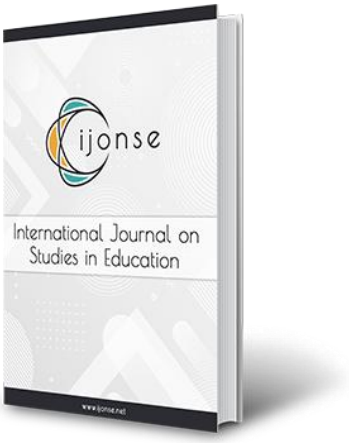

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Joemar Miñoza
Cebu Technological University-Consolacion, Philippines

Rogelio Sala
Cebu Technological University-Consolacion, Philippines

Arvin Salera
Cebu Technological University-Consolacion, Philippines

Luz Roldan
Cebu Technological University-Consolacion, Philippines

Himeji Ken Dela Peña
Cebu Technological University-Consolacion, Philippines

To cite this article:

Miñoza, J., Sala, R., Salera, A., Roldan, L., & Dela Peña, H.K. (2025). Literacy and numeracy needs of students: A teacher's perspectives. *International Journal on Studies in Education (IJonSE), 7*(3), 468-481. https://doi.org/10.46328/ijonse.1939

International Journal on Studies in Education

2025, Vol. 7, No. 3, 468-481 https://doi.org/10.46328/ijonse.1939

Literacy and Numeracy Needs of Students: A Teacher's Perspectives

Joemar Miñoza, Rogelio Sala, Arvin Salera, Luz Roldan, Himeji Ken Dela Peña

Article Info

Article History

Received:
20 January 2025
Accepted:
10 June 2025

Keywords

Literacy
Numeracy
Teachers' perspective
Phenomenology
Philippines

Abstract

The significance of literacy and numeracy skills cannot be discarded, but PISA results for the Philippines seems telling otherwise. Furthermore, school-based intervention programs have been implemented but low literacy and numeracy still confront the education system. Hence, this study explored teachers' perspectives on students' literacy and numeracy needs. This study utilized a qualitative research design, specifically a phenomenological research method with the use of semi-structured interview to gather the necessary data. Based on the informants' interview responses, four (4) themes were generated which are Poor Literacy and Numeracy Status of Students; Perceived contributing issues; School-Based Intervention programs' Encounters, and Sensible Measures in addressing Literacy and numeracy problems. Based on the themes generated, it can be concluded that literacy and numeracy skills are negatively affected by several pressing factors making them problematic which can be addressed collaboratively through sensible initiatives and intervention programs like reading literacy and numeracy programs which are deemed necessary to the improvement of these fundamental skills. This study recommends that stakeholders should do collaborative initiatives or intervention.

Introduction

Two important skills necessary for success in the modern world are literacy and numeracy. In addition to understanding, interpreting, and applying information, literacy includes the capacity to read, write, talk, listen, and think critically (Grotlüschen, Desjardins, & Liu, 2020; Posel, 2011; Ghosh, 2021; Sari, 2018; ALTUN, 2020). Analyzing reading materials and comprehending underlying concepts are also part of it. High literacy and numerical proficiency are essential for both successful learning outcomes and high-quality education. All other abilities are based on literacy, including digital, scientific, financial, numerical, cultural, and citizenship literacy (Desyandri, 2018; Nudiati & Sudiapermana, 2020). Students need to be able to study, innovate, use digital media, work in a variety of contexts, and assess knowledge for appropriateness and relevance (Naibaho, 2022; Öztürk, 2023; Ünal, 2024). When it comes to enhancing problem-solving abilities concerning numbers and symbols in daily life, numeracy literacy is especially crucial (Susanta, 2023). Solving real-world problems requires rational, critical, and methodical reasoning (Saputri et al., 2021). Understanding numerical reasoning and statistics, as well as evaluating the reliability of information, are further tasks that require mathematical literacy (Zahid, 2020; Prince & Frith, 2020).

Hence, the significance of literacy and numeracy skills cannot be discarded. However, 2018 and 2022 PISA results seem to tell a different narrative on how education value literacy and numeracy, especially in the Philippine context. Philippines placed at the bottom rank among Southeast Asian countries (Chi, 2023). This means that Philippines is one of the world's weakest in terms of reading, math, and science. This result is despite numerous positive research findings on the literacy and numeracy intervention programs implemented in the country (Santiago and Mustacisa, 2024; Pacia, 2024; Layug et al., 2021; Dulay et al., 2019). This ranking may also be ascribed to effects of the pandemic as reflected in the study of Samia (2024) which found a frustrating level of students' literacy and numeracy after the pandemic.

With these issues concerning the literacy and numeracy of the students, this study would like to contribute with continuing advocacy to boost the literacy and numeracy level of the Philippines through assessing the needs of students in terms of enhancing literacy and numeracy skills based on teachers' perspectives. Teachers' perspectives are deemed reliable as they are ones who have firsthand experience with the students, making them knowledgeable on the challenges of the students in acquiring these skills. Thus, this study explores teachers' perspectives on the students' literacy and numeracy needs.

Literature Review

In the international context, literacy and numeracy have been empirically explored. Syamsuddin et al. (2024) evaluated the impact of STEM approach in boosting numeracy and literacy profile among students. Using experimental design, the study found that students who received instruction with the STEM approach observed a notable increase in their literacy and numeracy skills as compared to those who received traditional teaching. This implies that STEM is an effective approach in enhancing numeracy and literacy. In the same year, Indrawatiningsih (2024) evaluated the effectiveness of the implementation of Differentiated Learning Activities in enhancing the literacy and numeracy skills of students. Using pre-experimental design, results found that the use of Differentiated Learning Activities can improve students' literacy and numeracy skills. Furthermore, using a pre-experimental approach, Pasaribu et al. (2024) investigate how the use of Augmented Reality (AR) affects students' reading and numeracy abilities. They discovered that integrating augmented reality (AR) media with the Limas Potong traditional house improved students' literacy and numeracy skills while providing them with a firsthand look at the features and structure of the house, which made math more engaging.

On the other hand, Gloriani et al (2023) examined whether literacy skills can influence numeracy skills of students. Using a descriptive-correlational design, it was revealed that positive correlation between literacy and numeracy skills, suggesting that reading and writing skills have a major influence on one's ability to do mathematical computations. In the following year, Nafi'an (2024) used a descriptive research design to analyze students' numeracy literacy skills. The analysis revealed that students demonstrated the ability to assess the material in the problem, use symbols and numbers to solve it, manipulate numbers and symbols effectively and with ease, and draw conclusions from their understanding and turn them into narrative form. Moreover, Aini, Hidayat, Kusnadi, Williams, and Hadibarata (2024) examine high school biology students' numeracy literacy skills in relation to biodiversity-related content. Results found that students had unsatisfactory numeracy literacy skills, heeding more

practice and improvement.

Qualitative research was also used in the study of literacy and numeracy of students. Recently, Hayati and Narimo (2025) described the initiative put in place to help children become more proficient in reading and numeracy through observation and documentation. It was revealed that literacy and numeracy skills are very important for students to master as they are seen as foundation skills as they proceed to higher grade levels. Learning is observed to be easier when students have already mastered literacy and numeracy. Maharani and Dasari (2024) also conducted qualitative research on Numeracy Literacy Ability as perceived by the students which were grouped according to thinking characteristics which resulted in different ways of approaches in solving the numeracy literacy problems.

The above research shows that students' reading, and numeracy skills are greatly improved by STEM, augmented reality, and differentiated learning activities (Syamsuddin et al., 2024; Indrawatiningsih, 2024; Pasaribu et al., 2024). Literacy and numeracy are positively correlated, indicating that mathematical capabilities are enhanced by excellent reading and writing ability (Gloriani et al., 2023). The long-term effects and efficacy of these educational interventions, however, require further investigation (Nafi'an, 2024; Aini et al., 2024; Hayati & Narimo, 2025; Maharani & Dasari, 2024).

In the Philippine context, literacy and numeracy have also been highly explored especially on the programs and interventions implemented to enhance literacy and numeracy both quantitively and qualitatively. Santiago and Mustacisa (2024) investigated the effectiveness of literacy and numeracy programs implemented on students' academic achievement. Results revealed that though there was high integration of literacy and numeracy program in the curriculum, it did not improve students' academic achievement. Moreover, they found that socio-economic, access to reading materials and positive parental involvement were pivotal in the implementation of the literacy and numeracy programs. Likewise, effective instruction is found to have a stronger association with students' academic achievement. In the same year, Pacia (2024) determined the impact of Early Language Literacy and Numeracy on the National Achievement Test of the learners of. Results showed that students' proficiency in the seven school divisions in the MIMAROPA region had significantly improved, especially in language literacy and numeracy. Additionally, the ELLN program has continuously promoted learners' skill development, demonstrating its beneficial effects on academic performance.

Layug et al. (2021) assessed the interventions employed by teachers to enhance numeracy skills among grade 7 students. Results revealed that "Conference with parents and students, One-on-One Tutorial, Redo Activities with Low scores, Home Visitation, Provide Supplementary Materials and Activities, Lessen Items of Activities and Remedial Class" were the interventions which were perceived to be moderately effective to highly effective as it addresses the diminishing numeracy skills among students at that school. The effectiveness of parent coaching programs intended to improve literacy and numeracy conditions at home was assessed by Dulay et al. (2019). Participants were randomized to early literacy skills training, dialogic reading, numeracy, and control groups. Children in the dialogic reading group showed improvements in print and word awareness, as well as vocabulary understanding for words in the books they were exposed to, whereas children in the numeracy group showed

improved basic and advanced arithmetic skills. The phonological awareness, print and word awareness, and letter name knowledge of the children in the early reading skills training group were all enhanced.

Mozar (2024) examined the teachers' interventions in improving students' numeracy skills using phenomenological research. Results found that there were teachers' challenges revolving around managing a variety of learning requirements, lacking confidence and drive in mathematics, and having trouble keeping pupils interested. Teachers are found to cope with these challenges through applying individualized training, incorporating technology, and connecting math to real-world situations. Furthermore, it was revealed that teachers value continual professional development to stay on track in the trends of teaching. Another qualitative study is of Santillan (2023) which explored issues and elements influencing pupils' literacy and demonstrated how evidence-based intervention techniques enhanced literacy results and supported the overall growth of the community.

On the other hand, Samia (2024) examined the reading and numeracy skills of students before, during, and after the pandemic. The reading profiles of the students before the pandemic, during the pandemic with modular classes, and after the epidemic with face-to-face sessions differ significantly, according to the results. Additionally, research shows that most students are at the frustration level during SY 2022–2023, with more unfavorable rankings. While Maquiling (2024) investigated how reading and numeracy are taught in multigrade classrooms. Using quantitative techniques, the results showed that a sizable portion of students in every grade level need a comprehensive refresher course. Multigrade teachers use technology integration the least and flexible grouping, integrative learning, and constructivism the most. The obstacles encountered included pupils' inability to comprehend complicated texts, decode words, and grasp, as well as limited lesson hours, resources, and materials.

Studies conducted in the Philippines show that literacy and numeracy programs have varying effects on students' academic performance, with socioeconomic status, parental participation, and reading material availability being important variables (Santiago & Mustacisa, 2024; Pacia, 2024). The effectiveness of interventions including technological integration, tailored training, and parent coaching in improving literacy and numeracy skills has varied (Layug et al., 2021; Dulay et al., 2019; Mozar, 2024). Nonetheless, issues including sustaining student engagement, managing a variety of learning demands, and resource scarcity continue to exist, suggesting the necessity for ongoing professional development and more all-encompassing strategies (Samia, 2024; Maquiling, 2024; Santillan, 2023).

Method

This research used qualitative research design specifically a phenomenological method of investigation as this involves a phenomenon on human experiences and perspectives. The main source of data were the eight (8) teachers from the selected schools in the municipality of Consolacion who were purposively selected. These teacher-informants are selected for they are the respective chairpersons or focal persons in English and Mathematics, making them suitable informants. The data were collected using a researcher-made semi-structure interview that went through a review and validation from a qualitative expert before the actual conduct of the

interview. The informed consent form was signed by the informants indicating their voluntary participation in this research. The utterances of the informants were then transcribed and analyzed using the Six-Phase Approach to the Thematic Analysis of Braune and Clark (2006). Informants' confidentiality is observed throughout the research process.

Results and Discussion

Thematic analysis of the informants' utterances reveals four (4) themes which are 1. Poor Literacy and Numeracy Status of Students; 2. Perceived contributing issues; 3. School-Based Intervention programs' Encounters, and 4. Sensible Measures in addressing Literacy and numeracy problems. These themes generated from the informants' perspectives are insightful inputs towards improving literacy and numeracy skills among students.

Theme 1: Poor Literacy and Numeracy Status of Students

The informants have common responses regarding the status of their students' literacy and numeracy skills. They all believe that the literacy and numeracy of students have diminished. It is further believed that the diminishing literacy skills have negatively impacted students' numeracy skills and their performance on other subject areas. According to the informants, problems on literacy have been alarming as it becomes worse for students who are promoted in higher grades even, they have reading problems, worse, even if they cannot read, resulting in having non-readers even in junior high schools. This is reflected in the following extracts:

> *"The literacy performance in our school is low. 50% from grades 7 and 8 need interventions and 20% from higher grades."*

> *"I am shocked why students are promoted to grade 7 despite problems in reading which is supposedly addressed in elementary years. Nevertheless, when they reach grade 8 and 9, non-readers become fewer in number. But there are still students in grade 10 who are non-readers."*

> *"No one gets perfect even one or two from the class despite how easy the activities are. Numeracy skills are really low even when it comes to basic operations."*

This phenomenon of diminishing reading and numeracy skills is reflected in the recent performance of Filipino students in 2022 PISA results which indicate that among Southeast Asian nations, the Philippines came in last (Chi, 2023). This indicates that the Philippines is among the least proficient countries in the world in terms of science, math, and reading. This seems inconsistent to latest research findings which revealed improved literacy and numeracy among Filipino students due to effective interventions including technological integration, tailored training, and parent coaching (Layug et al., 2021; Dulay et al., 2019; Mozar, 2024). Likewise, literacy was positively impacted by STEM, augmented reality, and differentiated learning activities (Syamsuddin et al., 2024; Indrawatiningsih, 2024; Pasaribu et al., 2024). This implies that interventions and pedagogical practices that have been proven effective to improving literacy and numeracy should be uphold, strengthened, and practiced in the

teaching of reading literacy and numeracy to improve the performance of Filipino students in PISA. Moreover, this would translate consistency on research findings of improved literacy and numeracy and PISA results. In addition, pedagogical practices and initiatives that may augment these fundamental skills should be continually explored.

Theme 2: Perceived Contributing Issues

The poor literacy and numeracy skills of students are believed to have been influenced by some contributing factors. The informants mentioned four factors believed to impact negatively on the students' literacy and numeracy skills. These are less parental involvement, post pandemic effects, non-regulation of gadget use, and distracted and unorganized curriculum. Informants believe that learning can never be the sole responsibility of the school but a concerted effort between the parents and the school and even the community. Hence, the lesser involvement of the parents, the more challenging the teacher's job will be in improving children's literacy and numeracy skills. Moreover, informants ascribed the poor literacy and numeracy skills to the recent unprecedented Covid-19 pandemic as no formal education was implemented due to the said crisis. Children were just left with modules with parents busy making a living.

Another factor that informants believe has affected poor literacy and numeracy is the non-regulation of gadget use. Nowadays, children are so addicted to the use of mobile phones for gaming purposes, affecting their study hours. Finally, informants believed that the curriculum used in the department of education seems unorganized and distracted unlike the previous curriculum. The spiral progression that is used in today's curriculum seems to jump from one lesson to another without any connections at all, making it unorganized and distracting as described by the informants. Poverty has also been seen as an issue towards poor literacy and numeracy.

These issues mentioned are reflected in the following utterances:

> *"First, learning should start at home. if parents are not involved on their children's learning, nothing will happen."*
>
> *"For me, pandemic has a percentage in these literacy and numeracy problems."*
>
> *"Even parents cannot regulate the use of cellphones. Students have more time for social media than for scanning their notebooks."*
>
> *"Curriculum itself is the problem. Students cannot focus on mastering the competencies and skills sets. The curriculum wants us to comply with the various subjects, but there is no impact on the students."*

Philippine educational system has been confronted with various pressing and perennial problems that includes those which were mentioned by the informants. These have also been reflected in several research findings. The first recurring problem is the diminishing parental involvement caused by social problems such as poverty and

inaccessibility of education. Parents tend to prioritize poverty alleviation over attending to the scholastic needs of their children. Diminishing parental involvement echoes to Minoza and Elloran (2023) which revealed that parents believe that the only way they can support their everyday necessities, they are taking up more of their livelihood. Since they have nothing left over to spend on food and other necessities, their failure to support themselves would be equivalent to their children not attending school. This likewise affirms that less parental involvement is not only a problem in education but also a social problem. This is supported by Zhang et al. (2023) by claiming that families with low incomes face challenges include inadequate funding for schooling, unfavorable housing circumstances, and a lack of community services. Likewise, Kuru Cetin and Taskin (2016) found that parents from higher socioeconomic backgrounds were more forthcoming and involved in the educational process.

In addition, poor reading literacy and numeracy have been ascribed to the pandemic as contributing to this phenomenon. This is reflected in the studies of Ina Suryani et al. (2024) who found increasing illiteracy and Cariedo (2024) generated themes like deterioration of reading literacy. All these findings were ascribed to the pandemic. This implies that the pandemic has negatively impacted literacy and numeracy and the entire learning process.

Non-regulation of gadget use, which led to more time on social media and gaming was mentioned by the informants. The informants observed this as detrimental to students' reading literacy and numeracy. However, studies have shown opposing findings on how the extent of gadget use affects literacy and numeracy. Manulat et al. (2024) and Geniston et al. (2024) revealed that the extent and even addiction of gadget use does not hinder reading development. This is contrary to the findings of Zain et al. (2022) who found that gadget use may have benefits but could negatively impact children's cognitive abilities, social lives, health, and speech delays, all of which may have a long-term effect on their education. This is consistent with the findings of Aprianti et al. (2022) who acknowledged the positive effects of gadget use but still emphasizing overuse of technology will affect students' learning outcomes. These inconsistent findings imply further exploration of gadget use and its effects on learning outcomes like literacy and numeracy. This further implies that regulation in the use of technology should be underscored among learners.

Another factor observed by the informants is the distracted and unorganized curriculum used in the basic education which according to them is unorganized and out-of-focused which leads to poor mastery of the skills expected from them as it is anchored on a spiral principle. This reflects on the idea of Bloomberg (2024) who acknowledged that students who may not initially grasp a skill but do better with repeated exposure benefit from spiral curricula. But the issue with most of these curricular approaches is that they do not adequately introduce a skill before spiraling it. Before introducing or spiraling a new ability, they do not give students enough time to learn the current one or even "slightly" master it. This is exactly the point of the teacher-informants that low mastery is developed as competencies are overwhelming while time is scarce. Furthermore, Dunto and Co (2018) found that the spiral progression curriculum in the basic education in the Philippines is not implemented well, as they revealed that teachers have inadequate training on this curriculum leading a shortage of qualified teachers and sprouting of incompetent teachers. This implies that spiral curriculum that is implemented in the basic education in the Philippine Education system needs to be revisited.

Theme 3: School-Based Intervention programs' Encounters

Schools acknowledged the importance of literacy and numeracy, and the challenges students face in developing these fundamental skills. Hence, school-based interventions programs are implemented to address these problems. However, challenges arose like teacher and student's ratio, not enough conducive school facilities, insufficient teachers' time, uncooperative parents and seldom PTA meetings.

These encounters are reflected in the following interview extracts:

> *"Based on the number of students who are part of our school-based intervention program, roughly hundreds of them, then we will be expecting that it will double soon, how can we divide our body? our number won't suffice."*
>
> *"We cannot start the school-based intervention programs right away for we do not have classrooms intended for that purpose. We really wanted to start because we know it's really needed, but where?"*
>
> *"There is not enough time for us to cater the needs of our students who have problems with reading."*
>
> *"In our school-based intervention program, we make sure that parents are involved in tutoring their children. In fact, we ask for pictures from them as proof that they are helping their children at the weekend. Sad to say, no one has sent pictures yet. I guess they are busy."*
>
> *"PTA meetings are seldomly scheduled."*

In the implementation of the school-based initiatives, the increasing cases of poor literacy and numeracy among students is becoming agonizing and overwhelming to teachers, especially since they are few in numbers resulting in disproportion. Adding to their burden is the lack of school facilities like conducive classrooms that could be designated as their intervention areas. Time constraints have also been encountered by teachers in the implementation of their school-based initiatives. Teachers are also the administrative staff of the school, which makes their workload overloaded, making school-based initiatives pending. Furthermore, school-based initiatives were designed to actively involve the parents, the opposite is true. Teachers received limited feedback and participation from the parents in the implementation of their initiatives. Likewise, the schools' PTA that could strengthen parents' involvement has rarely been initiated meetings for parents.

The study of Galang et al. (2021) found that small student-teacher ratio could result to improve reading literacy skills, as they observed that countries observing small teacher-student ratio like Singapore, Malaysia, and Brunei Darussalam performed well in PISA, contrasting to those countries observing big teacher-student ratio like Indonesia and Philippines. This is also true in the context of Bangladesh as Paul et al. (2021) revealed that districts with larger student-teacher ratios have lower literacy rates. This implies that the increasing number of students having serious problems of literacy and numeracy should be addressed by lowering the teacher-student ratio. On

the other hand, school facilities and infrastructure have also been empirically proven crucial in the learning environment which affects learning (Yangambi, 2023). Furthermore, complete school facilities when used accordingly are found to maximize learning achievement as it makes learning smooth and conducive (Fadiya et al., 2023; Ranal et al., 2023). Hence, the improvement of school facilities would provide learners with conducive learning environments that would help them develop literacy and numeracy skills.

Insufficient time for teachers to implement school-based initiatives are ascribed to their workloads, making them burn out which is a widespread problem in education setting (Jomuad et al., 2021). Tarraya (2023) also found that heavy workloads influence teachers' overall effectiveness and efficiency which need to be given attention. Moreover, due to workload demands, teachers are found to face the difficulty of working past their statutory work hours (Bongco and Ancho, 2023). Another reason school-based initiatives do not work is ascribed to uncooperative parents which is made worse by rare Parent Teacher Association (PTA) meetings. Despite various literature saying the significant role of parents and PTA, support from them continues to be manifested among schools.

Theme 4: Sensible Measures in Addressing Literacy and Numeracy Problems

With the unsurmountable challenges brought by literacy and numeracy along with its implementation of the school-based initiatives, informants are pliable and embracing external support and initiatives that can help them in their mission in boosting literacy and numeracy skills of students. External/Community Initiated Intervention-programs are helpful as they help students develop fundamental skills and lessen teachers' workloads. This upholds informants' claims that learning is not a solo endeavor but a collaborative task among parents, teachers, and community. Sensible projects are needed to the topsy-turvy system of education. Another sensible measure suggested is the review of the curriculum, suggesting that the old curriculum be reinforced.

These claims are reflected in the following utterances:

> *"I would say that if someone like you, a university, can take part of this problem with the help of your students"*
>
> *"On our end, community-based interventions could unload our job or at least lessen our workloads"*
>
> *"Curriculum itself again is the problem. a lot of subjects are offered but there is no mastery of skills. Again, no impact on the children. I suggest that it should be revised.*

Teachers embrace any help from the community in the form of outreach or intervention programs that can help them address the diminishing literacy and numeracy skills. Various community extension programs have been initiated and have contributed to the problem of literacy and numeracy. Arciosa et al. (2022) found that literacy and numeracy enhancement programs have improved the learning outcomes of the respondents. Likewise, Quezada (2014) found that extension programs and services of the University were effective in improving literacy,

livelihood, and environment. Munda et al. (2024) examined the effectiveness of Project Counts which aims to improve numeracy skills and revealed that students' numeracy abilities were enhanced by Project COUNTS, with noteworthy improvements from the pretest to the posttest and especially good outcomes for female students. This implies that extension projects are helpful in addressing the problems of literacy and numeracy.

On the other hand, teachers believe that curriculum must be reviewed, making it more focused to the mastery of the skills of the learners. As mentioned in the previous section, the spiral curriculum Is not well-implemented (Dunto and Co, 2018). Furthermore, due to lack of time and unpreparedness, teachers do not adequately introduce a skill before spiraling it, making competencies and skills slightly mastered Bloomberg (2024). Hence, a review on the current curriculum of the basic education in Philippines should be considered. With these sensible solutions, problems in literacy and numeracy may be addressed.

Conclusion

This study explored teachers' perspective on students' literacy and numeracy needs. Based on interview responses, four (4) themes were generated revealing poor literacy and numeracy influenced by less parental involvement, pandemic, too much gadget use, and distracted and unorganized curriculum. Moreover, school-based initiatives faced overwhelming challenges including teacher and student's ratio, not enough conducive school facilities, insufficient teachers' time, uncooperative parents and seldom PTA meetings which heed external support and initiatives that would help teachers in boosting literacy and numeracy skills. Based on the themes generated, it can be concluded that literacy and numeracy skills are negatively affected by several pressing factors making them problematic which can be addressed collaboratively through sensible initiatives and intervention programs like reading literacy and numeracy programs which are deemed necessary to the improvement of these fundamental skills. This study recommends that stakeholders should do collaborative initiatives or interventions to address problems in literacy and numeracy.

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Author Information

Joemar Minoza
https://orcid.org/0000-0002-6707-7593
Cebu Technological University-Consolacion
Philippines
Contact e-mail: *joemar.minoza@ctu.edu.ph*

Rogelio Jr. Sala
https://orcid.org/0000-0003-1149-5099
Cebu Technological University-Consolacion
Philippines

Arvin Salera
https://orcid.org/0009-0006-5722-8155
Cebu Technological University-Consolacion
Philippines

Luz Roldan
https://orcid.org/0009-0003-0285-8756
Cebu Technological University-Consolacion
Philippines

Himeji Ken Dela Peña
https://orcid.org/0009-0004-8761-5151
Cebu Technological University-Consolacion
Philippines