

Research Article

Beyond Numbers: Exploring the Experiences of Mathematics Teachers Assigned to Teach EsP

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Abstract: This qualitative study explored the experiences of Mathematics teachers who were assigned to teach Edukasyon sa Pagpapakatao (EsP), a subject that emphasizes values education, character formation, and moral development. Conducted in Barotac Nuevo, Iloilo, Philippines, the study used a narrative inquiry approach, drawing on interview data from three public high school teachers. Through thematic analysis, three major themes emerged: (1) increased workload and reduced confidence due to lack of subject mastery, (2) self-directed learning and collaboration as adaptive strategies, and (3) uneven access to institutional support and professional development opportunities. Teachers reported challenges such as the lack of EsP-specific teaching materials, limited prior training, and the difficulty of transitioning from teaching Mathematics in English to teaching EsP in Filipino. These factors led to a sense of inadequacy and a heavier workload, as lesson planning required more time and effort. In response, participants adopted coping strategies, including attending seminars, researching independently, collaborating with colleagues, and drawing from their own experiences to make EsP lessons more relatable. However, the level of support provided by their respective schools varied significantly – some teachers received technical assistance and access to training, while others lacked essential tools like internet connectivity and updated resources. The study highlights the broader implications of out-of-field teaching on instructional quality and teacher well-being. To address these challenges, the study recommends that schools provide targeted training, mentoring programs, and equitable access to teaching resources to enhance the capacity and confidence of teachers handling non-specialized subjects.

Keywords: out-of-field teaching; EsP; Mathematics teachers; teacher experiences; narrative inquiry

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1. Introduction

Education systems continue to evolve in response to the changing needs of learners and society. In the Philippines, the implementation of the K to 12 Basic Education Curriculum was intended to develop well-rounded learners equipped with knowledge, skills, values, and attitudes needed for responsible participation in society. One of the learning areas included in the curriculum is Edukasyon sa Pagpapakatao (EsP), which emphasizes values formation, moral development, ethical decision-making, and responsible citizenship (Felisilda & Parojenog, 2022).

Despite the importance of EsP, schools may experience difficulties in assigning teachers to subjects that correspond directly with their formal specialization. Staffing requirements, teacher availability, and school-level needs may result in teachers being assigned to teach subjects outside their academic preparation. This practice, commonly referred to as out-of-field teaching, remains a concern in many educational systems, including the Philippines. Recent Philippine policy research has brought renewed attention to teacher-subject mismatch. Mejia et al. (2025), in a policy note published by the Philippine Institute for Development Studies, reported that mismatches between teachers' specialization and their teaching assignments may affect instructional quality, teacher confidence, and student engagement. The authors emphasized the importance of teacher-subject matching, targeted professional development, and strategic workforce planning.

Out-of-field teaching may present challenges for teachers because they are expected to teach content for which they may have had limited formal preparation. Ingersoll (2002) noted

that teaching outside one's field of preparation may have implications for instructional quality and teacher confidence. Hobbs (2013) similarly explained that teachers who cross subject boundaries may encounter challenges related to subject knowledge, lesson preparation, and professional identity. More recent research continues to demonstrate the relevance of these concerns. O'Meara and Fitzmaurice (2025), for instance, examined out-of-field Mathematics teachers and found that subject knowledge and confidence remain important concerns when teachers work outside their formal preparation. Perl-Nussbaum et al. (2025) further emphasized that professional development for out-of-field teachers should recognize teachers' existing knowledge and help them integrate new subject-specific practices with their prior professional resources.

Similar concerns have been documented in the Philippine context. Studies have reported difficulties related to unfamiliar subject content, limited instructional materials, additional preparation demands, and the need for teachers to develop strategies to manage new teaching responsibilities (Aventura & Viña, 2023; Candelario & Abo, 2025; Melloria et al., 2023). These challenges are also connected to teacher workload. DepEd Order No. 005, s. 2024 recognizes the importance of rationalizing teachers' workload and promoting a sustainable working environment for public school teachers. The policy specifically addresses the rationalization of teachers' workload in public schools and payment of teaching overload. When teachers are assigned to subjects outside their specialization, additional time may be required to study unfamiliar content, locate appropriate resources, and prepare lessons.

The differences between Mathematics and EsP make this issue particularly relevant. Mathematics emphasizes logical reasoning, quantitative thinking, and problem solving, while EsP focuses more strongly on values formation, moral reasoning, interpersonal relationships, reflection, and responsible decision-making. Consequently, Mathematics teachers assigned to EsP may need to adjust not only their subject knowledge but also their instructional approaches, classroom communication, lesson preparation, and assessment practices.

Although research on out-of-field teaching has increased, relatively little attention has been given to the specific experiences of Mathematics teachers assigned to teach EsP in Philippine public secondary schools. Existing studies have examined teachers assigned outside their specialization in different subject areas, including Science, English, Filipino, and Social Studies (Candelario & Abo, 2025; De La Cruz & Alda, 2024; Flang & Magindra, 2025; Gomez & Petalla, 2025). However, the movement from Mathematics to a values-oriented subject such as EsP remains less explored. This gap is significant because the assignment involves not only unfamiliar content but also differences in instructional objectives, classroom communication, and pedagogical practices.

The study is also guided by Vygotsky's (1978) social constructivist perspective, which emphasizes the role of interaction, collaboration, and assistance from more knowledgeable others in learning and development. This perspective provides a useful lens for understanding how teachers assigned outside their specialization learn through consultation, mentoring, collaboration, and professional interaction. Flores and Day (2006) likewise emphasized the role of professional and contextual factors in shaping teachers' identities and experiences as they respond to changing educational demands.

Barotac Nuevo National Comprehensive High School provides a relevant setting for examining this issue. As in other public secondary schools, staffing requirements may sometimes result in teachers handling subjects outside their formal specialization. Mathematics teachers in the school have experienced assignments to teach EsP. Although such assignments may address immediate staffing needs, they may also create challenges involving lesson preparation, teacher confidence, instructional resources, and professional adjustment. Examining these experiences in their actual school setting provides an opportunity to understand how teachers respond to out-of-field teaching within their everyday professional context.

Therefore, this study explored the experiences of Mathematics teachers assigned to teach EsP. Specifically, it sought to answer the following questions:

- (1) What difficulties do Mathematics teachers encounter when teaching EsP?
- (2) What strategies or coping mechanisms do they use to adapt to teaching EsP?
- (3) What support or training do they perceive as necessary to improve their competence and confidence in teaching EsP?

By addressing these questions, the study hopes to contribute to a deeper understanding of teacher adaptability, professional resilience, and the support systems needed for effective out-of-field teaching. The findings may provide valuable insights for school administrators, curriculum planners, teacher educators, and policymakers in developing programs and policies that better support teachers assigned to subjects outside their area of specialization.

Ultimately, this study extends beyond issues of teacher deployment and workload. It highlights broader concerns related to teacher identity, professional growth, instructional quality, and student learning. By giving voice to Mathematics teachers who navigate the challenges of teaching EsP, the study seeks to inform more responsive educational policies and promote supportive working environments that enable teachers to succeed regardless of teaching assignment.

2. Materials and Methods

2.1. Research Design

This study employed a qualitative narrative inquiry design to explore the experiences of Mathematics teachers assigned to teach EsP, a subject outside their formal specialization. Narrative inquiry was appropriate because it provides a way of understanding human experiences through the stories and personal accounts of individuals (Clandinin & Connelly, 2000). Rather than focusing only on isolated difficulties, the approach allowed the researchers to examine how participants experienced their assignments, responded to challenges, sought assistance, and made sense of their professional experiences over time.

The study considered participants' experiences within their actual school and professional contexts. Particular attention was given to how their experiences changed as they became more familiar with EsP, how their interactions with colleagues and school leaders influenced their adjustment, and how the school environment shaped their experiences. Participants were given opportunities to describe their experiences in their own words, allowing the researchers to develop a contextualized understanding of teaching outside one's formal specialization.

2.2. Research Participants

The participants were three Mathematics teachers from a public secondary school in Barotac Nuevo, Iloilo, Philippines. All participants were licensed professional teachers whose formal specialization was Mathematics and who had experience teaching EsP. Participant 1 was 34 years old and had four years of experience teaching EsP. Participant 2 was 35 years old and had seven years of experience, while Participant 3 was 41 years old and had eight years of experience teaching the subject.

Purposive sampling was used because the participants had direct experience with the phenomenon under investigation. Selection was based on their Mathematics specialization, experience teaching EsP, and willingness to participate in the study. Before data collection, the purpose of the study and the participants' rights were explained, and informed consent was obtained. Their narratives served as the primary source of information for understanding the difficulties, adaptive strategies, and support needs associated with teaching EsP outside their specialization.

2.3. Data Collection Procedure

Data were collected through semi-structured face-to-face interviews using a researcher-developed interview guide (Appendix A). The interview guide provided structure to the interviews while allowing participants sufficient freedom to describe their experiences in their own words. The questions focused on the participants' teaching backgrounds, experiences when they were assigned to teach EsP, difficulties encountered, strategies used to adapt to unfamiliar content, support received from colleagues and school leaders, professional development needs, and reflections on teaching outside their area of specialization.

Prior to data collection, permission to conduct the study was obtained from the school administration. Participants were informed about the purpose and procedures of the study and were asked to sign an informed consent form. Individual interviews were conducted in a quiet and private location within the school to provide a comfortable setting and to maintain the confidentiality of the participants' responses.

Each interview lasted approximately 20 to 30 minutes and was audio-recorded with the participants' permission. Field notes were also taken during the interviews to document relevant observations and contextual details that could supplement and support the interpretation of the participants' narratives.

2.4. Data Analysis

The interview recordings were transcribed verbatim and reviewed repeatedly to develop familiarity with the participants' accounts. Significant statements and recurring ideas related to the research questions were identified and initially coded. Similar statements were compared and grouped into broader categories. The researchers examined these categories across the participants' narratives while also considering similarities and differences in their individual experiences.

The analysis was guided by the three-dimensional narrative inquiry framework of Clandinin and Connelly (2000), particularly the dimensions of temporality, sociality, and place. Temporality considered how the participants' experiences developed and changed over time; sociality focused on their personal feelings, relationships, and interactions with others; and place considered the school and institutional contexts in which their experiences occurred. These dimensions helped the researchers interpret the participants' accounts within their personal and professional contexts rather than treating individual responses as isolated statements.

Through repeated comparison of the coded narratives and discussions among the researchers, recurring patterns were identified and organized into broader themes. The researchers revisited the transcripts and emerging themes to ensure that the interpretations remained grounded in the participants' accounts. Three major themes emerged from the analysis: (1) increased workload and reduced confidence due to limited subject knowledge, (2) self-directed learning and collaboration as adaptive strategies, and (3) uneven access to institutional support and professional development.

2.5. Scope, Delimitations, and Trustworthiness

The study focused on the experiences of three Mathematics teachers assigned to teach EsP in a public secondary school in Barotac Nuevo, Iloilo. It specifically examined the difficulties they encountered, the strategies they used to adjust to teaching EsP, and the support and training they perceived as necessary. The study did not measure students' academic performance or quantitatively evaluate teacher effectiveness. Instead, it focused on the participants' narrated experiences and the meanings they attached to teaching outside their specialization. Because the study involved only three teachers from one school, the findings are not intended to represent all Mathematics teachers or all public secondary schools in the Philippines. Rather, the narratives provide a contextualized understanding of out-of-field teaching that may offer insights for educators and researchers examining similar experiences in other settings.

The trustworthiness of the study was considered using the criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln and Guba (1985). Credibility was strengthened through repeated review of interview transcripts and careful comparison of emerging interpretations with the participants' statements. The researchers also considered the context surrounding each participant's narrative when interpreting the data.

Transferability was addressed by providing descriptions of the participants, research setting, and procedures. These details allow readers to determine the relevance of the findings to other contexts involving teachers assigned outside their specialization. Dependability was supported by maintaining records of the procedures followed during data collection, transcription, coding, and theme development. Confirmability was addressed by grounding interpretations in the participants' narratives and maintaining awareness of the researchers' assumptions throughout the analysis.

2.6. Ethical Considerations

Ethical considerations were observed throughout the study. Before the interviews, participants were informed about the purpose of the research, the interview process, the intended use of the information they provided, and their rights as participants. Written informed consent was obtained from each participant. Participation was voluntary, and

participants were informed that they could decline to answer any question or withdraw from the study without penalty.

The privacy and confidentiality of participants were protected. Participant codes were used instead of names, and identifying information was excluded from the presentation of findings. Permission to conduct the study was obtained from the school administration before data collection. Interview recordings, transcripts, and other research materials were stored securely and were used only for the purposes of the study

3. Results

Analysis of the participants' narratives generated three major themes: (1) increased workload and reduced confidence due to limited subject knowledge, (2) self-directed learning and collaboration as adaptive strategies, and (3) uneven access to institutional support and professional development. The findings are presented according to the three research questions.

3.1. Difficulties Encountered by Mathematics Teachers in Teaching ESP

Across the three narratives, participants described teaching ESP as challenging because their formal training and specialization were in Mathematics. They explained that teaching an unfamiliar subject required additional time to study content, locate appropriate references, and prepare lessons. These demands increased their workload and sometimes affected their confidence, particularly when they encountered topics or questions outside their area of expertise.

Participant 1 described the difficulty of preparing lessons when appropriate resources were limited: *"My resources are limited... preparing and teaching unfamiliar content can lead to increased workload and time management challenges."* This account illustrates the additional preparation required when teachers handle unfamiliar content. Locating suitable references and developing adequate understanding of ESP topics added to the time required for lesson preparation.

Participant 2 similarly emphasized the limited time available for preparing lessons: *"We have limited time in preparing our lessons, making it difficult for us to create an enjoyable and effective lesson."* This response indicates that participants had to balance the additional preparation required for ESP with their existing teaching responsibilities.

Participant 3 identified limited subject knowledge and references as another difficulty: *"I lack subject knowledge and references."* The statement reflects the challenge associated with limited formal preparation in ESP and inadequate access to relevant instructional materials. Participant 3 also identified the difference in the medium of instruction between Mathematics and ESP: *"The biggest challenge I encounter is the use of medium of speech because Math is using English while ESP uses Tagalog."*

Although the participant referred to this as the "medium of speech," the experience points to an adjustment in the medium of instruction and classroom communication. Taken together, the participants' accounts indicate that limited subject knowledge, inadequate references, additional preparation time, and differences in classroom language contributed to the challenges of teaching ESP.

3.2. Mathematics Teachers' Strategies for Adapting to ESP Teaching

Despite the challenges associated with teaching outside their specialization, participants actively sought ways to adapt to their ESP assignments. Their narratives revealed the use of independent research, reading supplementary materials, attending seminars and training, consulting colleagues and school leaders, and drawing on personal experiences when preparing lessons.

Participant 1 emphasized the importance of professional development: *"Attending trainings, seminars, and workshops in the subject outside my major... can improve confidence and help prepare effective lessons."* Participant 1 also identified collaboration as an important strategy: *"Collaborating and asking help from your superior or co-teachers teaching the same subject matter."*

Participant 2 described independent learning and the use of supplementary resources: *"I engage myself in reading a variety of texts and articles... I also utilize supplementary materials such as videos and asking opinions from experts."* This response demonstrates the teacher's effort to broaden

subject knowledge by using multiple sources of information.

Similarly, Participant 3 stated: *"I used my personal experiences... more on research to the subject matter."* This suggests that the participant combined personal experiences with independent research when preparing EsP lessons. Across the three narratives, adaptation was therefore characterized by continuing learning, resource seeking, professional consultation, and the use of existing personal and professional knowledge.

3.3. Support and Training Needs of Mathematics Teachers in Teaching EsP

Participants recognized institutional support as an important factor in managing the demands of teaching EsP. They identified seminars, workshops, mentoring, technical assistance, instructional materials, internet access, and technological resources as valuable forms of support. However, their narratives also showed that the availability of these forms of assistance differed among participants.

Participant 1 emphasized the importance of seminars and workshops related to EsP, viewing professional development as an opportunity to strengthen subject knowledge and improve confidence.

Participant 2 described receiving technical assistance from school leaders: *"We are having technical support from our master teacher and head teacher in preparing and delivering meaningful and engaging lessons for our students."* This account illustrates the value of guidance from experienced colleagues and school leaders in helping teachers manage unfamiliar teaching responsibilities.

In contrast, Participant 3 reported limited access to technological resources: *"None, I need internet and laptop for the preparation of the subject matter."* The response highlights the importance of basic technological resources for teachers who need to research unfamiliar content and prepare instructional materials. The contrasting experiences indicate that institutional support was not equally accessible to all participants.

Overall, participants identified professional development, mentoring, technical assistance, instructional materials, internet access, and technological resources as important forms of support for teachers assigned outside their specialization.

4. Discussion

The findings provide insight into the experiences of Mathematics teachers assigned to teach EsP, a subject outside their formal specialization. Across the three research questions, participants described difficulties involving limited subject knowledge, lesson preparation, confidence, instructional resources, and classroom language. At the same time, they demonstrated active efforts to adapt through self-directed learning, consultation, collaboration, and professional development. Their narratives also showed that the availability of institutional support differed across participants.

The first research question examined the difficulties experienced by Mathematics teachers when teaching EsP. Participants particularly emphasized limited subject knowledge, insufficient references, additional preparation time, and reduced confidence.

These experiences are consistent with research on out-of-field teaching. Aventura and Viña (2023) reported that junior high school teachers assigned to nonspecialized subjects encountered challenges associated with unfamiliar content and the need to adjust their teaching practices. Their study also identified self-learning and coping strategies as important responses to these challenges. Melloria et al. (2023) likewise documented difficulties among out-of-field teachers and students in a Philippine secondary school. More recent Philippine research continues to identify concerns involving content mastery and instructional adjustment (Candelario & Abo, 2025).

The present finding is also consistent with international research. O'Meara and Fitzmaurice (2025) found that out-of-field Mathematics teachers may experience concerns related to subject knowledge and confidence. Although their study examined teachers teaching Mathematics outside their specialization rather than Mathematics teachers teaching EsP, the underlying issue is comparable: teachers may have general pedagogical competence while experiencing uncertainty when teaching content for which they have limited formal preparation.

The participants' experiences also reflect the broader issue of teacher-subject mismatch in the Philippines. Mejia et al. (2025) reported that mismatches between teachers'

specialization and teaching assignments can negatively affect instructional quality, teacher confidence, and student engagement. Their policy analysis also emphasized the need for targeted professional development and better teacher-subject matching. The present findings therefore suggest that the difficulties encountered by the participants should not be viewed simply as individual shortcomings but also as part of a broader organizational and teacher-deployment issue.

An additional difficulty identified in this study was the adjustment in classroom language. Participant 3 noted the difference between the use of English in Mathematics and Filipino in EsP. This experience suggests that moving between subject areas may require teachers to adjust not only their content knowledge but also their classroom communication and lesson-delivery practices.

The second research question examined how Mathematics teachers adapted to teaching EsP. Participants reported conducting independent research, reading supplementary materials, using videos and other resources, attending seminars and training, and consulting colleagues and school leaders.

These strategies reflect teachers' active efforts to address gaps in their subject knowledge. Aventura and Viña (2023) similarly documented self-learning and coping strategies among teachers assigned to nonspecialized subjects. De La Cruz and Alda (2024) likewise found that out-of-field English teachers used various practices to cope with gaps in skills, strategies, and content knowledge and highlighted the importance of professional development support.

Collaboration emerged as another important strategy. Participant 1 described seeking help from colleagues and superiors, while Participant 2 reported receiving technical assistance from school leaders. Bajar et al. (2021) similarly emphasized School Learning Action Cell activities as a potential source of professional learning and support for out-of-field teachers.

Recent international research further supports the value of subject-specific professional development. Perl-Nussbaum et al. (2025) argued that professional development for out-of-field teachers can be strengthened by recognizing the knowledge and practices teachers bring from their original fields and helping them integrate these resources into their new teaching contexts. This perspective is relevant to the present study because the participants' Mathematics background did not simply disappear when they began teaching EsP. Instead, they drew on existing knowledge, personal experiences, and established teaching practices while learning new subject content.

The findings therefore suggest that adaptation to out-of-field teaching is an ongoing process. Teachers do not simply receive an assignment and immediately become prepared for the new subject. Rather, they gradually develop their competence through research, experience, consultation, collaboration, and professional learning.

The third research question examined the support and training that Mathematics teachers perceived as necessary to improve their competence and confidence in teaching EsP. Participants identified seminars, workshops, mentoring, technical assistance, instructional materials, internet access, and technological resources as important forms of support.

However, the participants' experiences were not uniform. Participant 2 reported receiving technical assistance from school leaders, while Participant 3 reported a lack of basic technological resources. This difference suggests that teachers' ability to adapt depends not only on individual motivation but also on the resources and support available within their school.

Recent literature emphasizes that professional development for out-of-field teachers should address the specific requirements of the subject being taught. Perl-Nussbaum et al. (2025), for example, argued that professional development should build on teachers' prior knowledge while helping them develop practices appropriate to their new subject area. Similarly, current Philippine evidence emphasizes professional development and work-force planning as important components of addressing specialization gaps (Mejia et al., 2025).

The findings suggest that general professional development may not be enough for Mathematics teachers assigned to EsP. Teachers may benefit more from training focused on EsP content, teaching strategies, assessment practices, curriculum expectations, and available instructional resources. Mentoring from experienced EsP teachers or subject specialists may also provide practical assistance that general training cannot always provide.

The importance of institutional support is further consistent with Philippine studies on

out-of-field teaching. Bajar et al. (2021) highlighted the potential role of collaborative professional learning, while other Philippine studies have emphasized the need for guidance, professional development, and appropriate support for teachers assigned outside their specialization (Candelario & Abo, 2025; De La Cruz & Alda, 2024; Gomez & Petalla, 2025).

Taken together, the findings indicate that the experiences of Mathematics teachers teaching EsP are shaped by three closely related factors: the demands of unfamiliar subject matter, teachers' individual efforts to adapt, and the availability of institutional support.

Participants experienced difficulties because their formal preparation was in Mathematics rather than EsP. These difficulties involved limited subject knowledge, insufficient references, additional lesson preparation, adjustment in classroom language, and reduced confidence. However, participants responded by conducting research, reading supplementary materials, attending professional development activities, and seeking assistance from colleagues and school leaders.

The findings are consistent with literature showing that out-of-field teaching can create challenges involving content knowledge, confidence, workload, and instructional preparation. At the same time, teachers are capable of developing adaptive strategies when they have opportunities for professional learning, collaboration, and access to appropriate resources.

An important finding of this study is that individual resilience alone is not sufficient. Although participants demonstrated initiative in learning EsP, their experiences differed depending on the support and resources available to them. The contrast between Participant 2's access to technical assistance and Participant 3's reported lack of technological resources illustrates why out-of-field teaching should be understood not only as an issue of individual adjustment but also as an organizational and professional-support concern.

The study therefore supports the need for targeted and sustained support for teachers assigned outside their specialization. Such support may include subject-specific training, mentoring by experienced EsP teachers, collaborative lesson planning, access to appropriate instructional materials and technology, and continuing professional learning opportunities.

Overall, this study contributes to the growing literature on out-of-field teaching by focusing specifically on Mathematics teachers assigned to teach EsP in a Philippine public secondary school. The participants' narratives demonstrate that the transition from Mathematics to EsP involves more than learning unfamiliar content. It also requires adjustments in classroom language, instructional approach, professional confidence, and professional identity.

5. Conclusions

This study explored the experiences of Mathematics teachers assigned to teach EsP, a subject outside their formal area of specialization. The findings show that out-of-field teaching is a challenging yet meaningful professional experience that requires teachers to adjust not only to unfamiliar subject content but also to different instructional approaches, classroom expectations, and communication practices.

The experiences of the three participants revealed that teaching EsP required additional preparation because of their limited familiarity with the subject, lack of appropriate references, and limited preparation time. The difference in language and instructional practices between Mathematics and EsP also required adjustment. These challenges sometimes affected participants' confidence, particularly when they encountered unfamiliar topics or questions that they felt less prepared to address.

Despite these difficulties, participants demonstrated initiative and resilience. They engaged in self-directed learning by conducting research, reading supplementary materials, using available resources, and seeking information from other sources. They also attended seminars and training and consulted colleagues and school leaders. These experiences show that teachers assigned outside their specialization actively work to address gaps in their knowledge and improve their teaching practices.

Another important finding was the varying level of institutional support experienced by participants. While some received technical assistance, mentoring, training, and guidance from colleagues and school leaders, another participant reported limited access to technological resources and instructional materials. This finding highlights that teachers' ability to adapt to out-of-field assignments depends not only on personal effort but also on

the support and resources available within their schools.

Overall, the study concludes that Mathematics teachers can adapt to teaching EsP through persistence, continuous learning, and professional collaboration. However, individual effort alone cannot fully address the challenges associated with out-of-field teaching. Schools and educational leaders should provide sustained and subject-specific professional development, mentoring, adequate instructional resources, technological support, and opportunities for collaboration with EsP teachers or subject specialists. Where possible, teacher assignments should also consider teachers' areas of specialization.

Although the study was limited to three Mathematics teachers in one public secondary school, their experiences provide valuable insights into the realities of out-of-field teaching. The findings emphasize the need for responsive support systems that promote teacher competence, confidence, professional growth, and instructional preparedness when teachers are assigned to subjects outside their specialization

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Semi-Structured Interview Guide

Purpose of the Interview

This semi-structured interview guide was developed to understand the experiences of Mathematics teachers who have been assigned to teach EsP, a subject outside their area of specialization. The interview focuses on the challenges they encountered, the ways they adjusted to teaching EsP, the support they received, and the training and resources they perceived as necessary to improve their competence and confidence.

The questions are open-ended to allow participants to describe their experiences in their own words. Follow-up and probing questions may be asked when necessary to clarify responses or encourage participants to provide more detailed descriptions of their experiences. Participation is voluntary, and the information shared during the interview will be treated confidentially and used solely for research purposes.

Part I. Background of the Participant

1. Can you briefly tell me about your teaching background and your area of specialization?

Possible follow-up questions:

What is your area of specialization?

How long have you been teaching Mathematics?

How long have you been teaching EsP?

How did you come to be assigned to teach EsP?

2. Can you tell me how you felt when you first learned that you would be teaching EsP?

Possible follow-up questions:

What were your first thoughts or concerns?

Did you feel prepared for the assignment? Why or why not?

Did your previous teaching experience help you adjust? How?

Part II. Experiences and Challenges in Teaching EsP

3. Can you tell me about the difficulties you have experienced while teaching EsP?

Possible follow-up questions:

Which EsP topics or lessons are difficult for you to teach?

What do you do when you encounter an unfamiliar topic?

Do you have difficulty understanding or explaining some EsP concepts?

How do you respond when students ask questions that are difficult for you to answer?

Does teaching EsP require more time for lesson preparation?

Do you experience difficulties in preparing learning materials?

Do you find assessing students in EsP challenging? Why?

What differences between Mathematics and EsP do you find difficult to adjust to?

4. How is teaching EsP different from teaching Mathematics in terms of preparation, teaching, and assessment?

Possible follow-up questions:

Which subject requires more preparation for you? Why?

How are the teaching approaches different?

Is there a difference in the language or medium of instruction used in the two subjects?

How does this difference affect your classroom interaction and lesson delivery?

5. How has teaching EsP affected your confidence as a teacher?

Possible follow-up questions:

Are there situations when you feel less confident teaching EsP?

What situations make you feel more confident?

What do you do when you are unsure about a topic?

Has your confidence changed since you started teaching EsP? How?

Part III. Ways of Adjusting and Coping

6. Can you tell me how you adjusted when you first started teaching EsP?

Possible follow-up questions:

What did you do when you first received the assignment?

How have your teaching practices changed over time?

What changes have you made in preparing your lessons?

How do you prepare yourself before teaching an unfamiliar topic?

7. What do you do to improve your knowledge and skills in teaching EsP?

Possible follow-up questions:

Do you search for additional information about EsP topics?

What books, modules, websites, videos, or other materials do you use?

Do you attend seminars, workshops, or training related to EsP?

Do you seek help from other teachers or EsP specialists?

How do you use technology when preparing your lessons?

Which of these strategies helps you the most? Why?

8. Can you share an experience when you were able to handle a difficult EsP lesson or classroom situation successfully?

Possible follow-up questions:

What made the lesson or situation difficult?

What did you do to handle the situation?

Who or what helped you?

What did you learn from the experience?

Did the experience change the way you teach EsP?

9. In what ways has teaching EsP contributed to your growth as a teacher?

Possible follow-up questions:

Have you developed skills that you did not often use when teaching Mathematics?

Has teaching EsP changed the way you view teaching and learning?

Has the experience affected your confidence as a teacher?

What positive experiences have you gained from teaching EsP?

Part IV. School Support and Professional Development

10. What kind of support have you received from your school while teaching EsP?

Possible follow-up questions:

Have your school leaders provided technical assistance?

Have master teachers or EsP teachers helped you?

Were you provided with learning materials or other references?

Have you been given opportunities to attend training, seminars, or workshops?

Do your co-teachers assist you when you need help?

How helpful has this support been to you?

11. How would you describe the support and resources available to you when preparing and teaching EsP?

Possible follow-up questions:

What kind of support is easy for you to access?

What kind of support is difficult to obtain?

Do you have access to the internet, computers, or other technological resources?

Are sufficient EsP learning materials and references available?

How does having or not having these resources affect your teaching?

12. What kind of support or training would help you become more confident and effective in teaching EsP?

Possible follow-up questions:

What type of training would be most helpful to you?

Would you prefer training focused on EsP content, teaching strategies, or both?

Would mentoring from an EsP teacher or subject specialist be helpful? Why?

What learning materials or references do you need?

What technology or equipment would help you prepare your lessons?

How often do you think training or professional development should be provided?

Part V. Reflection and Suggestions

13. Looking back on your experience of teaching EsP, what have you learned about yourself as a teacher?

14. What advice would you give to other Mathematics teachers who may be assigned to teach EsP or another subject outside their specialization?

15. What can schools or the Department of Education do to better support teachers who are assigned outside their area of specialization?

16. Is there anything else about your experience as a Mathematics teacher teaching EsP that you would like to share?

Closing Statement

Thank you for taking the time to participate in this interview and for openly sharing your experiences. Your responses are valuable to this study and will help provide a deeper understanding of the experiences of Mathematics teachers assigned to teach EsP. All information shared during the interview will be treated confidentially and will be used only for academic and research purposes.

End of Interview.

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