathematical problem I monitor myself to check whether I did them correctly so that I make corrections if needed.	48	80	19	0	0	128	19	0

In the subscale questionnaire of metacognitive strategies, mostly the ten questions answered between strongly agree and agree.

Table 2: Level of Competence-Enhancing Strategies

Statements	(5)	(4)	(3)	(2)	(1)	(5) + (4)	(3)	(2) + (1)
1.When I learn something new in mathematics i am checking how it is connected to previous lessons.	34	74	36	3	0	118	36	3
2.When i learn something new in mathematics I am trying to compare it with other similar concepts also in mathematics {e.g. what is the difference between addition of integers and addition of decimals}.	33	69	41	4	0	102	41	4
3.I am playing mathematical games in magazines or in the computer.	20	46	63	16	2	66	63	18
4.When I solve mathematical problems I am thinking of other similar ones from everyday life.	22	72	48	5	0	94	48	5
5.I like to create mathematical exercises for myself and figure out how to solve them.	16	50	66	15	0	66	66	15

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

In the subscale questionnaire of Competence-enhancing strategies, primarily the five questions answered between strongly agree and agree.

Table 3: Level of Avoidance Strategies

Statements	(5)	(4)	(3)	(2)	(1)	(5) + (4)	(3)	(2) + (1)
1.When I have mathematical exercises to do and I can find somewhere the solutions readymade I am copying it.	14	47	61	23	2	61	61	25
2.I am solving the exercises I can and I leave out the rest.	15	51	55	22	4	66	55	26
3.When the mathematical problem is difficult I give up.	16	22	51	42	16	38	51	58
4.When I solve a mathematical problem that I do not understand I am checking how my fellow students solve it.	65	67	14	1	0	132	14	1
5.When I am solving a mathematical problem I do all the operation I can and then I stop even if I have not found the solution.	20	53	42	25	7	73	42	32
6.When I do not understand what the mathematical problem requires I give up	14	31	37	47	18	45	37	65

Legend: Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

The subscale questionnaire of avoidance strategies in the category of strongly agree and agree and has a 132 is in question 4, while the other question is in the balance subscale of questioning due to the fact of different courses. Check & Schutt (2012) describe survey research as "the collecting of information from a sample of persons through their replies to questions" (p. 160). In addition to valid and trustworthy research tools, questionnaires may incorporate demographic questions (Costanzo, Stawski, Ryff, Coe, & Almeida, 2012; DuBenske et al., 2014; Ponto, Ellington, Mellon, & Beck, 2010).

Table 5: Metacognitive Knowledge Strategies Subscale

Metacognitive Knowledge of Strategies	**Mean**	**SD**
Cognitive/Metacognitive Strategies	4.145	0.468
Competence-Enhancing Strategies	3.699	0.597
Avoidance Strategies	3.281	0.718
Overall	3.7083	0.5943

The result indicates that the overall mean between the three subscale is 3.7083 and the standard deviation is 0.5943. The root of the variance is used to calculate the standard deviation, which is a data point that quantifies the dispersion of a dataset compared to its mean. There is a better deviation among the data set if the data points are above the mean; hence, the more open the data, the higher the quality deviation. (Ben 2021). A big standard deviation isn't always a bad thing when you're merely observing and recording data; it just means there's a lot of variety in the group you're studying. (Rumsey)

Research Problem 3: Is there a significant relationship between the metacognitive knowledge in Math among preservice teachers?

Table No.1

Pearson - r Correlation Coefficient and Coefficient of Determination between Metacognitive Strategies and Competence-Enhancing Strategies

Pearson - r Coefficient	**Coefficient of Determination**	**Interpretation**
0.613	0.76	Moderate Positive Correlation

Legend: ^{S} Significant at alpha = .05 level.

The table above indicates that there is a Moderate significant positive correlation between Metacognitive Strategies and Competence-Enhancing Strategies of the college students in the control group, with a correlation coefficient of 0.613.Which means there is a tendency for high x variable scores that goes with a high Y variables scores.

Table No.2

Pearson - r Correlation Coefficient and Coefficient of Determination between Competence- Enhancing Strategy and Avoidance Strategy

Pearson - r Coefficient	**Coefficient of Determination**	**Interpretation**
0.129	0.017	Negligible Correlation

Legend: ^{S} *Significant at alpha = .05 level.*

The table above indicates that there is a Neligible correlation between Competence-Enhancing Strategy and Avoidance Strategies of the college students in the control group, with a correlation coefficient of 0.129. Which means there is a tendency for low x variable scores that goes with a low Y variables scores

Table No.3

Pearson - r Correlation Coefficient and Coefficient of Determination between Metacognitive/Cognitive Strategies and Avoidance Strategy

Pearson - r Coefficient	**Coefficient of Determination**	**Interpretation**
0.031	0.001	Negligible Correlation

Legend: ^{S} *Significant at alpha = .05 level*

The table above indicates that there is a Neligible correlation between Metacognitive/Cognitive Strategy and Avoidance Strategies of the college students in the control group, with a correlation coefficient of 0.031. Which means there is a tendency for low x variable scores that goes with a low Y variables scores.

The correlation coefficient indicates how closely the data in a scatterplot follow a straight line. The data set will then be completely aligned. There is little to no straight- line connection in data sets with r values close to zero. (Taylor 2020)

Research Problem 4: Is there a significant difference in the Metacognitive Knowledge of Strategies the preservice teachers in Mathematics when grouped according to: sex, , course and year level?

- Sex

Table No.1

Independent t-test Result of Metacognitive Strategies in terms of Sex

Sex	***Mean***	***SD***	***Mean Difference***	***t — value (df = 68)***	***p value***	***Decision on Ho***
Female	4.22	.416	0.24	1.995	0.0376	Rejected
Male	3.98	.536				

Note: ^{ns} p value is greater than alpha = .05.

In terms of Sex, the table reveals that the null hypothesis which states, "There is a significant difference in the of Metacognitive Strategy of the respondents when data are group according to sex", is rejected. This indicates that the Metacognitive Strategy of the respondents does is a significantly differ when they are grouped according sex.

Table No.2

Independent t-test Result of Competence-Enhancing Strategies in terms of Sex

Sex	***Mean***	***SD***	***Mean Difference***	***t — value (df = 70)***	***p value***	***Decision on Ho***
Female	3.75	.553	0.16	1.994	0.0939	Not Rejected
Male	3.59	.679				

Note: ^{ns} p value is greater than alpha = .05.

In terms of Sex, the table reveals that the null hypothesis which states, "There is no significant difference in the of Competence-Enhancing Strategy of the respondents when data are group according to sex", is not rejected. This indicates that the Competence-Enhancing Strategy of the respondents does not significantly differ when they are grouped according sex.

Table
No.3

Independent t-test Result of Avoidance Strategies in terms of Sex

Sex	***Mean***	***SD***	***Mean Difference***	***t — value (df = 87)***	***p value***	***Decision on Ho***
Female	3.27	.73	-0.43	1.987	0.7641	Not Rejected
Male	3.31	.70				

Note: ^{ns} p value is greater than alpha = .05.

In terms of Sex, the table reveals that the null hypothesis which states, "There is no significant difference in the of Avoidance Strategy of the respondents when data are group according to sex", is not rejected. This indicates that the Avoidance Strategy of the respondents does not significantly differ when they are grouped according sex.

A t-test is an inferential statistic that is used to see if there is a significant difference between the means of two groups that are similar in some ways. (2020 Hayes)

- Year Level

Table No.1
ANOVA Result of the of Metacognitive Strategies in terms of Year Level

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	1.263	3	0.421	1.96	0.123	Ho is NOT rejected
Within Groups	30.721	143	0.215			
Total	31.984	146	0.219			

Note: Significant at alpha = .05; Null hypothesis is NOT rejected.

Sample Table in Case Ho is Rejected

Table No.2
ANOVA Result of the of Competence-Enhancing Strategy in terms of Year Level

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	1.407	3	0.469	1.327	0.268	Ho is not rejected
Within Groups	50.543	143	0.353			
Total	51.95	146	0.355			

Note: Significant at alpha = .05; Null hypothesis is rejected.

Table No.3
ANOVA Result of the of Avoidance Strategy in terms of Year Level

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	0.691	3	0.230	0.442	0.724	Ho is not rejected
Within Groups	74.58	143	0.512			
Total	74.721	146	0.516			

Note: Significant at alpha = .05; Null hypothesis is rejected.

Course

Table No.1
ANOVA Result of the of Metacognitive Strategy in terms of Course

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	0.823	4	0.206	0.937	0.444	Ho is not rejected
Within Groups	30.458	142	0.219			
Total	31.281	146	0.219			

Note: Significant at alpha = .05; Null hypothesis is rejected.

Table No.2
ANOVA Result of the of Competence-Enhance Strategy in terms of Course

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	0.665	4	0.166	0.461	0.765	Ho is not rejected
Within Groups	51.285	142	0.361			
Total	51.95	146	0.356			

Note: Significant at alpha = .05; Null hypothesis is rejected.

Table No.3
ANOVA Result of the of Avoidance Strategy in terms of Course

Source of Variation	Sum of Squares	df	Mean Square	F value	p value	Interpretation
Between Groups	0.493	4	0.123	0.233	0.919	Ho is not rejected
Within Groups	74.77	142	0.527			
Total	75.263	146	0.516			

Note: Significant at alpha = .05; Null hypothesis is rejected.

Statistical analysis is a numerical method for determining probabilities between collections of data or data findings. Data from the natural or social sciences can be used. Statistical analysis helps elaborate on trends or patterns found within the research of a topic. (Fitzpatrick, 2019), A researcher must show where his data comes from. Critics might assess whether the statistical analysis uses inaccurately measured data to tailor the data to the study. (Fitzpatrick, 2019). Use an ANOVA test or another evaluative means test. An ANOVA test, also known as an analysis of variance test, ensures that averages exist within each variable test group. If this is the case, the statistical analyses' sample sizes may be wrong. (Fitzpatrick, 2019).

4.1 Conclusion

This chapter presents our general findings in the three subscales of metacognitive process in assessing mathematics among preservice teachers. Our method of taking participants through a cross-sectional survey due to the pandemic outbreak situation followed health protocols among our participants. With the institution's population, the research instrument that we preferred is the stratified sampling by telling the group member to gather participants in every course by doing a point person in search of our participants. This study aims to know the capability of the preservice teacher in mathematics on how they will assess their metacognitive knowledge in this given subject. Our approach is a quantitative approach to see the result of our studies during the tenure of the survey. And we use various statistical tools to have accurate results in our research studies. The statistical method that fits the problem statement is a descriptive statistic, correlation, T-test, ANOVA, and Cronbach alpha during the procedural process of our research in the institution.

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Review of Teacher's World

RESEARCH ARTICLE

The Ati Inhabitants in the Eyes of Education Students

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Abstract: **Introduction:** Ati is an ethnic group of people inhabiting the mountainous areas of Guimaras. They have organized leadership structures, cultural traditions, and can withstand from conflicts and struggles. **Objective:** This study ascertained education students' level of cognizance on Ati Inhabitants' leadership structures, cultural traditions, and conflicts and struggles in Guimaras Province. **Methods:** This descriptive-correlational study utilized a duly-validated researcher-made questionnaire administered through Google Forms among thirty (30) conveniently selected education students. The statistical tools used were frequency count, mean, standard deviation, and Person's R testing set at .05 level of significance. All statistical computations were processed using Statistical Package for Social Sciences (SPSS). **Results:** The result showed that education students have "high" (M=3.76, SD=0.52) cognizance. Moreover, there were "significant moderate positive correlations" (r(30)=0.527, p=0.003) on the cognizance of education students on Ati Inhabitants' leadership structures, cultural traditions, and conflicts and struggles. **Conclusion:** Students' cognizance depends on their views and understanding of indigenous peoples in building human knowledge. Thus, they are considered as one of the agents in spreading and preserving indigenous perspectives.

Keywords: Ati inhabitants, cognizance, education students

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1.1 Introduction

Revisiting indigenous cultures and local knowledge of the Ati requires great learning absorbency and acquisition for the people. Ati is a group of people who inhabit the mountain areas of Guimaras. They have established leadership structures, preserved cultural traditions and experienced difficulties to deal and cope with, in order to survive from the modern world challenges. Their main source of income is from making of native products such as "buon-buon" or wallet, house decors and souvenirs. Despite the prowess and determination for their livelihood, the members have recently decided to stop their production of native products due to lack of supply of raw materials, and most of the equipments that were given by the national agency are already old and exacerbated, thus affected their quality of work (Department of Science and Technology Region VI, 2021).

Some of the notable studies that focus on indigenous people specifically the Ati group are centralized on their struggles for their ancestral land and ownership. The study of Petrola et al. (2020) examined the experiences of suffering, struggle for self- determination, challenges, aspirations and motivation of the Ati in the Panay Island in the lens of Arthur Schopenhauer. This is premised on the idea that the Ati people, being one of the members of the Indigenous Peoples (IPs) in the country have suffered from inescapable forms of sufferings such as oppression, killings, victims of land grabbing, discrimination and various human rights abuses from the local elites, companies engaged in mining and logging, restaurant and hotel businesses, and non-Ati people surrounding their cultural communities that had resulted in their feelings of pain, boredom and despair. In apart, Gavino (2020) investigated the Ati people, the indigenous people of Panay Island, Philippines— their origins, current economic status, ancestral rights, development issues, and challenges. This particular inquiry draws attention to the history of the Ati people as the first settlers of the islands. The study has compared the displacement of the Ati as marginalized minorities in contrast to how they are celebrated and portrayed in the dance festivals. Other studies contributed to the scant body of literature on inequalities among and within ethnic groups in the Philippines by examining both the vertical and horizontal measures in terms of opportunities in accessing basic services such as education, electricity, safe water, and sanitation. The study also provides a glimpse of the patterns of inequality in Mindanao. The results show that there are significant inequalities in opportunities in accessing basic services within and among ethnic groups in the Philippines (Reyes, et al.,2017). Despite these literature, updated information on indigenous culture relating to the field of education remains scarce.

This study seeks to determine Education Students' cognizance on Ati Inhabitants' leadership structures, cultural traditions, and conflicts and struggles. Students, teachers, other social groups in our society, and future researchers will benefit in this study as supplementary references for a much larger study. This topic is not limited to cultural preservation in a single location; it may also be a reflection on reaching out to untapped areas on a national level.

2. Methodology

2.1 Purpose of the Study and Research Design

The research design employed was descriptive-correlational, which aimed to determine the cognizance education students on Ati inhabitants' leadership structures, cultural traditions and conflicts and struggles.

2.2 Respondents

The respondents of the study were thirty (30) education students who were currently residing in Guimaras Province. The convenient sampling technique was employed in the selection of the respondents of the study.

2.3 Instrumentation

This study utilized a duly-validated researcher-made questionnaire. It is divided into 3 areas namely: (1) Leadership Structures; (2) Cultural Traditions; and, (3) The Conflicts and Struggles of the Ati Inhabitants which composed of closed-ended questions. A 5 point Likert scale of agreement was featured wherein each rating has an assigned point consisting Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1.

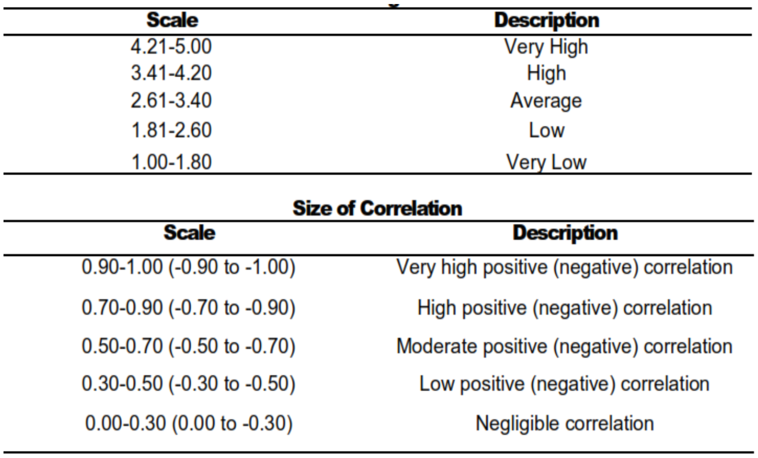
2.4 Data Gathering Procedure

After a letter of permission to conduct the study was approved by the Dean, data gathering started on September 13-20, 2021 using Google Forms sent to the respondents through messenger and e-mail. Upon the retrieval of the data, responses were tallied and submitted to statistical treatment.

2.5 Data Analysis Procedure

The data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Frequency count, means, standard deviation, and Pearson's R were used. The level of significance was set at .05 alpha. The scale of interpreting the level of cognizance and correlations are as follows.

Level of Cognizance



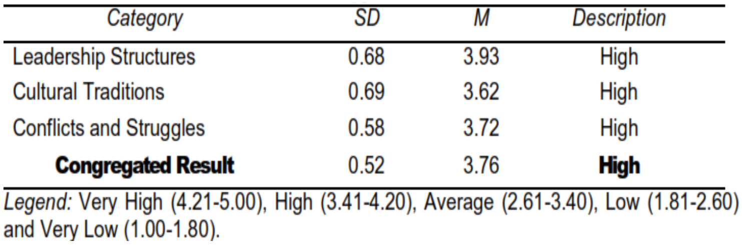
Scale	Description
4.21-5.00	Very High
3.41-4.20	High
2.61-3.40	Average
1.81-2.60	Low
1.00-1.80	Very Low

Size of Correlation

Scale	Description
0.90-1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70-0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50-0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30-0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00-0.30 (0.00 to -0.30)	Negligible correlation

3. Results and Discussion

Table 1. Education Students' Cognizance on Cultural Traditions, and Conflicts and Struggles



Category	*SD*	*M*	*Description*
Leadership Structures	0.68	3.93	High
Cultural Traditions	0.69	3.62	High
Conflicts and Struggles	0.58	3.72	High
Congregated Result	0.52	3.76	**High**

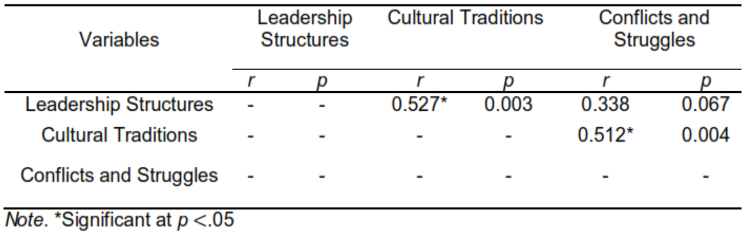
Legend: Very High (4.21-5.00), High (3.41-4.20), Average (2.61-3.40), Low (1.81-2.60) and Very Low (1.00-1.80).

As a whole, education students level of cognizance was high (M=3.76, SD=0.52), leadership structures (M=3.93, SD=0.68), cultural traditions (M=3.62, SD=0.69), conflicts and struggles (M=3.72, SD=0.58).

It is vital to heighten students' cognizance on the social, cultural, economic and political aspects of the indigenous peoples, specifically of the Ati Inhabitants. Krakouer (2015) emphasized that cultivation of the knowledge and perspectives of the learners towards indigenous cultures is vital because this will shape their personal understanding

and views on the world. Therefore, the education system should realign cultural studies or lessons relevant in heightening awareness and preservation of indigenous groups' knowledge in their respective community. Preservation is viewed as a people's salient action in bringing up cultural awareness and societal treasures (Henares, 2010; Pedroso,
2020).

Table 2. Relationship of Students 'Cognizance on Ati Inhabitants' Leadership Structures, Cultural Traditions and Conflicts and Struggles



Variables	Leadership Structures		Cultural Traditions		Conflicts and Struggles	
	r	*p*	*r*	*p*	*r*	*p*
Leadership Structures	-	-	0.527*	0.003	0.338	0.067
Cultural Traditions	-	-	-	-	0.512*	0.004
Conflicts and Struggles	-	-	-	-	-	-

Note. *Significant at $p < .05$

The preceding table tells that there were significant moderate positive relationships in the cognizance of the Education Students (r(30)=0.527, p=0.003). Furthermore, the results implied that the leadership structures, cultural traditions and conflicts and struggles of the Ati Inhabitants are deemed as important areas of indigenous knowledge in heightening the awareness of all the students about indigenous cultural communities in their respective locality. In connection, the article of National Commission for Culture and Arts (2018) tackled that the Ati Inhabitants in the Western Visayas have their leadership or political system for cohesive and systematic society. Their cultures, traditions and practices unified the entire indigenous community. But the conflicts and struggles are inevitable that challenged their capacity to deal and cope with environmental and economic hardships. These aspects of living of the Ati Inhabitants are significantly interweaving which considered as group foundations. These are indeed to be known by the students and other social groups as citizens of this country. Therefore, the ways of living including customs, practices, places, objects, artistic expressions, and values developed by a community are crucial to pass on from generation to generation (ICOMOS, 2002; Pedroso, 2020).

4. Conclusion

Students' cognizance depends on their views and understanding of indigenous peoples in building human knowledge. They are also considered as agents in spreading and preserving indigenous perspectives. As indigenous people are assets and integral contributors in building cohesive human networks, it is important to incorporate indigenous cultural curriculum instructions in teaching competencies for macro-scaled learning acquisition towards strengthening cultural heritage education.

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-The Researchers

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