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Initial Assessment on Learners' Need in a Community: Basis for Pre-service Teachers' Teaching Immersion

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A B S T R A C T
Preservice teachers' preparation is crucial to the real world of teaching. To prepare teacher education students, field study courses are embedded in the curriculum before the teaching internship. Other preparations such as attendance to seminar/workshop with special topics relevant to the teaching-learning process as well as community immersions are included in the long list of preparations. Community immersion allows a preservice teacher to gain experience that later on will be important in the teaching practice. Such immersion can only be achieved successfully if preparation is done appropriately. In this study, a qualitative needs assessment was performed in one barangay in Olongapo City. An interview with the chair of the committee on education of the barangay was conducted to gather information about the participants and to the barangay's program for these learners. It revealed that mathematics literacy programs are the most sought after in the locale, which is followed by reading literacy and science learning. Observation and random interviews among the participants were performed to observe and document both the numeracy skills and scientific literacy skills of the participants in the program in this study. The result of the assessment and observation is therefore used to craft a literacy program that will be participated in by learners of the barangay and facilitated by BSED-Science and BSED-Mathematics Pre-service teachers.

INTRODUCTION

One important component in the preparation of the teacher is the ability to understand the community (Wiggins et al., 2007). Communities are important as equal partners in preparing teachers for the real world (Waddell, 2013). In the study of Waddell (2013), community experiences that are carefully designed will have a significant impact on the teachers' understanding of self and self-identity as teachers. To immerse pre-service teachers in this kind of activity, immersion programs and community immersion are done and included in the curriculum. Immersion activity has evolved into a means of skill development and opens doors to real-life teaching opportunities for pre-service teachers (Smith & Lev-Ari, 2005). In the study of Schaffer et al. (2014), immersion activities for pre-service teachers changed the perception and increased confidence and interest in teaching. According to the study of Arcilla et al. (2019), multiple challenges are bound to be faced by the student teachers. Therefore, preparation, training, and workshops are necessary to prepare the student teachers before undergoing a teaching internship. Community immersion can help prepare the teachers-to-be or pre-service teachers as it can provide opportunities to expand the pre-service teachers' understanding of where or when teaching and learning occur (Hamilton & Margot, 2019).

THEORETICAL REVIEW

Before the community immersion, difficulties and challenges must be identified through a needs assessment. Needs assessment is a process to identify, understand, and better address the different challenges in the field of education (Cuiccio & Husby-Slater, 2018). It provides insights into approaches that are most effective, outcomes and demands for the future program (McCawley, 2009). This needs assessment will enable us to address challenges in the community where the immersion program will take place.

Community immersion as a course or subject for pre-service teachers is design to immerse students in activities that will arm students with the capability to contribute to the upliftment of the general welfare of the community, specifically in the learning process for teacher education students. In this study, it sought to assess the needs of learners in science and mathematics subjects.

METHODOLOGY

This study sought to assess the needs of the learners in the chosen community of the third-year students of Bachelor of Secondary Education major in Science and Mathematics undertaking the course TC05: Community Immersion. The course is intended to immerse students in activities that will arm them with the capability to contribute to the upliftment of the community, especially in the aspect of learning as a pre-service teacher. Eighteen (18) hours of community immersion activity is the required contact hours for the immersion. There are eighteen (18) BSED-Science Pre-service teachers and fourteen (14) BSED-Mathematics Pre-service teachers. The participants of the study are the learners of Barangay Pag-asa, Olongapo City.

This study used qualitative research methodology, which makes use of interviews, observations, and document analysis. Observation in qualitative inquiry involves the use of the senses, especially looking and listening in a systematic and meaningful way (McKechnie, 2008). It is also useful to gain insights about certain settings (Busetto, et.al. 2020). In this study, observation is used to gather information about the needs for learning of the participants in the community immersion. Documentary analysis or document analysis is also used in this study. According to Bowen (2009), document analysis is used as a form of qualitative research approach in which documents are interpreted by the researcher. Also, a scoring rubric can be used to grade or score a document. The use of document analysis in this study is to support the gathered data in the observation and interview, and to provide a complete understanding of the phenomenon being investigated (Morgan, 2022).

The community immersion adviser, along with the student representatives of BSED-Science and BSED-Mathematics, visited the office of the Barangay Chairman to ask/request permission to conduct the community immersion in the barangay. The request has been granted and immediately referred to the barangay councilor handling the office on Committee in Education to discuss the nature of the teaching/community immersion. The said barangay regularly conducts summer reading and literacy camps for learners. The barangay chairman and councilor have requested the science and mathematics literacy program. This was also as per the initial survey of the barangay on the needs of the youth ages 5–11 years old.

The barangay official conducted pre-enlistment, which resulted in 62 learners being added to the list. Only 47 students attended the actual day of the assessment. Frequency and Percentage was used to describe the skills assessed in the participants of the study. The schedule of the activity is every Monday, Wednesday, and Friday of the two-week immersion period from July 11–25, 2022.

RESULTS AND DISCUSSION

The general aim of this study is to determine the needs for improvement of scientific literacy and numeracy among ages 5-11 years old. The output of the result will be used to formulate programs for the improvement of scientific literacy and numeracy among the learners. The proceeding tables present the result and analysis of the researchers.

Table 1. Age of the Participant

Age	*Frequency*	*Percentage*
5	*3*	*6.38*
6	*7*	*14.89*
7	*11*	*23.40*
8	*11*	*23.40*
9	*3*	*6.38*
10	*9*	*19.15*
11	*3*	*6.38*
TOTAL	***47***	***100***

Table 1 shows the age of the participants of the community immersion. Based on the table, majority of the respondents are in the age of 7 and 8 years old, both of which have with 23.4% or equivalent to 11 participants. On the other hand, both ages 5 and 11 years old have 6.38% or 3 participants to the immersion activity. Those who participated in the program also participated in the previous program as organized by the barangay committee on education.

Table 2. Mathematics Skill of the Participants

Skill	**Frequency**	**Percentage**
Number Identification	35	74.47
Number Discrimination	33	70.21
Missing Number	26	55.32
Addition	26	55.32
Subtraction	25	53.19

Table 2 presents the mathematics skill of the participants as part of the needs assessment. The skills were observed based on the early grade mathematics assessment. As shown in the table above, 74.47% of the participants were able to identify numbers while 53.19% were able to do subtraction as fundamental operations in mathematics. The early grade mathematics assessment is utilized across the country by virtue of DepEd Order No. 57 Series of 2015. EGMA is used as policy making and instructional intervention which is integral in the development of new practices (Platas, et.al 2015). In this particular study, the result will be used in framing a community immersion program for the BSED-Mathematics Pre-service teachers.

Table 3. Scientific Competencies of the Participants

Competencies	**Frequency**	**Percentage**
Identify Body Parts	27	57.45
Identify Shape	40	85.11
Identify/Describe living and non-living things	36	76.6
Identify/describe parts of the plants	27	57.45
Describe 3 phases of matter	35	74.47
Identify/describe the different natural objects in the sky	38	80.85

Table 3 shows the different scientific concepts/competencies that participants have an understanding of the competencies assessed were based on the Key Stage Standards and Grade Level Standards for Kinder to Grade 3 learners stated in the K-12 Curriculum Guide for Science (DepEd, 2016). As shown in the table above, 85.11% of the participants were able to identify shape while only 57.45% were able to identify and described body parts and the different parts of the plant. Science as one of particularly important domain in early childhood can build a basis for scientific understanding (Worth, 2010). Developing understanding of natural phenomena in the early grade school may be crucial in understanding complex science concept (Novak & Treagust, 2022). The result of this assessment will be important in developing program for the improvement of the participants' understanding of science concepts and natural phenomena.

CONCLUSION AND RECOMMENDATIONS

From the aforementioned results of the study, the researchers formulated the following conclusions:

- Most of the participants in the needs assessment can be classified in the grade level of K-3.
- The results of the observation, interview and document analysis revealed that there is a need for improvement of three mathematics skills based on the Early Grade Mathematics Assessment. Both skills in identifying the missing number and doing addition has 55.32% while the lowest skill observed among the participants with 53.19% is the skill in doing subtraction as a fundamental operation of mathematics.
- In the assessment of understanding scientific concept/competencies for the early grade, it revealed that there is a need in the development of participants' understanding of identifying and describing the different body parts in both English and Filipino terminology and the different parts of the plant, both of which has 57.45% out of 47 participants.

Based on the aforementioned results and conclusion of the study, the following were recommended:

- The result of the needs analysis must be used to craft a program for the improvement of numeracy skills and scientific literacy skills of the participants who are in the early grade levels.
- Use the DepEd Curriculum Guide in the crafting of the literacy programs on both mathematics and science subject.
- Participants must be distinguished based on the level of learning and the approach of the literacy program must be based accordingly with the participants' academic level.

FURTHER STUDY

This research still has limitations so that further research is still needed related to this topic.

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