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Biological Sciences Pre-Service Teachers' Challenges in Teaching Physics: A Grounded Theory

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ABSTRACT

Teacher training institutions have a mission of high responsibility to train competitive educators for change and future schools. The aim of the study was to generate a theory on Biological Sciences Pre-Service Teachers' teaching physics which can also shed light on the challenges of Biological Sciences Pre-Service teachers' in teaching Physics and how do these challenges contribute in addressing the problems and could be a solution for the underwhelming performance of the graduates in the licensure examination for professional teachers.This study utilizes grounded theory, a qualitative research design. This focuses on the challenges of the 8 pre-service teachers who are teaching physicsat the JHS Secondary Laboratory School that were given the opportunity to have experiential learning during their 9 weeks in-campus immersion. Based on the findings, the quality of clinical instructor depends heavily on the richer background in specific content domains and the kind of preparation, as well as the coaching and supervision the pre-service teachers receive as they progress with their practice.

KEYWORDS: *pre-service teachers, teaching, physics, grounded theory, biological sciences*

RATIONALE

The sad state of basic education in the country can be partly attributed to the congested basic education curriculum. The research findings of the comparative study of the curricula of Brunei Darussalam, Malaysia, Singapore and Philippines conducted by SEAMEO-INNOTECH, affirmed that indeed the Philippine basic education curriculum is congested, especially the Mathematics, Language and Science subjects.

The new science program has many innovations. One of which is the decongestion of the competencies and arrangement in spiral progression manner. In the old curriculum, a specific discipline is being offered per grade level. First year will take up general science, the second year will deal with biology, the third year will study chemistry, and the seniors will master physics. But in the new science program, the different disciplines in science which are life science, chemistry, physics and earth science, have been incorporated in every level.

Inevitably, how well science is taught will depend on the teachers' understanding of the continuity and connections of concepts in science and their ability to relate these concepts to everyday life (Ball, 2000; Borko & Putman, 1996). McNeill and Krajcik (2008) reported that the extent to which teachers' use instructional practices such as modeling scientific explanation, making the rationale of scientific explanation explicit, defining scientific

explanation, and connecting scientific explanation to everyday explanation greatly influence students' learning of scientific explanations.

With the K-12 implementation, spiral progression is one of the salient feature of the new curriculum. In relation to secondary science curriculum, Sanchez (2014) explained that, science is composed of four areas, namely Integrated Science, Biology, Chemistry and Physics. In old curriculum, Integrated Science was taught in first year, second year was Biology, third year was Chemistry and Fourth year was Physics. However, in new secondary science curriculum implemented last 2012, the concept of those four major areas are being taught all at the same time. Each year students are exposed to spiral progression approach, wherein the four areas are being taught per grading period. Aside from that, integrated science was changed into Earth Science.

It has been assumed that those with a richer background in specific science content domains would know and teach that content more effectively (Borko, 1996). The teachers' knowledge base strongly influences all aspects of teaching like preparation, planning and decision making regarding the choice of content to be learnt (De Jong, Veal, & Van Driel, 2002). The problem grows more complex due to mismatched concept and student developmental levels. Inaccuracies in textbooks, incorrect information provided by instructors, and student memorization of prior concepts without meaningful understanding of the basic concepts compounds the problem and ultimately creates a lineage of confused science concepts (Westbrook, 1992).

The researcher is a high school teacher of a Laboratory School handling and caters the needs of the pre-service teachers deployed by the College of Education. However, for science area, the College of Education only offers Biological Sciences as a major to these pre-service teachers, where only two semesters of general physics is required.

These pre-service teachers usually cannot do well in physics.It has been observed that a lot of challenges are faced by Biological Sciences pre-service teachers who are teaching different disciplines of science especially Physics.

In teacher education, it is critical to evaluate the conceptions of pre-service teachers. If they have misconceptions, it is likely they will pass the incorrect content on to their future students. The result of persistent wrong conceptions about scientific phenomena is an ill-informed citizenry and a reduced possibility of appropriate preventive actions by these citizens against future problems (Boyes, et. al. 1995).

Teaching outside area of expertise offers considerable challenges and pre-service teachers express concern and apprehension when dealing this situation. Pre-service teachers' lack of confidence when teaching topics outside their area of expertise is manifested in different ways such as when preparing lesson plans, choosing or devising activities and analogies to aid students' learning, answering students' questions, setting up laboratory experiments, linking and applying various concepts and principles to everyday life situations, generating students' interest and passion for the subject area.

Poor teacher preparation denies students access to a quality education in the physical sciences. Moreover, students without access to a good high school physics course are often unprepared for introductory college physics. Physics once attracted the best undergraduates, but now other options seem more attractive.

High school teachers are one of the most important in developing the science and technology workforce of the future. Thus, the study is conducted to generate a theory by identifying the challenges of the Biological Sciences Pre-service teachers in handing Physics. The result would be of beneficial for the University to know what specific area these pre-service teachers' needs to be cultivated and appropriate training would be created to address these problems and could be a solution for the underwhelming performance of the graduates in the licensure examination for professional teachers.

LITERATURE REVIEW

An important role of teachers is to interpret and translate complex science concepts to the level appropriate to the learning experiences of the target students. It is essential that they must first develop a personal understanding of the subject matters that they are expected to impart to their students. When teachers do not fully understand the content of science well they will not be able teach it well and even more damaging they may cause students' alternative conceptions (Quiles-Pardo &Solaz-Portoles, 1995).

Recent legislation in the form of No Child Left Behind is requiring teachers to be highly qualified and therefore teacher educators must prepare preservice teachers to be just that. Teachers cannot effectively educate students on subjects they themselves aren't comfortable with or confident in (Ball, 1990).

Ausubel (1968, p.406) stated, "The most important single factor influencing learning is what the learner already knows." Ascertain this and teach him accordingly. This implies that students do not simply accept what has been taught, but rather shift their understanding in response to what has been taught.

Teachers teaching outside their area of specialism face considerable challenges in lesson preparation and teaching. First of all these teachers need to understand the structure and nature of the discipline and learn unfamiliar content knowledge, which is known as subject matter knowledge. Secondly, they need to transform the content knowledge into suitable activities, analogies, demonstrations or simulations and adapt them to the different students' abilities to help them learn, what is described by Shulman (1986, 1987) as pedagogical content knowledge.

Kind (2009) also reported that trainee teachers felt less confident at trying out new things, were less creative and did not develop their own ideas in preparing lessons outside their area of expertise but followed the traditional methods. In a study by Childs &McNicholl (2007) with novice and experienced teachers, it was reported that lessons outside subject specialism were tightly controlled and included less discussions, open-ended questions, anecdotes, illustrations and analogies. Practical work was closely directed and textbooks were used more often. "Lessons taught outside of subject specialism were perceived to be rigid and constrained"

When teaching outside subject specialism, lessons were more teacher-dominated and more time was devoted to teacher explanations (Sanders et al., 1993). Less risky instructional activities were planned for unfamiliar content as opposed to more student-centered activities and less teacher talk when teaching within familiar areas. However, experienced teachers

could manage their classrooms better than novice teachers. They made use of their science process skills, lab organization, handling equipment, classroom management and group arrangements better than novice teachers. Unlike beginner teachers they did not rely on textbook presentations but used various resources.

Some research studies have also attempted to find a correlation between teachers' self-confidence to teach the different sciences and the level of content knowledge (Kind et al., 2011). Studies with secondary school science teachers are scarce compared to studies carried out with elementary teachers. Appleton (1995) found that elementary teachers gained more confidence not only when they experienced success in learning science content but also when they experienced how the subject is taught after undergoing a science method course.

When facing unfamiliar science content, teachers resort to a range of strategies to deal with these challenges (Kind, 2009). During the planning stage, they mainly read textbooks, teachers' resource packs and schemes of work, which besides offering various ideas of lesson plans and activities; they also outline links between lessons across the topic. They also seek help and advice from school colleagues who are subject specialists, especially about practical work and conduct trail experiments. Support from the workplace was found to be the most popular strategyto help teachers deal with their weaknesses in subject matter.

Research studies have shown that there are considerable differences when teaching within and outside area of expertise. Teachers seem to be more self-confident when teaching within their subject specialism. This phenomenon is present in many countries. In Malta many science teachers have a teaching degree specializing in Physics and Science. A number of these teachers would have never studied Chemistry at secondary level, since physics was the compulsory science subject. Hence many teachers teaching Integrated Science to students aged between 11-13 expressed similar concern, apprehension and lack confidence when teaching topics related to science areas that are not in their area of specialization (Gatt, 2011).

The statement of task was issued in 2000 by the National Research Council, and the study was guided by their Board on Life Sciences. The committee was asked to examine current undergraduate curricula, training, and experience and relate them to needs for successful preparation of the next generation of life scientists. A specific goal was to identify fundamental skills in mathematics, chemistry, physics, computer science, and engineering that could be integrated into the biology major. The result will provide concrete suggestions for implementing reforms at both universities and 4-year colleges.

STATEMENT OF OBJECTIVES

The aim of the study was to generate a theory on Biological Sciences Pre-Service Teachers' teaching physics which can shed light on: (1) What are the challenges of Biological Sciences Pre-Service teachers' in teaching Physics?and; (2) Are Pre-Service Teachers' fully equipped during their internship?

RESEARCH DESIGN: GROUNDED THEORY

The Grounded Theory using the Glasserian approach (1978), a qualitative research method, was utilized to identify the challenges met by the Pre-Service Teachers (PST) in teaching Physics and to generate a theory.

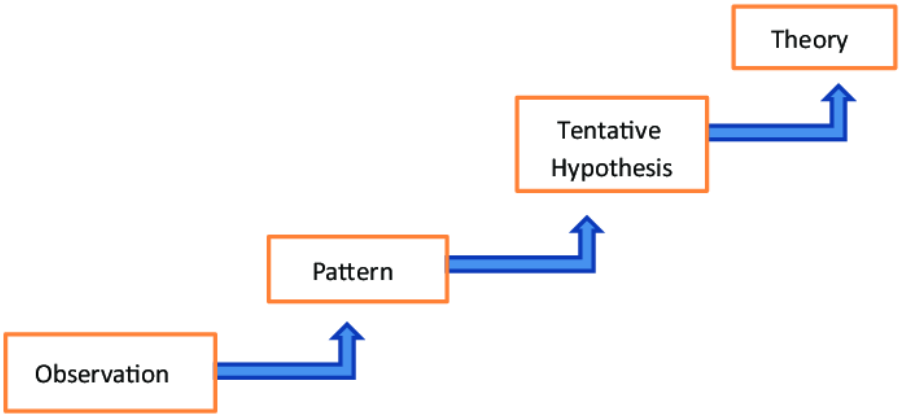

Figure 1. : Research Process for the Theory Generation

Inductive reasoning begins with detailed observations of the world, which moves towards more abstract generalisations and ideas. When following an inductive approach, beginning with a topic, a researcher tends to develop empirical generalisations and identify preliminary relationships as it progresses through the research. No hypotheses can be found at the initial stages of the research and the researcher is not sure about the type and nature of the research findings until the study is completed.

RESEARCH ENVIRONMENT

The study will be conducted at the Bukidnon State University. The said school is located at the heart of Malaybalay City, Bukidnon.It is one of the leading educational institutions serving the people not only in Mindanao but also the country in general.

Bukidnon State University offers varied programs of academic excellence along with diverse opportunities. Students can participate in relevant internship in local and international level, field experiences, and community service and leadership development. It is also known as a major supplier of teachers not only in the province but throughout the region.Rigorous improvements are aligned to address the global perspective of the University.

The school was primarily a teacher training institution during its establishment years; it provided Laboratory Schools for its Bachelor in Elementary Education and Bachelor of Secondary School courses. The laboratory schools served as the training ground where the education students of the University will have their pre-service teaching.

RESEARCH PARTICIPANTS/ INFORMANTS

The informants for the said study are the 8 Pre-service Teachers (PST) enrolled at Bukidnon State University taking up Bachelor of Secondary Education major in biological Sciences during the 2nd semester of the school year 2017-2018. This group of Pre-service teachers are consists of the senior undergraduate. This group of students is also having their 9 weeks in-campus pre-service teaching at BukSU – Secondary School Laboratory.

RESEARCH SAMPLING

The study utilized the purposive sampling. It is a nonprobability sampling but it is useful especially when randomization is impossible like when the population is very large. It can be useful when the researcher has limited resources, time and workforce.

The eight participants were under the supervision of the researcher, thus making it easier in making the face to face interviews and have greater convenience during the FGD. The researcher explained to the participants their rights and responsibilities and asked for their consent.

RESEARCH INSTRUMENT

An interview in a semi-structured form with two main parts, Part I will be intended for their personal information, and the Part II is a researcher made questions are intended to ask the challenges met by the PST major in Biological Sciences.

More questions will also be prepared by the researcher for the focused group discussion. During the FGD, questions prepared are directed to help in planning the strategies on how to support the PST when teaching outside their area of expertise.

DATA GATHERING

Data Collection: The data collection process took place at Bukidnon State University. Data collection occurred via face to face interviews involving 8 PST Biological Sciences major who are having an on-campus teaching at the Secondary School Laboratory for 9 weeks. Over a nine-week period, dates and times for the interviews were scheduled and conducted. Due to the varied schedules of each participant, interviews were conducted at various times and days of the week. All interviews were conducted in a mutually agreed upon time and location, were digitally recorded, and notes were taken.

Coding and Categorizing Data:Open coding involves 'running the data open'; that is, analysing the data to extract a set of categories and their properties. This is done by coding for as many categories as possible without a preconceived set of codes (Glaser, 1978). During open coding, the researcher labelled the text of each interview, detecting new lines of enquiry, which guided subsequent data acquisition activity.

Memo Writing: 'Memoing' (Miles &Huberman, 1984, p. 69) is another important data source in qualitative research that will be used in this study. It is the researcher's field notes recording what the researcher hears, sees, experiences and thinks in the course of collecting and reflecting on the process. Researchers are easily absorbed in the data-collection process and may fail to reflect on what is happening. However, it is important that the researcher maintain a balance between descriptive notes and reflective notes, such as hunches, impressions, feelings, and so on.

Theoretical Sampling: As codes and memos accumulated, the researcher started to perceive relationships between them. This process, called theoretical coding, conceptualised the interrelation of substantive codes by generating hypotheses for integration into a theory. Therefore, theoretical codes emerged from open coding and theoretical memos, weaving a

new story from the fragmentation of open coding (as suggested by Lehmann, 2001b). The grounded integration of concepts is a flexible activity that provides broad pictures and new perspectives. However flexible, theoretical codes must remain grounded on data, they cannot be empty abstractions. The concept of flexibility implies theoretical sensitivity to a number of possible coding paradigms, or coding families, consciously avoiding over-focusing on one possible explanation. Glaser (1978; 1998) provides a comprehensive (but not definitive) list of code families allowing for this flexibility.

Ethical Consideration:Informed consent was attained prior to the commencement of the interviews. Prior to the start of each interview, each participant was cordially greeted and the digital recording device was tested to ensure that it was properly functioning. Using an interview script, interviewees were informed of the purpose of the study, source of data collection, participation risks and benefits, the digital recordings of interviews, voluntary participation and withdrawal, confidentiality of the interviewee, and how long the interview will commence. At the end of the interviews, all participants were thanked for their involvement.

DATA ANALYSIS

Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail. However, it also often goes further than this, and interprets various aspects of the research topic (Boyatzis, 1998). The *range* of different possible thematic analyses will further be highlighted in relation to a number of decisions regarding it as a method.

Thematic analysis is widely used, but there is no clear agreement about what thematic analysis is and how you go about doing it (Tuckett, 2005). If we do not know how people went about analysing their data, or what assumptions informed their analysis, it is difficult to evaluate their research, and to compare and/or synthesise it with other studies on that topic, and it can impede other researchers carrying out related projects in the future (Attride-Stirling, 2001). For these reasons alone, clarity around process and practice of method is vital.

Therefore, thematic analysis can be a method which works both to reflect reality, and to unpick or unravel the surface of 'reality'. However, it is important that the theoretical position of a thematic analysis is made clear, as this is all too often left unspoken (and is then typically a realist account). Any theoretical framework carries with it a number of assumptions about the nature of the data, what they represent in terms of the 'the world', 'reality', and so forth. A good thematic analysis will make this transparent.

CHAPTER 2

THEORY GENERATION PROCESS

In generating grounded theory, creativity is required through the processes that force the researcher to break through prior assumptions and to create new order from existing data. In essence, much of originality or creativity is not new ideas – since most ideas are already known in some way – but new connections between conceptual ideas ... (which put) a

premium on the discovery and adept use of theoretical codes, which are the connectors (Glaser, 1992, p. 29).

Demographic information: As shown in Table 1, the total study participants consisted of eightpre service teachers. There are only 3 males and the rest are females. All of them are Filipino citizens. The participants' ages ranged from 20 to 24. All are undergraduate and taking up BSE-Biological Sciences. Six are Roman Catholics and two are Non-Catholics. All of them have taught Physics during their 9 weeks in-campus internship.

DEMOGRAPHIC INFORMATION

Table 1: Demographic Information of Preliminary Study Participants

Participant	Age	Sex	Civil Status	Education	Course	Religion	Nationality
1	21	Male	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino
2	24	Female	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino
3	24	Male	Single	Undergraduate	BSE – Biological Sciences	Seventh Day Adventist	Filipino
4	21	Male	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino
5	21	Female	Single	Undergraduate	BSE – Biological Sciences	Seventh Day Adventist	Filipino
6	20	Female	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino
7	20	Female	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino
8	21	Female	Single	Undergraduate	BSE – Biological Sciences	Roman Catholic	Filipino

Challenges in Teaching Physics

The participants expressed their experiences with regard to challenges in teaching Physics. The following comments were used in formulating and categorizing codes of the study.

Participant 1

"I can tell that I was not fully equipped at the start of my internship because I still lack a lot of things for me to be considered"

"I was not afraid to have my pre-service teaching despite the said fact though, because over time, I was able to gradually fill those gaps"

Participant 2

"Handling 'true students', I mean I experienced teaching Junior High School and Senior High School students in their physics subject"

"I also experienced variety of students that left an impact to me as a teacher"

"I was fully equipped during the internship by the given guidance of my Supervising Instructors"

Participant 3

"I had hard time adjusting myself, it is because we are teaching on of the field of science that is not merely focus on our course. We are BSE major in Biological Sciences so we are focused on Biology. But what happened is that we are teaching Physics"

"We are trained by our Supervising Instructor not just on the different strategies in teaching, but also new format in creating the lesson plan"

Participant 4

"So many challenges that pushed me beyond my comfort zone"

"I always knew that coming up with lesson plans was not easy, so I'm glad that I was able to have this experience to prepare myself in the future"

"I also learned that I do not have a good sense of time when teaching, so I know how to make sure to make a schedule of what's need to be done"

"It is really true that students can only retain their attention for a short period of time so it's a great challenge on your part as a teacher"

"Teaching has lot of considerations, with the supervision of my Supervising Instructor, I was able to plan a lesson that looks into the needs of the learners, became an efficient teacher and create strategies and methods to be an effective teacher"

Participant 5

"I was a little worried about a few of my class but as I got to know the students better and establish relationships with them, the problems mostly vanished. My increases level of confidence levels definitely translated to the students doing better in class"

"I sustained a great working relationship with co pre service teachers and supervising instructor"

Participant 6

"During our teaching, I was shy to teach my students"

"Preparing activities that can motivate my students"

"I still lack many things to consider, must be equipped with the skills and knowledge to teach the subject matter"

Participant 7

"Making my lesson plans which are align with the objectives, strategies, activities, and planning the assessment"

"Handling the class with different kinds of learner that I have to carry out my strength and weaknesses"

"The feedback leads me to improve my teaching strategies, how to maintain classroom management and how to plan my lesson"

Participant 8

"My experience as a Pre-Service Teacher was like a roller coaster ride. I was able to experience full twist and turns of how to become a fully equipped teacher"

"Experienced hardships and shortcomings, I have a lot to improve"

"The shortcomings I have was little by little or gradually being filled up with the help and guidance of my supervising instructor, parent, co pre-service teacher and colleagues"

CATEGORIZING, CODING AND THEMES

Core themes and patterns were developed by thoroughly examining the transcripts to generate a theory on Biological Sciences Pre-Service Teachers' in teaching Physics. Developing themes from the data consisted of answering the research questions and framing a deep explanation to shed light on the challenges and its contribution in addressing the problems and could be solutions for the underwhelming performance of the graduates. Composite descriptions provide meaning to the themes.

The five (5) themes as deduced from the transcripts of the participants are:

Theme 1: Students

Most of the talked about handling different types of learners where they handled not only junior high school students but also the senior high school students.

"Some students are not listening even if they are directly in front of you"

"Handling 'true students', I mean I experienced teaching Junior High School and Senior High School students in their physics subject"(P2)

"I also experienced variety of students that left an impact to me as a teacher" (P2)

"It is really true that students can only retain their attention for a short period of time so it's a great challenge on your part as a teacher"(P4)

"I was a little worried about a few of my class but as I got to know the students better and establish relationships with them, the problems mostly vanished. My increases level of confidence levels definitely translated to the students doing better in class"(P5)

"During our teaching, I was shy to teach my students" (P6)

"Handling the class with different kinds of learner that I have to carry out my strength and weaknesses" (P7)

Theme 2: Lesson Planning

Participants also emphasized the challenges met in making lesson plans. Strategies planned should meet certain situation to develop better service to learners and these teaching strategies must promote critical thinking and active learning.

"I always knew that coming up with lesson plans was not easy, so I'm glad that I was able to have this experience to prepare myself in the future" (P4)

"Preparing activities that can motivate my students" (P6)

"Making my lesson plans which are align with the objectives, strategies, activities, and planning the assessment" (P7)

"Making instructional materials are challenging" (P1)

"The feedback leads me to improve my teaching strategies, how to maintain classroom management and how to plan my lesson" (P7)

Theme 3: Management

The participants were not also worried with their time management but as well as handling their classes or classroom management

"I also learned that I do not have a good sense of time when teaching, so I know how to make sure to make a schedule of what's need to be done"(P4)

"The feedback leads me to improve my teaching strategies, how to maintain classroom management and how to plan my lesson"(P7)

"Stressed voice because of teaching. . ."(P2)

"I experienced sleepless nights" (P1)

Theme 4: Preparedness

Participants pointed out that pre-service teachers must be equipped with the skills and knowledge in order to deliver the lesson. In the same way, they must be able to carry out their strength and weaknesses

"So many challenges that pushed me beyond my comfort zone"(P4)

"Experienced hardships and shortcomings, I have a lot to improve" (P8)

"I still lack many things to consider, must be equipped with the skills and knowledge to teach the subject matter"(P6)

"I had hard time adjusting myself, it is because we are teaching on of the field of science that is not merely focus on our course. We are BSE major in Biological Sciences so we are focused on Biology. But what happened is that we are teaching Physics" (P3)

"I can tell that I was not fully equipped at the start of my internship because I still lack a lot of things for me to be considered"(P1)

"My experience as a Pre-Service Teacher was like a roller coaster ride. I was able to experience full twist and turns of how to become a fully equipped teacher"(P8)

Theme 5: Relationship

Participants stressed that with the supervision of their Supervising Instructor they were able to write effective lesson plans of different formats create and recreate different classroom strategies, actual classroom management which were very effective and easy to implement especially for beginners like them. The relationships with their parents, co-PSTs and other staffs made them motivated.

"I was fully equipped during the internship by the given guidance of my Supervising Instructors" (P2)

"We are trained by our Supervising Instructor not just on the different strategies in teaching, but also new format in creating the lesson plan"(P3)

"Teaching has lot of considerations, with the supervision of my Supervising Instructor, I was able to plan a lesson that looks into the needs of the learners, became an efficient teacher and create strategies and methods to be an effective teacher" (P4)

"I sustained a great working relationship with co pre service teachers and supervising instructor" (P5)

"The shortcomings I have was little by little or gradually being filled up with the help and guidance of my supervising instructor, parent, co pre-service teacher and colleagues"(P8)

Hypotheses Derived from the Results:

Generation of hypothesis 1: The participants were generally asked about their experiences during there in-campus, specifically the challenges encountered. It was extracted from the three themes:

Theme 2: Lesson Planning

"Making my lesson plans which are align with the objectives, strategies, activities, and planning the assessment" (P7)

Theme 3: Management

"The feedback leads me to improve my teaching strategies, how to maintain classroom management and how to plan my lesson"(P7)

Theme 4: Preparedness

"I had hard time adjusting myself, it is because we are teaching on of the field of science that is not merely focus on our course. We are BSE major in Biological Sciences so we are focused on Biology. But what happened is that we are teaching Physics" (P3)

Hypothesis 1: In depth content knowledgein specific science content domains and mastery with lesson planning and management can deliver the class confidently.

Proposition 1: Those with a richer background from undergraduate subjects can teach more effectively.

Generation of hypothesis 2:The participants made significant mention on the how they had overcome their challenges during their internship from the concern that they were not fully equipped.

Theme 1: Students

"I was a little worried about a few of my class but as I got to know the students better and establish relationships with them, the problems mostly vanished. My increases level of confidence levels definitely translated to the students doing better in class"(P5)

Theme 5: Relationship

"The shortcomings I have was little by little or gradually being filled up with the help and guidance of my supervising instructor, parent, co pre-service teacher and colleagues"(P8)

Hypothesis 2: Cooperation from students, mentoring from supervising instructor, help from co pre-service teachers, and provision from parents build confidence in their teaching.

Proposition 2: Interpersonal factors greatly help the pre-service teachers in dealing with their challenges.

Generated Grounded Theory

The challenges of the pre-service teachers, which can only be experienced in the real teaching-learning environment, prepared them to become a fully equipped teacher in the future.

Effective teaching means the extent to which pre-service teachers' knowledge of the subject matter, appropriateness of method selected to achieve the identified objectives and strong command over the class*(Theme 2,3, and 4)*;

The support from different influences can help overcome the challenges especially in teaching unfamiliar contents*(Theme 1and 5).*

The theory generated can be summarized as follows:

"The quality of clinical instructor depends heavily on the richer background in specific content domains and the kind of preparation, as well as the coaching and supervision the pre-service teachers receive as they progress with their practice."

Figure 2: Conceptual Model of Ramirez'Clinical Instructor Theory

There is a growing universal demand for well-prepared professionals in all disciplines. A supervised practical experience of immersion (variously known as practicum, clinical training, internship, depending on the discipline) forms an essential part of the pre-service preparation of teachers. All the PSTs agreed that the in campus pre-service teaching. This

sharpens their skills, abilities, knowledge and other competencies. It moulded them to be a fully equipped teacher and a valuable member of the society.

They also must consider the vital role of the Supervising Instructors, Student, co Pre-Service Teachers, and Parents. They should be ready to be criticized to be able to correct their mistakes and apply recommendations.

Pre-service teacher training is one of the most important aspects of every teacher's education curriculum as it prepares student-teachers to become qualified teachers in the future. As they enter the field, being a PST needs dedication. This will change your views in preparation to the real world. Pre service teaching is an opportunity as a launching place for their future careers. The PSTs will also have the chance to work with the students and have the chance to be part of the educational team.

Practicum teaching is an integral part of any teacher education curriculum since it is a good avenue for pre-service teachers to apply the theories they learned in the real classroom setting. Through constant monitoring and guidance from the teacher educators, these pre service teachers will learn how to handle and manage not just their daily lessons but the students and their classroom as well.

Sharing these experiences will contribute to the future PSTs. This will help them to be more prepared and have a better and wider perspective and deeper understanding on what is really happening in the real world of teaching- learning process. It will give insights as to what are the things/skills they must be equipped for them to become a credible and effective PSTs someday. It will give a realization on how to become a real teacher.

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