

Out-of-Field Teaching

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High-quality education remains a fundamental goal of educational systems worldwide (Saini et al., 2023; Karatsiori, 2023), and its achievement depends largely on the quality and competence of teachers (Pčolinská, 2018). Teachers play a crucial role in addressing educational challenges and facilitating effective learning experiences for students (Dursun & Aykan, 2025; Kostiainen & Pöysä-Tarhonen, 2025; Levy-Feldman, 2025). Research consistently identifies teacher quality as one of the most influential factors affecting student achievement, emphasizing the importance of knowledgeable and effective educators in promoting positive learning outcomes (Teig & Nilsen, 2022; Li & Ma, 2025; Engida et al., 2024). As primary facilitators of learning, teachers are expected to provide accurate guidance, meaningful instruction, and the knowledge and skills necessary for students' future academic and career success.

Recognizing the importance of teacher quality, the Philippine educational system has established policies aimed at ensuring access to competent instruction. Batas Pambansa Blg. 232, or the Education Act of 1982, upholds students' right to quality education and qualified teachers. Similarly, educational policies emphasize the need for teachers to possess appropriate academic qualifications and subject-matter competence to support

effective teaching and learning. These standards reflect the belief that teacher expertise is essential for maintaining educational quality and improving student outcomes.

Despite the policy initiatives, challenges remain in ensuring that teachers are assigned to subjects aligned with their areas of specialization. One persistent concern is out-of-field teaching, a practice in which teachers are assigned to teach subjects outside their academic preparation and professional expertise (Nakar & du Plessis, 2023; Beutin et al., 2025; du Plessis et al., 2014). This situation is common in the Philippines and may limit teachers' mastery of the content they are expected to teach, potentially affecting instructional quality and student learning (Bayani & Guhao, 2018). Out-of-field assignments are often influenced by administrative decisions and staffing shortages, particularly in subject areas where qualified teachers are limited. This reality highlights the continuing challenge of balancing teacher deployment needs with the goal of providing students with instruction from adequately prepared subject specialists.

Out-of-Field Teaching

Out-of-field teaching significantly influences teachers' classroom practices and overall effectiveness in delivering quality education (Vo & Ho, 2026; du Plessis, 2015). When teachers are assigned to subjects beyond their area of specialization, they often encounter difficulties in mastering the content, selecting appropriate instructional strategies, and addressing students' learning needs. These challenges may limit their ability to provide meaningful learning experiences and can adversely affect both teacher performance and student achievement. Badaru and Ndlovu (2025) emphasized that out-of-field teaching has substantial implications for classroom management, behavior management, and pedagogical content knowledge. Teachers who lack

adequate subject-matter expertise may struggle to explain complex concepts, respond confidently to students' questions, and design effective assessments, which can undermine classroom engagement and learning outcomes.

The demands of teaching unfamiliar subjects often require teachers to devote additional time and effort to lesson preparation, content review, and resource development (Rebolledo et al., 2025). This increased workload may contribute to stress, anxiety, and professional burnout, particularly when teachers receive limited institutional support. The challenge extends beyond content mastery, as effective teaching requires the integration of subject knowledge with appropriate pedagogical approaches. Without sufficient preparation, teachers may rely heavily on textbooks or traditional teaching methods, reducing opportunities for innovative and learner-centered instruction.

The difficulties associated with out-of-field teaching are further intensified by inadequate professional development opportunities. According to Rivas (2025), many teachers perceived existing training programs as insufficient because they were often short-term, generic, and disconnected from the specific demands of the subjects they were required to teach. As a result, such professional development initiatives failed to address the gaps in teachers' content knowledge and instructional competencies. Teachers therefore expressed a strong need for sustained, subject-specific, and practice-oriented professional development programs that would enable them to build both content expertise and pedagogical confidence.

Moreover, the lack of targeted professional support may hinder teachers' professional identity and self-efficacy. Teachers who consistently teach outside their specialization may feel less competent and less prepared compared to their colleagues who teach within their field of expertise (Hobbs et al., 2026; Tran, 2023; Hobbs & Porsch, 2021). This can affect their

motivation, job satisfaction, and willingness to remain in the profession. Consequently, educational institutions must recognize that assigning teachers outside their specialization should be accompanied by comprehensive support systems, including mentoring, collaborative learning opportunities, access to instructional resources, and continuous professional development. Such interventions can help mitigate the negative effects of out-of-field teaching and enhance teachers' capacity to deliver effective instruction despite the challenges associated with their assignments.

Challenges Encountered by Non-Specialized Teachers

Common difficulties of out-of-field teaching include limited subject-matter knowledge, challenges in engaging students, and experiences of self-doubt or imposter syndrome (Rebolledo et al., 2025). These challenges may influence teacher retention and perceptions of professional competence, particularly in contexts where access to support and resources is limited (Hobbs et al., 2026; Hobbs & Porsch, 2021), such as rural schools.

Research in the Philippine context reflects similar concerns. Pacaña et al. (2019) found that non-social studies teachers experienced difficulties teaching the subject because of its broad content coverage and their limited disciplinary knowledge. These challenges often resulted in feelings of incompetence, low self-esteem, and uncertainty regarding instructional effectiveness. Likewise, Attia (2017) reported that inadequate subject expertise can hinder lesson preparation, reduce instructional confidence, and make it more difficult for teachers to deliver content effectively. Although these difficulties may initially constrain performance, they can also motivate teachers to acquire new knowledge and develop competencies necessary for their assigned roles.



One of the most critical concerns associated with out-of-field teaching is unfamiliarity with the subject matter. Teachers with limited content knowledge may struggle to explain concepts accurately, answer students' questions effectively, and address misconceptions that arise during instruction. Fikni et al. (2023) emphasized that insufficient or inaccurate subject knowledge may contribute to the transmission of incorrect information and the use of ineffective teaching practices. Subject mastery ensures instructional quality and strengthens the competence and confidence of out-of-field teachers.

Instructional and Pedagogical Challenges

Teachers assigned to subjects outside their area of specialization often encounter difficulties in selecting and implementing appropriate instructional strategies. Limited subject-matter knowledge can make it challenging to identify teaching approaches that effectively align with curriculum goals and learning objectives. Instructional strategies are essential tools that help teachers facilitate learning and achieve desired educational outcomes (Özdoğru, 2022; Ruiz-Martín et al., 2026; Zhang et al., 2024). When teachers are unfamiliar with the content they teach, their ability to design meaningful learning experiences and respond effectively to students' needs may be constrained.

According to Mizzi (2013), effective teaching requires not only content knowledge but also the ability to adapt to new information and evolving instructional demands. Consequently, teachers handling out-of-field subjects may struggle to adjust their teaching practices. However, it can also create valuable opportunities for professional growth and self-discovery. Teaching outside one's specialization encourages educators to broaden their knowledge base, acquire new competencies, and move beyond their comfort

zones. Through this process, teachers may develop greater resilience, flexibility, and adaptability, qualities that are essential for effective teaching in dynamic educational environments. Such experiences can transform professional challenges into opportunities for learning and career development.

Coping Mechanisms and Support Systems

Teachers employ a variety of coping mechanisms to manage the challenges associated with teaching subjects outside their area of specialization. These coping strategies involve both emotional and professional adjustments that enable teachers to adapt to unfamiliar content, strengthen their instructional practices, and fulfill their responsibilities more effectively. Through continuous learning, self-directed preparation, and the development of adaptive teaching approaches, teachers strive to overcome the difficulties associated with out-of-field teaching.

Research highlights the importance of institutional support in enhancing teachers' ability to cope with these challenges. Ingersoll (2001) identified mentoring programs, access to instructional resources, and ongoing professional development as key support mechanisms that contribute to teacher effectiveness in out-of-field assignments. These forms of support provide opportunities for teachers to strengthen their subject-matter knowledge, refine pedagogical practices, and gain confidence in delivering instruction. Effective professional development programs, in particular, help teachers acquire the competencies needed to teach unfamiliar subjects more successfully. According to Shah et al. (2019), all teachers, regardless of specialization, should be supported through targeted professional development and mentoring initiatives. By strengthening teachers' capacity to cope with out-of-field challenges, these support systems not only improve teaching

quality but also contribute to better student learning outcomes and sustained professional growth.

RESEARCH FOCUS: Lived Experiences of Junior High School Out-of-Field Teachers

This study explored the lived experiences of Junior High School teachers teaching subjects outside their specialization. The study employed a qualitative research design using narrative inquiry, which focuses on understanding how individuals construct meaning from their experiences through the stories they tell. Through participants' narratives, the study aimed to capture the personal, professional, and instructional realities associated with teaching beyond one's specialization.

The study was conducted in a public secondary school in the District of Tangalan in the Philippines during the School Year 2023–2024. Eight junior high school teachers were purposively selected based on specific criteria, including having at least two years of teaching experience and experience teaching subjects outside their area of specialization. Data were collected using a validated interview guide composed of open-ended questions that encouraged participants to freely describe their experiences. Ethical standards were strictly observed throughout the research process, including obtaining the necessary permissions, securing informed consent, and ensuring participant confidentiality. Data collection was conducted through a focus group discussion, with all responses recorded and transcribed for analysis.

The transcribed data were analyzed using Colaizzi's method of qualitative analysis. This process involved repeatedly reviewing the transcripts, extracting significant statements, formulating meanings, and organizing these meanings into thematic categories. Through this systematic approach, the researcher identified recurring patterns and developed a

comprehensive description of the phenomenon under investigation. To further enhance the credibility and trustworthiness of the findings, participant validation was conducted to ensure that the interpretations accurately reflected the teachers' lived experiences.

Feeling Inadequate

Most teachers felt a sense of inadequacy when teaching subjects beyond their specialization. They described feeling uncomfortable and lacking confidence due to their limited knowledge of and exposure to the subject content. Anathalia expressed, *“I may not have enough knowledge about the subject which can impact my lesson preparation and pedagogical content knowledge which I admit that I have limited knowledge about the subject matter. I may not feel comfortable teaching the subject which can lead to low comfort level and limited preparation time. I consider these challenges as barrier for struggling teacher like me teaching certain subjects beyond my specialization. Despite these difficulties, I have developed and tried my best to overcome these things.”* A similar experience was narrated by Althea, *“Although I have some background knowledge about the topic, I need to study because there is some unfamiliar content. Aside from learning new content, I must possess profound knowledge of the teaching strategies on how to effectively deliver the daily lessons. There are also moments when I feel inadequate and stressed while working with students because teaching topics outside my scope of knowledge could affect not just my confidence but the quality of their learning.”*

A similar experience was felt by Ghella, *“At first, I was in doubt of myself regarding teaching subjects outside the area of my specialization. ... I feel ineffective and inefficient especially in lesson delivery because of insufficient exposure to the subject.”* A similar experience with Ghella was

also experienced by Lina, *“I have definitely encountered challenges while trying to explain the lesson to my students which I don’t have a background in my area of expertise. I am not confident if I can deliver my lesson well.”*

Another experience in feeling inadequacy focused on the language is expressed by Millesse, *“One thing I find difficult in teaching non-major subjects is the language used which is Filipino is quite a challenge for me and I would experience stuttering and running out of words to say. I am not sure if I am pronouncing the words correctly or I am using the exact or the proper words.”*

According to Co et al. (2021), teachers are less confident teaching subjects outside their specialization. They felt inadequate and lack the confidence in teaching the topics outside their expertise.

Extra Effort for Subject Preparation

In addition to teachers' feelings of inadequacy, another challenge experienced by most teachers teaching beyond their specialization is the need to exert extra effort in preparation. Teachers expressed that they must invest more time and effort, often working day and night, to prepare for unfamiliar concepts in subjects that are outside their area of specialization. Althea expressed, *“Teaching a subject outside my specialization is quite challenging; hence I need a lot of preparation. Although I have some background knowledge about the topic, I need to study because there is some unfamiliar content.”* A similar experience was experienced by Millesse, Lina, Jaybert, and Gab.

“During my first year of teaching subjects that are not my major, I really had a hard time. I would always do advanced research; I would sleep late at night to study my lessons.” (Millesse)

“I also need to research day and night for the topic I’m not familiar with so that I can assure that I teach the right lesson at the same time they can also gain knowledge from me.” (Lina)

“I need to study the content of the topic before I will go to the class though it is a must for us teachers to study our lesson in advance, it takes another effort for us non-specialized teacher to study the lesson to master the content of the lesson of the day.” (Jaybert)

“When I teach outside my area of specialization, I need to put in extra preparation and effort to get acquainted with the curriculum and content.” (Gab)

Some teachers experienced difficulty and had to exert greater effort and spend more time preparing lessons for subjects beyond their specialization. This situation consumes additional time and requires more energy and effort from teachers. This finding is similar to the study of Perez (2024), which revealed the increased burden placed on teachers.

Adjusting to New Teaching Strategies

Choosing and adapting to new teaching strategies is another experience encountered by teachers teaching beyond their specialization, in addition to feelings of inadequacy and the need to exert greater effort in lesson preparation. For instance, Jaybert said, *“One of the major challenges that I have encountered as non-major subject-teacher is the difficulty of choosing teaching strategies that suit to the subject matter and the difficulty of mastery of content of the subject/ topic. I have understood that teaching pedagogies took an important element in teaching the content standard of the subject. It has its unique feature that best suits or applicable where specialized teachers have only understood.”* Ghella also expressed, *“The selection of activities to*

be included in the instruction should also be considered in order the students/learners to be able to understand the concepts and lessons presented.”

Gab also expressed his difficulty adjusting to new approach of teaching subjects outside his specialization:

“I have faced challenges when teaching subjects that are not my specialization. One significant challenge is adjusting my teaching strategies. For instance, teaching Araling Panlipunan often requires different approaches than the hands-on, practical methods I typically use. It calls for tailored strategies that are distinct from my usual teaching style. Additionally, engaging students can sometimes be quite difficult. When I teach outside my area of specialization, I need to put in extra preparation and effort to get acquainted with the curriculum and content.”

While teachers encountered various challenges, they also gained valuable opportunities from teaching subjects outside their specialization. One of these opportunities was learning new knowledge and skills beyond their field of expertise. Some teachers chose to look at the positive side of the experience, viewing it as an opportunity to broaden their knowledge and deepen their understanding of concepts and lessons outside their area of specialization. For instance, Millesse, Lina and Jaybert expressed:

“Teaching non-major subjects is quite fun! I got to go out of my comfort zone and experienced something that I am not used of doing. What I learned from my experiences is that I was able to explore my other skill that is teaching subjects outside of my specialization. I consider this as a wonderful opportunity for me to explore other areas, teach and learn unfamiliar topics and have fun at the same time. The only thing which motivates me to teach non-major subjects is that I just look at the brighter side. Maybe there’s a reason why the subjects are given to me.” (Millesse)



“Teaching outside my specialization is really challenging but through exploration and exposure to some other things we can also gain knowledge and new strategies which we can apply in our daily teaching like utilizing technology, collaborate with others and know how to reflect and adapt to meet the needs of our students.” (Lina)

“It also helped me professionally to widen my understanding and knowledge to the topic or lesson. I haven’t known yet. It gives me ample opportunities to understand the concept of one thing far from my expertise with the result. It makes me equipped in other fields far from my specialization. Moreover, the significant impact with the challenges in my teaching career is the discovery of other teaching mechanism that is far from the usual technique I knew. This gives me chance to apply this discovery to use these techniques in my field of specialization.” (Jaybert)

Learning by Collaborating

Learning to seek help through collaboration with more knowledgeable teachers in the field is another perceived opportunity gained by teachers teaching beyond their specialization, aside from learning new things and becoming more flexible. Through collaboration, teachers are able to acquire subject-specific knowledge, improve their teaching practices, and receive guidance from colleagues with greater expertise in the subject area. Millesse, Gab, and Jaybert mentioned:

“I’ve learned to ask help from my colleagues who are experts on teaching those subjects. It really helped me a lot.” (Millesse)

“Teaching subjects beyond my area of expertise has helped me ... understand the value of collaboration.” (Gab)

“I have learned that learning takes place when we prepare not only ourselves as a teacher, but also the strategies we will use in teaching our

lesson with the collaboration, and constant communication to the specialized teacher, it underscored a significant impact to achieve the objectives of the lesson.” (Jaybert)

Teachers sought help from their colleagues as a coping mechanism for the challenges they encountered while teaching subjects beyond their specialization. Ghella and Millesse shared:

“It is important to surround yourself of people values your existence and who believes in your ability. Sometimes if things get out of hand or out of control, I seek the advice of my co-teacher and feel better afterwards knowing that mistakes will just be a way to improve myself. From time to time, I ask my coworker suggestions, recommendations and anything that would help for my personal growth and more specially in my work.” (Ghella)

“In overcoming the difficulties I am facing; what I did is I am asking help from my colleagues. They are sharing with me some tips, strategies and techniques which helped me in teaching the in-major subjects I am handling. Jaybert: The coping mechanism I have used to adopt to the new environment is by frequent consultation and communication to the specialized teacher. With shared experiences they have told me, and the possible teaching mechanism I have to attack to attain the objectives of the lesson, it lightens my worries and concerns to the things I am struggling of.” (Millesse)

Self-Regulation and Positive Outlook

Being able to self-regulate and maintain a positive outlook were also coping mechanisms employed by the teacher-participants, alongside seeking help from colleagues and preparing in advance when teaching subjects beyond their specialization. For instance, they mentioned:

“I prioritized effective time management, stayed flexible in my teaching methods, and viewed obstacles as opportunities for both personal and professional growth.” (Gab)

“Be positive and I told myself that I could carry all these things all by myself. Cultivate gratitude in my everyday life and through acceptance will lead me to work harder. As a teacher we need to be well-rounded individual because we are still learning on it. Keep track of how things what went well and what went wrong. I always think what I could share for the benefit of the learners.” (Anathalia)

“Whenever I faced difficulties in both personal and in my teaching profession, I always ask the guidance of our Almighty to overcome those. Ever since my teenage years, I have this attitude that even things get difficult or having difficulty to do something, I don’t say “I give up.” Yes, this has been a great help for me to cope the challenges in my teaching journey and everyday life. I always tell myself that “I can do this”, “You can do it” and that I am capable. Always believe that God is always got your back if ever you failed, despite feeling that you have given all your best, don’t expect too much in everything that we do, because expectation might limit the opportunities that will come along the way. ... I keep my mind in focus of what is my true mission and that is to impart the students learn the knowledge and skills “that they need. For the welfare of our students we fought through hardships.” (Ghella)

“Acceptance is the key. I always think positive and enjoy teaching while learning at the same time. ... Continuous learning and a willingness to adapt are crucial for success in any teaching role.” (Lina)

Teachers employed self-regulation techniques by practicing positive self-affirmations, strengthening their faith in God, and maintaining a positive outlook. In addition to learning new things, teachers became more flexible and adaptable in addressing the needs of their learners while teaching subjects

beyond their specialization. Ghella mentioned, *“Teaching subjects outside your specialization tests your flexibility and capability as a teacher. The adaptability from the changes and nature of our work is evident/ shows our passion in teaching.”* Millesse and Gab also said:

“Teaching non-major subjects made me realize that as a teacher, we need to be flexible. The most important thing is I am enjoying and learning at the same time from this experience.” (Millesse)

“It is a wonderful and humble experience to teach outside of your area of expertise. It strengthened my conviction about the values of flexibility and lifelong learning.” (Gab)

Conclusion

Teachers teaching beyond their specialization experience a complex interplay of challenges and opportunities. While they face inadequacy, increased workload, and pedagogical difficulties, they demonstrate resilience through preparation, collaboration, and positive self-regulation. At the same time, these experiences foster professional growth, adaptability, and lifelong learning. However, the reliance on individual coping mechanisms highlights systemic gaps in training, resource provision, and teacher support. Addressing these gaps is essential to improve both teacher well-being and instructional quality.



Bibliography

- Attia, N. (2017). *Teachers' perception on the relationship between subject-specialized teaching and students' achievement in elementary classrooms* (Master's thesis, University of Toronto). University of Toronto TSpace Repository. <http://hdl.handle.net/1807/76925>
- Badaru, K. A., & Ndlovu, N. S. (2025). Understanding the out-of-field teaching experiences: A review of selected national contexts. *Interdisciplinary Journal of Education Research*, 7(2), Article a04. <https://doi.org/10.38140/ijer-2025.vol7.2.04>
- Bayani, R. T., & Guhao, J. E. S. (2018). Out-of-field teaching: Experiences of non-Filipino majors. *International Journal of Education, Development, Society and Technology*, 5(11), 91–127. <https://doi.org/10.5281/zenodo.1423235>
- Beutin, J., Arndt, M., & Blumenthal, S. (2025). Out-of-field teaching in craft education as a part of early STEM: The situation at German elementary schools. *Education Sciences*, 15(7), Article 926. <https://doi.org/10.3390/educsci15070926>
- Co, A. G. E., Abella, C. R. G., & De Jesus, F. S. (2021). Teaching outside specialization from the perspective of science teachers. *Open Access Library Journal*, 8, 1–13. <https://doi.org/10.4236/oalib.1107725>
- du Plessis, A. E. (2015). Effective education: Conceptualising the meaning of out-of-field teaching practices for teachers, teacher quality and school leaders. *International Journal of Educational Research*, 72, 89–102. <https://doi.org/10.1016/j.ijer.2015.05.005>
- du Plessis, A. E., Gillies, R. M., & Carroll, A. (2014). Out-of-field teaching and professional development: A transnational investigation across Australia and South Africa. *International Journal of Educational Research*, 66, 90–102. <https://doi.org/10.1016/j.ijer.2014.03.002>
- Dursun, F., & Aykan, A. (2025). Exploring teachers' narratives: Challenges and strategies for enhancing the teaching process. *SAGE Open*, 15(1). <https://doi.org/10.1177/21582440251332557>
- Engida, M. A., Iyasu, A. S., & Fentie, Y. M. (2024). Impact of teaching quality on student achievement: Student evidence. *Frontiers in Education*, 9, Article 1367317. <https://doi.org/10.3389/feduc.2024.1367317>
- Fikni, Z., Maysuroh, S., & Soleh, M. A. (2023). The relationship between inadequate teaching method and students' English learning difficulties. *Humanitatis: Journal of Language and Literature*, 10(1), 195–206. <https://doi.org/10.30812/humanitatis.v10i1.3312>
- Hobbs, L., & Porsch, R. (2021). Teaching out-of-field: Challenges for teacher education. *European Journal of Teacher Education*, 44(5), 601–610. <https://doi.org/10.1080/02619768.2021.1985280>

- Hobbs, L., Carpendale, J., McKnight, L., Caldis, S., Vale, C., Delaney, S., & Campbell, C. (2026). A framework of subject-specific expertise for out-of-field teachers: Translated for science and English. *Teaching and Teacher Education*, 169, Article 105262. <https://doi.org/10.1016/j.tate.2025.105262>
- Ingersoll, R. M. (2001). Rejoinder: Misunderstanding the problem of out-of-field teaching. *Educational Researcher*, 30(1), 21–22. <https://doi.org/10.3102/0013189X030001021>
- Karatsiori, M. (2023). In the pursuit of “Quality Education”: From ancient times to the digital era, can there be a consensus? *Cogent Education*, 10(2), Article 2286817. <https://doi.org/10.1080/2331186X.2023.2286817>
- Kostiainen, E., & Pöysä-Tarhonen, J. (2025). Meaningful learning over the course of teacher education: Students' reflections. *Teaching and Teacher Education*, 168, Article 105241. <https://doi.org/10.1016/j.tate.2025.105241>
- Levy-Feldman, I. (2025). The role of assessment in improving education and promoting educational equity. *Education Sciences*, 15(2), Article 224. <https://doi.org/10.3390/educsci15020224>
- Li, G., & Ma, Y. (2025). Exploring the influencing factors of teacher beliefs and their impact on teacher behaviors. *BMC Psychology*, 13(1), Article 993. <https://doi.org/10.1186/s40359-025-03095-z>
- Engida, M. A., Iyasu, A. S., & Fentie, Y. M. (2024). Impact of teaching quality on student achievement: Student evidence. *Frontiers in Education*, 9, Article 1367317. <https://doi.org/10.3389/feduc.2024.1367317>
- Mizzi, D. (2013). The challenges faced by science teachers when teaching outside their specific science specialism. *Acta Didactica Napocensia*, 6(4), 1–6.
- Nakar, S., & du Plessis, A. E. (2023). Facing the dilemma of the out-of-field teaching phenomenon in vocational education and training (VET). *Vocations and Learning*, 16(3), 551–575. <https://doi.org/10.1007/s12186-023-09329-8>
- Özdoğru, A. A. (2022). Revisiting effective instructional strategies for twenty-first-century learners. In Y. Alpaydın & C. Demirli (Eds.), *Educational theory in the 21st century* (Maarif Global Education Series, pp. 167–190). Palgrave Macmillan. https://doi.org/10.1007/978-981-16-9640-4_8
- Pacaña, N. M. S., Ramos, C. D., Catarata, M. N., & Inocian, R. B. (2019). Out-of-field social studies teaching through sustainable culture-based pedagogy: A Filipino perspective. *International Journal of Education and Practice*, 7(3), 230–241. <https://doi.org/10.18488/journal.61.2019.73.230.241>

- Pčolinská, L. (2018). Teachers' competences as a key factor of quality education. In *Wyzwania społeczne i gospodarcze współczesnego świata* (pp. 157–168). Państwowa Wyższa Szkoła Zawodowa im. Jana Grodka w Sanoku. <https://doi.org/10.5281/zenodo.18882631>
- Perez, M. P. (2024). A tale of experience: Teaching non-specialized subjects. *ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)*, 2(6), 198–207. <https://doi.org/10.5281/zenodo.14493891>
- Rebolledo, J. D., Calimag, R. C., Francisco, R. S., & Arias, S. T. (2025). Bridging knowledge gaps in out-of-field teaching: A qualitative exploration of teacher challenges, instructional strategies, and institutional support. *Diversitas Journal*, 10(2). <https://doi.org/10.48017/dj.v10i2.3372>
- Rivas, M. C. P. (2025). Exploring the challenges encountered by non-special education teachers in effectively instructing students with special needs in regular classroom setting. *International Journal of Social Science and Human Research*, 8(5), 3887–3930. <https://doi.org/10.47191/ijsshr/v8-i5-119>
- Ruiz-Martín, H., Vadillo, M. Á., & Ferrero, M. (2026). Teaching secondary school students how to learn: Effects of a learning strategies intervention on students' achievement. *Acta Psychologica*, 262, Article 106143. <https://doi.org/10.1016/j.actpsy.2025.106143>
- Saini, M., Sengupta, E., Singh, M., Singh, H., & Singh, J. (2023). Sustainable Development Goal for quality education (SDG 4): A study on SDG 4 to extract the pattern of association among the indicators of SDG 4 employing a genetic algorithm. *Education and Information Technologies*, 28(2), 2031–2069. <https://doi.org/10.1007/s10639-022-11265-4>
- Shah, L., Jannuzzo, C., Hassan, T., Gadidov, B., Ray, H. E., & Rushton, G. T. (2019). Diagnosing the current state of out-of-field teaching in high school science and mathematics. *PLOS ONE*, 14(9), Article e0223186. <https://doi.org/10.1371/journal.pone.0223186>
- Teig, N., & Nilsen, T. (2022). Profiles of instructional quality in primary and secondary education: Patterns, predictors, and relations to student achievement and motivation in science. *Studies in Educational Evaluation*, 74, Article 101170. <https://doi.org/10.1016/j.stueduc.2022.101170>
- Teig, N., & Nilsen, T. (2022). Profiles of instructional quality in primary and secondary education: Patterns, predictors, and relations to student achievement and motivation in science. *Studies in Educational Evaluation*, 74, Article 101170. <https://doi.org/10.1016/j.stueduc.2022.101170>

- Tran, H. L. (2023). Teaching outside area of expertise: A barrier to or enabler of teachers' sense of competence? *VNU Journal of Foreign Studies*, 39(6), 86–99. <https://doi.org/10.63023/2525-2445/jfs.ulis.5162>
- Vo, H., & Ho, H. (2026). Exploring out-of-field teachers' wellbeing profiles: The impacts of school working conditions and classroom processes. *Current Psychology*, 45, Article 235. <https://doi.org/10.1007/s12144-025-08513-4>
- Zhang, H., Yang, J., & Liu, Z. (2024). Effect of teachers' teaching strategies on students' learning engagement: Moderated mediation model. *Frontiers in Psychology*, 15, Article 1475048. <https://doi.org/10.3389/fpsyg.2024.1475048>