

## Becoming the teacher one needs: An emergent theory on pedagogic empathy

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**ABSTRACT:** A prospective mathematics teacher, or any other teacher for that matter, should know the learners to be able to teach them in a way that they will learn. This entails the teacher to be able to put himself/herself in the shoes of the learner. This study aimed to explore the Bachelor of Secondary Education (BSEd) teaching interns' notions of empathy as they taught mathematics throughout their Internship phase to generate an emergent theory of teaching interns' notions of Mathematics pedagogic empathy. Adhering to the Glaserian tenets of Grounded Theory, the researcher explored the qualitative data obtained through interviews for theory generation through utilization of theoretical sampling, the constant comparative method of data analysis and discovering the core category of becoming the teacher one needs. The findings revealed that the teaching interns perceive empathy as being manifested all throughout the mathematics teaching-learning process.

**KEYWORDS:** *Empathy, high school mathematics, pedagogy, teaching internship*

### I. INTRODUCTION

A certain Professor Hong of UNIST in Korea remarked, "Mathematics is the only armor that will keep you safe from the fast approaching Fourth Industrial Revolution" [1]. The Fourth Industrial Revolution is characterized with voluminous patent applications made possible with the advancements in Robotics and Artificial Intelligence where both mathematics and computer science play a significant role. But time and time again, several students are unenthusiastic and continue to struggle with mathematics as they "encounter obstacles to engagement" [2]. Mathematics is not at all easy to learn; more so, not easy to teach.

For teaching interns who teach for the first time as they immerse themselves in the laboratory and actual schools, teaching mathematics is filled with challenges. The researcher who is a student teaching mentor have noticed interns continuing their discussion even when the learners are restless and inattentive. Furthermore, there are interns who make use of language and terminologies that are not suitable for the age group they are teaching. There are also those who don't even seem to notice that the learners are already turning their heads around as if imploring the mentor to discuss the lesson instead. These are outward manifestations of how teaching interns may not be sensitive and empathetic enough to their learners as they teach Mathematics.

Not only are these teaching interns intellectually challenged as they make sure that they possess mastery of the mathematics lessons that they are supposed to teach but also they are emotionally challenged as they come to terms with how they compose themselves amidst anxiety and how they can relate to and manage their learners. As a "regulator of social relations in the classroom" [3], the teaching interns must first and foremost know their students. Teachers-to-be ought to know how important it is to know their learners. Such knowledge will enable them to teach the learners in a way that they will learn and to treat them with kindness and respect.

How a teacher gets to know his/her learners more is by communicating and talking to them. Empathy is a very essential characteristic that will facilitate ample communication between the teacher and the learners [3]. As defined in the Cambridge dictionary, empathy is "the ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation". It is then a vital trait that teaching interns should possess and harness as they should be equipped with emotional competencies for them to succeed.

"If you can't explain it simply, you don't understand it well enough" is a famous adage of Albert Einstein. The same goes in teaching mathematics wherein ideas should be conveyed with empathy to the learners. For a

teaching intern who is bombarded with lesson designing, test construction, time and classroom management issues, thinking what it is like to be a mathematics student to empathize with their learners might just be the least of their concerns. The Internship Phase is a rich ground for discovering emerging and evolving beliefs and notions of prospective teachers on empathy which research show is a factor to teachers being able to succeed in fulfilling their professional roles[3]. Hence, this grounded theory study aimed to explore how pedagogic empathy is perceived by the BSEd Mathematics teaching interns. It intended to know, among these teaching interns, how they were able to put themselves in the shoes of their Mathematics learners throughout their Internship Phase.

## II. METHODS

### A. Research Design

The researcher made use of the grounded theory study since the purpose is not just to arrive at a mere description but to come up with a theory [4]. This design was developed in 1967 by Barney Glaser and Anselm Strauss who believed that theories should be “grounded” in data from the field” since they find the theories used in research often “inappropriate and ill-suited” for the study participants [4]. This design is used to explore how teaching interns were able to put themselves in the shoes of their learners as they taught mathematics throughout the Internship Phase. More specifically, this study made use of the emerging design advocated by Glaser whereby one can come up with a theory that provides an explanation about the “main concern of the population” as well as how it is resolved [5].

### B. Ethical Considerations

Ethical issues in this study were addressed by obtaining first the permission of the research chair, supervisor and college dean of the study site. The researcher also sought the informed consent of the participants. The participants were informed of the purpose of the study, the extent of their participation, the risks and inconveniences of the study, and its possible benefits. The voluntariness of their participation and the observance of confidentiality were also emphasized to the participants. No participant reported of being harmed during the interview process.

### C. Sample Selection and Data Collection

The researcher used theoretical sampling in this study and selected a sample of sixteen (16) participants for this study after reaching saturation. The participants were purposively Bachelor of Secondary Education major in Mathematics teaching interns for the second semester of Academic Year 2018-2019. They were theoretically chosen “to help the researcher best form the theory” [4].

Data were collected through a semi-structured interview. The interview was recorded, transcribed verbatim and translated to English. The participants were asked of their notions of empathy in teaching Mathematics and how they exhibit such when they were teaching during the Internship phase. The subsequent interviews already had other exploratory and confirmatory questions as the responses became saturated.

### D. Data Analysis

The researcher analyzed the data using the constant comparative method which is the “process of taking information from data collection and comparing it to emerging categories” [4]. To arrive at the explanation of the teaching interns’ notions of empathy in teaching mathematics in this study, “constant comparative coding procedures” involving the comparison of “incident to incident, incident to category and category to category” [6] were performed. Glaser (2008) identified four stages in this method: “1) comparing incidents applicable to each category, 2) integrating categories and their properties, 3) delimiting the theory, and 4) writing the theory” [7]. It is understood though that collecting and analyzing data and memoing are simultaneously done throughout the study.

Each interview was transcribed and those in vernacular were translated. The initial interview was examined line by line then coded. The same was done to the subsequent interviews while ideas were being compared with the previous ones. The categories that arose were re-coded or merged with the others until such time that the core category was determined. Then selective coding took place until saturation was attained. The core category in this study did not have stages in contrary to a basic social process that is one type of core category with two or more clear emergent stages. But other theoretical codes may be used when core categories do not have stages [8]. In this study, dimensions were used as the other theoretical code.

## III. FINDINGS AND DISCUSSION

### Core Category and Related Categories

Becoming the teacher one needs is the core category revealed by the data in this study. This was taken from the response of Tricia, one of the participants: “*I always remind myself to be the teacher that I needed when I was a student*”. And to be this kind of teacher, one has to remember as well how to be this student. Another response

from another participant was: *“If you want to become a teacher, you will become a student forever”*. This participant meant that a teacher never stops learning even when he/she is the one teaching. The teacher must keep in mind at all times how it feels to be a student. This is how one can be able to put himself/herself in the shoes of his/her learners.

To be this kind of the teacher that every student needs, these are the five related categories that can be grouped into two dimensions: acknowledging learners’ levels of mathematical ability, keeping the learners interested, sensing and responding to learners’ emotions, connecting mathematics to real life and teaching for learning. The first dimension is knowing the nature of the learners with the related categories: acknowledging the learners’ levels of Mathematical ability, keeping the learners interested and sensing and responding to learners’ emotions. Connecting Mathematics to real life and teaching for learning are the other related categories under the second dimension of knowing Mathematics content and pedagogy. A teacher that one needs is a teacher that ceases not to learn about his/her learners, the subject that he/she teaches and how to teach it effectively.

### **Core Category: *Becoming the teacher one needs***

The participants reminisced the times when they were students of Mathematics themselves in the elementary and high school years and how their former Mathematics teachers taught them. Philip recalled, *“When I was in high school, I really admire how our mathematics teacher taught us about the subject”*. Carol also mentioned, *“Teach the way you wanted to learn. ... I’ll recall every single moment way back in high school or elementary when my teacher teaches mathematics”*. The participants also narrated how they had to remind themselves how they were once students and the challenges they had to hurdle in learning the subject. Giana recounted, *“Because when I was a student before, I hardly understood math. I still need to study further in order to catch up with the topic. That is why I understand students and I will make sure that I can discuss in a specific way”*. As they remembered the students that they were in the past, they are motivated to teach in the present in a way that they would have wanted to learn themselves.

To become the teacher one needs also means that a teacher keeps in mind how it felt to be a student before so he/she can relate with the students he/she has at present and successfully put himself/herself in their shoes. Tatiana mentioned, *“You should recall all your past experiences as a student and integrate them on the learning strategies that you will use in teaching”*. In the journey to becoming the teacher one needs, a teacher acknowledges the need to continually learn new and novel teaching strategies as he/she teaches Mathematics to students who may be several generations younger than he/she is.

### **A. Knowing thenature of the learners**

One cannot put him/herself in the shoes of someone whom he/she doesn’t know. To know the nature of ones learners means to be fully aware of their cognitive, psychological, emotional and social needs. A teacher who knows best his/her learners knows how capable they are to do Mathematics, what keeps them interested, what are the ways that they express their emotions and how to respond to them.

#### **1. Acknowledging learners’ levels of Mathematical ability**

No two learners are ever the same, not even identical twins. Students of mathematics vary in their ability to do Mathematics. Teachers and prospective teachers alike know this and they consider these differences as they plan lessons and activities in Mathematics. Charles said, *“I will relate to my students and identify if they are capable of tackling the topic at hand because the first thing to consider is the learner”*. Tricia further said, *“...offer a proper method that is at par with their level of understanding”*. An empathetic teacher then is able to employ teaching strategies and methods suited to his/her learners’ capabilities and learning styles that he/she knows beforehand.

#### **2. Keeping the learners interested**

In this modern day and age, learners who are digital natives have shorter attention spans. To find ways to keep them interested would really prove to be extremely challenging. Carol remarked, *“The first thing I need to do is to motivate the students.”* Also, Grace said, *“I always think of a good way to encourage them to learn mathematics and to listen to my discussion”*. These participants perceive these actions of theirs as being empathetic to their learners. Motivating and encouraging the learners and sustaining their interest all throughout the class in Mathematics is a way of communicating to them with empathy “which is critical to human relationships and the learning process [9]. These are also manifestations of a teacher who is looking out for the welfare of his/her learners.

#### **3. Sensing and responding to learners’ emotions**

Learning is a complex process comprising both cognitive and affective factors [10]. Empathy, whether the cognitive or the affective kind, necessitates a teacher’s ability to sense the feelings of learners and respond to

them appropriately. Ryan expressed, *"I am now sensitive to the reactions and behaviors of the students, not like when I had been given the chance to teach in one session when I had my field study observation wherein I was spoon feeding the topic..."* A teacher who is sensitive to the emotions of the learners is according to Tricia, *"...a teacher that would answer their questions thoroughly. A teacher that understands them. A teacher who believes that everyone learns, just not at the same time"*.

### **B. Knowing Mathematics content and pedagogy**

The TPACK framework is used for "describing and studying teachers' professional knowledge" [11]. Apart from content knowledge and pedagogical knowledge of the subject matter, a teacher should also have technological knowledge and the intersection of these kinds of knowledge for a teacher to be truly effective. A teacher who understands Mathematics conceptually and procedurally plus integrates appropriate technology is able to connect the subject matter to real life and impart relevant concepts and skills meaningfully to the 21<sup>st</sup> century learners.

#### **1. Connecting Mathematics to real life**

Glenda mentioned, *"I try my best to let my students realize the importance of Mathematics in everyday life"*. A teacher with empathy makes the learners appreciate Mathematics more by letting them see its usefulness in real life situations. A learner who sees something relevant in his/her daily living will be motivated to learn it. Charles also said, *"Contextualize the concept so that students can relate it into real life"*. It is the teacher's task to teach a concept in context to make the learning of the said concept more enduring and meaningful.

#### **2. Teaching for learning**

An empathetic teacher teaches not just for the sake of teaching. He/she teaches with learning as the end result. He/she facilitates the learning of important concepts and skills in Mathematics. Sara cited, *"I have to go in a step-by-step procedure so that everyone can cope up. Each step should be elaborated and well-explained."* To put one's self in the shoes of another entails a thorough discussion of what needs to be learned by the learners. According to Philip, *"Since it (Mathematics) is known to be complicated, I always make sure that I'm able to deliver the discussion thoroughly. In this manner, I provide challenges along with the easy-to-understand procedures"*. A teacher with a heart for his/her learners, does not spare them from doing difficult tasks but instead gives them guidance and encouragement to successfully attain them.

## **IV. IMPLICATIONS**

Teaching Internship is the most valuable phase that every prospective teacher has to go through. The teaching intern applies the concepts, pedagogies and theories that he/she previously learned from his first year in college to the first semester of his/her fourth year. It is also the time he/she learns, relearns and unlearns them. This makes the internship phase a suitable ground to unearth and explore teaching interns' perceptions and notions of a very essential construct such as empathy. Empathic connections, as studies have shown, are relevant in increasing academic achievement and in keeping students more engaged in the educational process though incorporating it in competitive school environments can at times be difficult [9].

According to Martin Palmer, "The secret to mastery in any field is to forever be a student". The BSED Mathematics teaching interns, while in their Internship Phase, found themselves continuously learning based on their personal experiences, experiences of others and advices from their in campus and off campus student teaching mentors. They were previously called "Student Teachers" and true to this name, they are students who are teachers and teachers who are students. Learning never stops for them as they discover ways to improve their lesson plans, instructional materials, classroom management practices and methods of assessment.

This implies the need for teacher training institutions to provide avenues for the teaching interns to reflect on their practices and share these reflections and insights with other teaching interns. Supportive and empathetic mentors and administrators will also be necessary for these teaching interns to look up to for inspiration and guidance as they continue to shape their respective teaching philosophies and characters as future teachers. Supplemental training may be provided to these teaching interns as well in the light of Education 4.0 with Emotional Intelligence as the top 6 skill needed to thrive in the Fourth Industrial Revolution. Also, relevant technological gadgets and devices should be made available in the integrated laboratory classrooms so that the teaching interns may fully maximize their technological, pedagogical and content knowledge to make the teaching of Mathematics relevant, contextual and meaningful to optimize student learning.

## V. CONCLUSION

This grounded theory study aimed to explore BSEd teaching interns' notions of empathy as they teach mathematics. The core variable that emerged in this study was becoming the teacher one needs. This study contributed additional knowledge to the limited number of studies being conducted on empathy and teaching internship.

The findings of this grounded theory study revealed how the BSEd Mathematics teaching interns displayed empathy to their learners while teaching mathematics. These illuminated the teaching interns' sustaining of a student's stance to be the kind of teacher they themselves need. Though teachers-to-be, they never stop considering themselves "students" who are still always learning. They are in a never-ending state of knowing the nature of their learners, the subject matter that is Mathematics and how to teach it best. They are in a constant flux of finding ways to assess their learners' levels of Mathematics ability, to keep them interested and motivated and to sense and respond accordingly to the learners' emotions. Moreover, these teaching interns are exploring means to be able to connect mathematics to real life and teach effectively for genuine learning. To be an empathetic Mathematics teacher entails to be always learning about the learners, the subject and its pedagogy.

Apparently no emergent stages have been identified in the process of putting oneself in the shoes of the learners based on the notions of the Mathematics teaching interns. This goes to show that empathy, both a cognitive and emotional construct, is perceived to be actively interspersed all throughout the teaching-learning process. Indeed, "empathy plays a central role in the educational process" [12].

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