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Assessing Pre-Service Teachers' Level of Technical-Vocational and Pedagogical Competencies in Southern Philippines

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Abstract

Pre-service teaching is a fundamental component of teacher preparation, providing future educators with hands-on experience in the classroom, where they can apply theoretical knowledge in real-world settings. This phase is essential in shaping teachers who will contribute to societal progress by educating future generations. However, despite its importance, there are challenges in consistently assessing the competencies of pre-service teachers, especially within technical-vocational and pedagogical education, where standards can vary. Addressing these gaps in assessment is crucial for developing a skilled teaching workforce, which is why this study aims to evaluate the technical-vocational and pedagogical competencies of fifty (50) BTVTED pre-service teachers selected using the total population sampling technique in Southern Philippines. A validated 5-point Likert scale survey questionnaire comprised of 42 items specifically designed to assess pre-service teachers' technical-vocational and pedagogical competencies were utilized in the data collection of the study. This study employed descriptive research design and statistical tools like mean and standard deviation to analyze and interpret the data gathered. The study's findings revealed that the grand mean of the pre-service teachers' technical-vocational and pedagogical competencies (M=4.47, SD=0.86) is classified as "Competent". The highest ratings were observed in the "Diversity of Learners" (M=4.63, SD=0.61), "Learning Environment" (M=4.59, SD=0.62), "Curriculum and Planning" (M=4.59, SD=0.67), "Community Linkages and Professional Engagement" (M=4.52, SD=0.65), and "Technical and Vocational Knowledge and Pedagogy" (M=4.32, SD=0.81) which are classified as "Highly Competent". The lowest ratings were observed in the "Assessment and Reporting" (M=4.33, SD=0.84) and "Personal Growth and Professional Development" (M=4.34, SD=0.86) which are classified as "Competent" only. In conclusion, while the pre-service teachers still perceive themselves as competent in some areas, there is some indication that they feel less equipped to apply various assessment methods and engage in ongoing self-improvement consistently. Recommendations to enhance pre-service teachers' least mastered competencies and for future research are included in this study.

Keywords: Assessment, Pre-service Teachers, Technical-Vocational Competencies, Pedagogical Competencies

INTRODUCTION

A crucial part of teacher preparation that is fundamental to teachers' professional development is known as pre-service teaching (Rudio, Carreon, & Ocampo, 2020). It is an essential component of any teacher education program because it provides pre-service teachers with a solid opportunity to put the ideas they have learned into practice in a real classroom (Ulla, 2016). In the future, pre-service teachers will become full-fledged teachers who are engines for societal advancement. With their concourse, the nation may create and nurture learners who might guide the nation to development and advancement. Therefore, for long-term and sustainable country building, it is crucial to improve or sustain teachers' competitiveness and keep high teaching standards (Gepila, 2020).

Evaluating pre-service teachers' proficiency is an essential component of their development. There are various teaching competence frameworks utilized and developed globally to define teacher quality, support teacher growth, and teachers' career development (Snoek & Dengerink, 2019). These frameworks provide an all-encompassing approach, guaranteeing that teachers possess the necessary abilities and are flexible enough to adjust to altering educational trends and a variety of classroom settings. According to Pérez & Montoya, 2022, the utilization of integral educational framework models facilitates the observation and assessment of the competencies necessary in each field from several perspectives, such as technological, pedagogical, contextual, and humanistic elements. Additionally, teacher competence evaluations grounded on these frameworks can direct professional development, support, and training programs for teachers, enhancing educational systems around the globe.

In the Philippines, a revision of the National Competency-Based Teacher Standards (NCBTS) (D.O. No.32, 2009) called Philippine Professional Standards for Teachers (PPST) is used to assess teachers' competence. It was created as a framework for assessing teacher quality (D.O. No. 42, 2017). The adoption and implementation of the new Philippine Professional Standards for Teachers acknowledge the significance of professional standards in the continuing professional development and advancement of teachers based on the principle of lifelong learning which refers to the systematic acquisition, and upgrade of knowledge, skills, and attitude, and promotes self-directed learning (Gepila, 2020). Additionally, in an effort to supply graduates with relevant training in the field, the Philippine Professional Standards for Teachers (PPST) is focused on offering pertinent assistance for tertiary educators in providing quality academic training to every pre-service teacher (Almasa, 2020).

For the Technical-Vocational courses, the Commission on Higher Education (CHED) developed a new curriculum in 2017 designated as CMO No. 78, for the Bachelor of Technology and Livelihood Education (BTLED) program and CMO No. 79, for the Bachelor of Technical-Vocational Teacher Education (CHED, 2017). The Policies, Standards, and Guidelines are based on key components of the K to 12 Enhanced Basic Education Curriculum (RA 10533), the Philippine Qualifications Framework (EO 83, series of 2012), the National Competency-Based Teacher Standards (NCBTS), now known as the Philippine Professional Standards for Teachers, as well as other important documents. According to the Commission on Higher Education's Memorandum Order (CMO) 79, series 2017, faculty members in the Department of Bachelor in Technical-Vocational Teacher Education (BTVTED) must possess the training and expertise necessary to instruct technical and vocational courses (Tamayo, 2023). In turn, graduates of the program should become proficient educators who can effectively promote and facilitate learning so that students can reach their maximum potential and pursue lifelong learning, as well as proficient synthesizers of organized knowledge that enable critical and analytical thinking (Maricris, 2022). Furthermore, the quality of educational services provided in vocational and technical education institutions

plays a crucial role in determining the training level of future skilled workers, and consequently, the standards of their qualifications (Kovalchuk, Maslich, Tkachenko, Shevchuk, & Shchypsk, 2022).

A comprehensive program called TESDA Trainers Methodology Level 1 gives Technical Vocational Education and Training (TVET) trainers the skills needed to carry out the dual responsibilities of trainer and assessor. This course enables trainers to effectively build the skills of learners in technical and trade fields. TESDA certification enhances professional profiles, ensuring the delivery of high-quality, relevant training. With a focus on practical skills, the course opens pathways for career advancement and supports the growth of technical vocational education and training (Sector, 1959). On the other hand, the TESDA's Trainers Methodology Level 2 is an in-depth program designed for TVET trainers and technical experts. It provides essential competencies in training design and development, equipping trainers with the skills and knowledge to create impactful programs. This course offers flexibility, accessibility, and valuable networking opportunities, making it an excellent choice for professional growth. The Technical Vocational programs integrated the TM1 and TM2 in the curriculum meant to provide aspiring TVET (Technical-Vocational Education and Training) educators with the essential skills, methodologies, and qualifications required for teaching technical courses. In addition, by completing this course, instructors or trainers can refine their skills, gain new competencies, and progress in their TVET careers (Momanyi et al., 2022). Hence, the TESDA Trainers Methodology 1 and 2 programs enhance pre-service teachers who become trainers and deliver high-quality, industry-relevant training, ensuring learners receive effective, practical education that improves their employability in technical fields.

Pre-service teachers, particularly those in technical-vocational courses, are increasingly being acknowledged as needing technical-vocational competencies in order to successfully go through the rapidly changing digital and technical environment. In spite of the acknowledgment of the necessity for the technical vocational pre-service teachers to be highly trained, technical and vocational training are still largely ignored in terms of sufficient budget, staff, equipment contemporary facilities, and employee motivation, which have resulted in the production of half-baked graduates (Okoye, R., & Arimonu, M. 2016). A sizable portion of instructors are not adequately prepared, trained, or qualified before joining the teaching profession. In light of this, for Technical-Vocational Pre-Service teachers to meet these challenges, they need to focus on their technical proficiency and foster an understanding of the real-world demands (Tong, 2024).

Pedagogical competencies are the fundamental abilities, know-how, and attitudes needed to teach effectively. Essential teaching abilities including instructional planning, classroom management, and evaluation are all included in pedagogical competencies, which support a productive learning environment (Mitchell, M. M., & Bradshaw, C. P. 2013). According to research, interpersonal skills, empathy, and flexibility are critical because they enable teachers to establish relationships with students and support a student-centered approach (Cochran-Smith et al., 2016). Promoting critical thinking and problem-solving abilities, which are essential in technical-vocational education, is another aspect of effective teaching (Darling-Hammond et al., 2017). Thus, for teacher educators aiming to generate graduates prepared for varied and dynamic classrooms, it is essential to comprehend these important pedagogical competencies.

According to Shulman (2015), Pedagogical Content Knowledge (PCK) combines pedagogy and subject matter expertise to enable teachers to deliver material in a way that is both interesting and accessible to students. Because teachers must connect theoretical information with real-world applications to ensure that students get both conceptual understanding and practical abilities, PCK is essential in technical-vocational education (TVE) (Lederman & Lederman, 2015). Teachers can make content interesting and

approachable by combining pedagogy and subject knowledge through Pedagogical Content Knowledge (PCK). Because it blends theoretical ideas with real-world applications, PCK is crucial to technical-vocational education because it gives students workforce-relevant knowledge and abilities (Rahmawati, A., et al., 2021). Research suggests that in TVE, PCK is fostered by active, experiential learning and problem-solving exercises that improve students' capacity to relate what they learn in the classroom to real-world situations (Korthagen, 2017).

Despite broad consensus about the importance of having qualified educators, there are still significant issues with how pre-service teachers' technical-vocational and pedagogical competency is evaluated particularly when requirements differ greatly. Accurate skill evaluation and competency development are hampered by a lack of industry support, obsolete facilities, and inadequate resources, according to research on competency gaps and the need for improvement in technical vocational education assessment (Lloyd Alarcon et al., 2024)). These difficulties result in graduates having a skills mismatch in the labor market and being ill-prepared for technical careers. However, pedagogical competency evaluations frequently highlight deficiencies in teacher preparation, especially with regards to practical teaching techniques and the fit between competencies and real-world demands (Chen et al., 2020). In order to address these problems and guarantee uniform training quality across institutions, a single framework for standardizing competency assessments must be developed (Naelgas & Malonisio, 2022).

This study aims to assess the technical-vocational and pedagogical competencies of pre-service teachers in the Philippines, addressing the need for a cohesive framework to evaluate these essential skills. Technical-vocational pre-service teachers play a crucial role in developing a skilled workforce, yet they often face challenges due to inconsistent competency standards, outdated facilities, and limited industry support. There are still gaps in the assessment of the specialized and practical knowledge needed for technical-vocational education, despite frameworks such as the Philippine Professional Standards for Teachers (PPST) emphasizing ongoing professional development. Strong Pedagogical Content Knowledge (PCK) that blends theory and practical abilities pertinent to industry demands is essential for effective instruction in this subject, but existing methods for assessment usually ignore this. In order to support the country's objectives for sustainable development and global competitiveness, this study aims to improve teacher preparation programs by investigating and suggesting better assessment models. This will guarantee that aspiring teachers are prepared to meet the changing demands of the workforce.

OBJECTIVE OF THE STUDY

This paper aims to assess the technical-vocational and pedagogical competencies of pre-service teachers of Southern Philippines. Specifically, this paper aims to answer the question:

1. What is the perceived level of technical-vocational and pedagogical competencies of pre-service teachers?

METHODOLOGY

The goal of the study is to assess the technical-vocational and pedagogical competencies of pre-service teachers of Southern Philippines based on competency indicators from the Philippine Professional Standards for Teachers (PPST), Commission on Higher Education (CHED) Memorandum Order 78 and 79, and Technical Education and Skills Development Authority (TESDA) Trainer's Methodology 1 and 2. To achieve this goal, a descriptive research design was employed. According to Creswell (2018), a descriptive study design is a non-experimental method used in studies where describing traits, behaviors,

occurrences, or trends is the main goal without trying to change or modify them. Through a holistic analysis of how the pre-service teachers exhibit the fundamental abilities, know-how, and dispositions needed for successful teaching, this design sought to precisely and methodically characterize their level of competencies.

The respondents of the study are fifty (50) pre-service teachers who took Bachelor of Technical-Vocational Teacher Education majoring in Food and Services Management, Computer Hardware and Servicing, and Fashion and Garment Technologies, and Bachelor of Technology and Livelihood Education majoring in Home Economics, deployed in different public high schools in the Cagayan de Oro and Misamis Oriental divisions of Southern Philippines in the academic year 2024-2025. A census was employed in this study, which gathered data from every member of the whole population. This method is typically used when the population is small enough to permit complete inclusion or when researchers want to get accurate and thorough data that represents the whole group without running the risk of sampling error (Fink, A. 2016). Respondents of the study consists of fifty (50) preservice teachers, who were on teaching internship for the 1st semester of academic year 2024-2025, 16.0% (n=8) of which are BTLED students while 84.0% (n=42) are BTVTED students. Thirty-three percent (34%, n=17) of these respondents are males and sixty-six percent (66%, n=33) are females. The respondents' age ranged from 20 to 44, indicating an average of 23 years. If the age 44, considered as an outlier is taken out, the range would be from 20-24 with an average age of 22 years.

Moreover, the researcher utilized a 5-point Likert Scale survey questionnaire to gather data in this study. The instrument is composed of forty-two (42) items designed and developed to measure the pre-service teachers' technical-vocational and pedagogical competencies based on the competency indicators from the Philippine Professional Standards for Teachers (PPST), CHED Memorandum Orders (CMO) 78 and 79, and Trainer's Methodology (TM) 1 and 2. Each item of the questionnaire was measured where 1 as the lowest, which means "Never" and 5 as the highest which means "Always". The research instrument was checked and validated by five research experts, particularly technical-vocational educators, a pre-service teaching coordinator, a psychometrician, and a pedagogical courses educator.

Sometimes, especially when doing a small-scale study, researchers may decide not to use pilot testing (Teresi, et al., 2022). In quantitative research, where larger sample sizes are frequently favored for statistical power and generalizability, a study with 50 respondents is typically regarded as small-scale (Andrade, 2020). While pilot testing is frequently recommended to guarantee the validity and comprehensibility of a survey. ATLAS.ti (2022) points out that it may not be necessary for all research, particularly smaller ones where simpler survey designs or prior expertise with the survey instrument may negate the need for early testing. Hazzi and Maldaon (2015) provide additional support for this claim, stating that methodological adjustments in small-scale research highlight that although pilot testing increases survey reliability, smaller studies with fewer resources may be able to eschew this step by depending on instruments that have already been proven or validated. Thus, in a small-scale study, a survey for data collection can be carried out without pilot testing. However, in this study, a reliability correlation index was computed from the data gathered and results revealed that Cronbach's alpha, α, is equivalent to .95 showing high consistency of results.

In the data collection process, the researcher initially got a letter of consent from the College of Education. After approval, the concerned respondents received consent letters to take part in the study. The researcher then gave the pre-service teachers the research instrument, explaining the purpose of the study and the significance of ethics, including the guarantee of confidentiality and secrecy and the respondents' right to

withdraw from the study at any time without facing any repercussions. Additionally, thorough instructions on how to respond to the instrument were given to the pre-service teachers. After every respondent had completed the survey, the researcher gathered the forms and got them ready for statistical analysis.

Data collected in this study were prepared and treated using the mean and standard deviation. Mean is described as the average of a set of scores or values, while standard deviation is a statistic measuring the dispersion of a dataset relative to its mean (Gravetter & Wallnau, 2020). After that, analyzed data were scored and interpreted using the table below:

Table 1: Scoring Guide and Verbal Interpretation for the Pre-Service Technical-Vocational and Pedagogical Competencies

Scale	Range	Remarks	Verbal Interpretation
5	4.50-5.00	Always	Highly Competent
4	3.50-4.49	Frequently	Competent
3	2.50-3.49	Occasionally	Neutral
2	1.50-2.49	Seldom	Somewhat Incompetent
1	1.00-1.49	Never	Incompetent

RESULTS AND DISCUSSION

The teacher education curriculum in the Philippines requires 360 hours of teaching internship by pre-service teachers (CMO No. 160 series 2022). The respondents of this study were deployed to 3 public secondary schools offering Tech-Voc courses and one higher education institution in Northern Mindanao. The respondents were asked to do the self-assessment after rendering at least 240 hours of internship. Table 2 presents the results of the self-assessment of pre-service teachers regarding their technical-vocational and pedagogical competencies.

Table 2: The Pre-Service Teachers' Technical-Vocational and Pedagogical Competencies

DOMAINS	Mean	SD	Description
1. Technical and vocational knowledge and pedagogy	4.32	0.81	Highly Competent
2. Learning environment	4.59	0.62	Highly Competent
3. Diversity of learners	4.63	0.61	Highly Competent
4. Curriculum and planning	4.59	0.67	Highly Competent
5. Assessment and reporting	4.33	0.84	Competent
6. Community linkages and professional engagement	4.52	0.65	Highly Competent
7. Personal growth and professional development	4.34	0.86	Competent
Grand Mean	4.47	0.86	Competent

The results indicate that the pre-service teachers generally view their competence across various domains as high, achieving an overall grand mean of 4.47, which is classified as "Competent." Their self-assessments in different areas ranged from 4.32 to 4.63, highlighting their positive perceptions of their knowledge, skills, and attitude.

The highest ratings were observed in the "Diversity of Learners" domain, with a mean score of 4.63, suggesting that pre-service teachers feel particularly skilled at addressing diverse learner needs, a key

aspect in effective teaching. This finding is supported by Darling-Hammond (2014) declaring that pre-service teachers must be adequately equipped to handle the diversity of learners, stressing that inclusive and background-responsive teaching practices are essential components of successful teacher education programs. In addition, diversity is emphasized in the realm of teacher preparation as a crucial element in creating successful teaching strategies (Cochran-Smith & Villegas, 2016). Together, these findings highlight the consensus on diversity as a cornerstone in teacher training.

Additionally, the domains of "Learning Environment" and "Curriculum and Planning" also received high mean scores of 4.59, showcasing the pre-service teachers' capabilities in creating effective learning spaces and planning organized instructional strategies. A high score in "Learning Environment" implies that pre-service teachers are not only able to manage physical aspects of the classroom but also cultivate an inclusive and motivating atmosphere that supports academic and social development. Research highlights the value of a supportive learning environment in the classroom, indicating that it has a direct impact on students' behavior, mental health, and engagement—all of which are essential for successful learning (Pianta et al., 2016). Likewise, the high scores on "Curriculum and Planning" also demonstrate the pre-service teachers' competence in lesson planning, instructional material organization, and curriculum alignment—all of which are critical for effective teaching. Because well-structured classes help to clarify learning objectives and facilitate seamless transitions between activities, effective curriculum planning is linked to improved student understanding and accomplishment (Wang et al., 2015). The importance of this high score in "Curriculum and Planning" is further supported by research that demonstrates how crucial it is to modify curricula and instructional strategies to accommodate a range of learning requirements in order to provide fair learning opportunities. (Darling-Hammond et al., 2015).

In contrast, the domains of "Assessment and Reporting" and "Personal Growth and Professional Development" had slightly lower mean scores of 4.33 and 4.34, respectively. This indicates potential areas for improvement. Although these areas are still rated as competent, they may benefit from targeted enhancements, particularly given the higher variability in responses. Implementing focused professional development opportunities could help address these areas and improve overall competency.

In the area of "Assessment and Reporting," these findings could suggest that pre-service teachers are still unsure or inconsistent about their capacity to plan, carry out, and analyze a range of assessment techniques in order to accurately measure student learning. Proficiency in assessment is essential because it allows teachers to adjust their lessons to the requirements of their students and give insightful feedback that promotes academic progress (Black & Wiliam, 2018). According to research, teachers frequently feel less equipped to utilize data to inform instruction and conduct formative assessments, which emphasizes the need for targeted training in these areas (Volante & Beckett, 2019).

Similarly, the "Personal Growth and Professional Development" score emphasizes how crucial it is to support teaching professionals' dedication to lifelong learning. To keep up with changing teaching methods, pedagogical developments, and a variety of classroom requirements, teachers must engage in ongoing professional development (Schleicher, 2016). Pre-service teachers' ability to participate in continuous learning and professional development may be improved by offering them organized opportunities for professional development, self-evaluation, and reflection (Darling-Hammond et al., 2020). Studies demonstrate the value of peer cooperation, mentorship, and workshops centered on reflective techniques in fostering both professional and personal development (Skaalvik & Skaalvik, 2018).

In summary, the grand mean of 4.47 reflects a competent performance level among pre-service teachers. However, it is essential to address the variability in responses, especially in "Technical and Vocational Knowledge and Pedagogy" and "Assessment and Reporting." Strategic professional development initiatives could promote greater consistency and support further growth. Maintaining strengths in high-performing areas will also be crucial for enhancing overall educational quality. This analysis provides stakeholders with a clear understanding of current competencies, guiding effective decision-making in the preparation of preservice teachers.

The grand mean of 4.47 indicates that pre-service teachers are typically competent, indicating that they are prepared to use effective teaching strategies. However, the disparity in categories like "Technical and Vocational Knowledge and Pedagogy" and "Assessment and Reporting" points to areas that need specific attention. In order to close these gaps, Darling-Hammond (2014) emphasizes the value of ongoing professional development, especially in the specific teaching abilities that support a teacher's flexibility and efficacy as an educator. Teachers would be well-equipped to handle a variety of educational needs if professional development focused on technical knowledge and assessment skills was implemented. Furthermore, because these qualities are the cornerstone of a strong teaching practice that serves varied learners, Cochran-Smith and Villegas (2015) contend that preserving strengths in high-performing regions is equally as important as resolving deficiencies.

In addition to balancing competencies across domains, offering preservice teachers ongoing support through organized development programs may help provide a more integrated learning environment. Siwatu and Starker (2014) propose that improving self-efficacy in a variety of teaching skills can lead to a more complete skill set, which in turn improves student results. Therefore, this research provides stakeholders with knowledge about pre-service teachers' present competencies and a plan for putting those improvements into practice while preserving current strengths. In order to support successful teacher preparation programs that produce highly qualified educators, several actions will be crucial.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. It has been found that pre-service teachers typically exhibit a strong sense of competence in a number of significant teaching domains, with specializations in curriculum development, classroom diversity management, and fostering good learning environments. These subject areas demonstrate an awareness of the vital role educators play in meeting the various needs of their students and creating welcoming, encouraging learning environments.
2. In line with contemporary best practices in teacher preparation, the capacity to organize well-structured courses and establish an inspiring atmosphere that promotes both academic and social development is unquestionably regarded as a fundamental strength.
3. Pre-service teachers seem well-prepared to manage diverse classes and apply excellent teaching practices, which are essential for successful teaching.
4. In contrast to their strengths in areas like managing classroom diversity and planning effective instruction, pre-service teachers exhibit comparatively lower levels of confidence in the domains of assessment methods and personal professional growth.
5. While they still perceive themselves as competent in these areas, there is some indication that they feel less equipped to apply various assessment methods and engage in ongoing self-improvement consistently.

6. A possible weakness in their ability to evaluate student learning and advance their careers is shown in these categories. Despite these relative areas of weakness, pre-service teachers generally have a favorable assessment of their teaching skills indicating a strong foundation in important pedagogical concepts.

RECOMMENDATIONS

Based on the conclusions, the following were strongly recommended:

1. **Enhance Training in Assessment Techniques:** Offer focused training sessions on a variety of assessment techniques (such as formative and summative) to improve pre-service teachers' abilities to assess students' progress and provide helpful criticism. Additionally, the introduction of digital tools to aid expedite the evaluation process and broaden the assessment toolset of pre-service teachers is an example of how technology is being integrated into assessment training.
2. **Strengthening Mentorship and Professional Support:** Create a formal mentorship program in which seasoned educators are paired with pre-service teachers to provide ongoing support, direction, and feedback. Then, to maximize support in these areas, look at how mentorship relationships affect skill development, especially in areas like professional growth and assessment.
3. **Expand Practical, Real-World Teaching Experiences:** Expand possibilities for experiential learning by offering internships or practicums, which give pre-service teachers the chance to practice their abilities in real-world classroom environments and get immediate feedback. To enhance teaching abilities and create a helpful network for exchanging concepts and methods, promote peer cooperation and coaching.
4. **Conduct Future Research:** Future research should examine the effectiveness of specialized competency training in areas such as assessment techniques and personal professional growth to evaluate best practices and improvements in teacher competencies. Additionally, analyzing how individual factors (such as prior experience or personal qualities) affect competency perceptions could help to tailor teacher training programs more effectively. Researchers may also explore the variation in pre-service teachers' self-assessments, particularly in lower-rated areas, to determine the factors influencing their self-perceptions. Comparing these self-assessments with evaluations from superiors or mentors may reveal discrepancies and clarify how self-perception aligns with actual performance. Furthermore, conducting a study on the evaluation of other competencies as rated by the per-service teachers' cooperating teachers. Last but not least, future studies should investigate whether pre-service teachers' technical-vocational and pedagogical competencies, as assessed in this study, correlate with student academic achievement and engagement in the classroom once they start their teaching careers.

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