



ASSESSING STUDENT-TEACHER PROFESSIONAL COMPETENCE THROUGH MULTI-SOURCE TEACHING EVALUATIONS

Dr. Deepak Kalyanrao More¹

¹Assistant professor, Shalyatantra, MUHS, Email id: dr1deepak2@gmail.com, ORCID
id: 0009-0006-3925-5846

Article History:

Article Type: **Research**

Received Date: 17/05/2026

Revised Date: 18/07/2026

Accepted Date: 15/08/2026

Published Date: 27/08/2026

Keywords: Student-
teacher competence;
teaching evaluation;
multi-source assessment;
professional dispositions;
teacher education

ABSTRACT

This study evaluated the teaching competency of students based on multi-source evaluation by students teachers, cooperating teachers and supervisor of the university. One thousand four hundred eight-six evaluation records with 30 competency items in six domains were used for quantitative secondary-data analysis: Foundational Understanding, Planning, Organization and Preparation, Teaching Skills, Assessment and Evaluation for Learning, Classroom Management Knowledge and Skills, and Professional Dispositions. Mid-term and final evaluations were compared with each other, reliability was used to check evaluators' and stages' effects; descriptive statistics were used as data analysis tools; and one-way ANOVA and two-way ANOVA were used. The instrument had a highly reliable overall score (Cronbach's $\alpha = 0.965$) and an average competence score of 3.27 ± 0.40 . The highest domain score was obtained in Professional Dispositions and the lowest domain score was obtained in Assessment and Evaluation for Learning. Overall, cooperating teachers gave the highest ratings; university supervisors and student-teacher self-evaluations were next. The competence scores in the final evaluation records were significantly higher than the mid-term records, and evaluator-type and evaluator-stage effects were noted. The results in this study point to the value of multi-source evaluation to get different angles on teaching competence and what needs professional development. Since candidate identifiers were not available, differences in stages were not interpreted as change over time but only at the group level.

1. Introduction

Professional competence is one of the major outcomes of teacher education because teaching is a multidisciplinary field which involves the use of disciplinary knowledge, pedagogical understanding, classroom management, the ability to assess and professional conduct. Teacher preparation programs thus have a goal of building theory and skills before entering the classroom. Student teaching is especially valued because of the opportunity it offers the candidate to apply knowledge and understanding of the pedagogy, manage a classroom, interact with learners, and receive feedback in a structured manner. Research indicates that the learning environment for students can impact candidates' performance and professional learning (Bastian et al., 2023). Likewise, effective mentoring and cooperating-teacher support can enhance the hands-on learning opportunities of student teachers (Barry et al., 2021; Kang, 2021). The practicum also enables teacher candidates to bridge their university preparation with what happens in the classroom, but the quality and effectiveness of these supervisory processes can be quite diverse (Bjørndal et al., 2024). It, therefore, becomes important to evaluate the progress, developmental needs, and strengths systematically during practical training.

Student-teacher professional competence can be defined by the ability to integrate professional knowledge, planning, instructional skills, assessment practices, classroom management, and professional disposition in effective classroom practice. Competence does not only refer to knowledge acquisition; it is defined as the ability to manage learning, make instructional choices and adjust instructional practices to learners and teaching situations (Brenner, 2022). Classroom management is one aspect that is of significance as pre-service teachers rely on formal teacher education as well as their previous schooling experiences when they are forming their knowledge of classroom management (Baier-Mosch & Kunter, 2024). The results of the research also indicate that case-based instruction, immersive simulations and virtual learning environment methods increase the classroom management skills of pre-service teachers (Chen, 2024; Li et al., 2024). Some of the same gains have been found with simulation-based practicum experiences to enhance teaching skills (Kelleci Alkan et al., 2026). Professional competence also entails the ability to be responsive to diverse learners, the confidence and pedagogical skills to teach multilingual learners effectively (Mahalingappa, 2023). All of these dimensions together offer a comprehensive framework for assessment of student-teacher readiness for professional practice.

The multi-source evaluation reflects the student-teacher, cooperating teacher, and university supervisor's perspectives in a more comprehensive way on student-teacher competence. The role of the cooperating teacher is central to the mentoring, observation, modeling, and support of the teacher candidates in their practicum (Carmi & Tamir, 2023). Adding an evaluative perspective, university supervisors provide a linkage between institutional expectations and what they observe in teaching and in professional development (Dionne et al., 2024). While supervision can facilitate reflection and interpretation of experiences in teaching, the purpose and practices of supervision need to be clearly established to enhance candidate learning (Diacopoulos & Butler, 2020). Self-evaluation provides an additional dimension as the student teacher(s) can consider their own level of preparedness, difficulties and growth. This self-reflection is particularly crucial when candidates face an unfamiliar teaching environment, such as a virtual classroom that demands adaptation of management strategies (Hojeij et al., 2023). These sources, taken together, can create a more balanced assessment of professional competence than can a single evaluator.

While research indicates that teacher education programs have focused on mentoring, supervision, classroom management, and practicum learning, the literature has been limited in incorporating more than one evaluator's perspective in a few competence areas and several levels of evaluation. To ensure continuous improvement in the preparation of educators, there must be systematic evidence provided by candidates and by educators who mentor and supervise the candidates (Brondyk, 2024). There is, however, little understanding of the discrepancies between student-teacher and co-operating-teacher evaluations and university-supervisor evaluations, especially when the evaluations of competence are compared over the course of mid-term and final assessments.

This study is designed to evaluate the student-teacher professional competence in several important areas of professional competency based on multi-source teaching evaluations. Specifically, it aims to

measure overall competence, analyze the competence levels in each of the professional areas, compare ratings from student teachers, cooperating teachers, and university supervisors, compare ratings from mid-term and final evaluations, and see if there is a relationship between evaluator type and evaluation stage and differences in professional competence ratings.

2. Methodology

2.1 Research Design

The research was a quantitative secondary data analysis with a comparative design to evaluate the student-teacher's professional competence in teaching based on the results of multi-source teaching evaluation. An analysis was conducted between the ratings of the evaluator groups and between the mid-term and final evaluation stages. Due to the lack of a unique candidate identifier in the dataset, mid-term and final records were not matched for repeated observations, but instead, comparison groups.

2.2 Dataset and Sample

There were 1,486 records of teaching evaluations and 32 variables. The number of mid-term and final evaluations contained in it were 768 and 718 respectively. There were three types of evaluator groups: cooperating teachers (499), student teachers (486) and the University supervisors (501). There were no missing values in the analysis-ready data set for the 30 competency items (Joseph et al., 2020).

2.3 Research Instrument

The Student Teaching Evaluation Rubric was used to determine professional competence. The instrument contained 30 competency items under six domains: Foundational Understanding, Planning, Organization, and Preparation, Teaching Skills, Assessment and Evaluation for Learning, Classroom Management Knowledge and Skills, and Professional Dispositions. The ratings of each item were on a 4-point Likert scale: 1 = Below Expectations, 2 = Developing, 3 = Meets Expectations, and 4 = Exceeds Expectations. The higher scores indicated greater professional competence.

2.4 Study Variables

Evaluator type and evaluation stage were the main grouping variables. RaterID indicated evaluator type (cooperating teachers, student teachers or university supervisors) and Eval identified the type of evaluation (Mid-term or Final). The dependent variables were the six scores on the professional competence domain and the overall score on the professional competence. Domain scores were calculated as the mean of the appropriate items and the overall competence score was calculated as the mean of all 30 competency ratings.

2.5 Statistical Analysis

Evaluation distribution was described using frequencies and percentages and competence scores were summarized by means and standard deviations. The internal consistency of the instrument and its domains were assessed using Cronbach's alpha. One-way ANOVA was used to compare the differences between evaluator groups, and independent groups were compared between mid-term and final evaluations. In order to investigate the effect of evaluator type, evaluation stage and their interactions on professional competence, two-way ANOVA was used. If significant differences were found, then post hoc analyses were performed. Where appropriate, effect sizes were reported and statistical significance was defined as $p < .05$. Results were interpreted as differences between the evaluation records and not as individual longitudinal change because candidate-level matching was not possible.

3. Results

3.1 Distribution of Teaching Evaluations

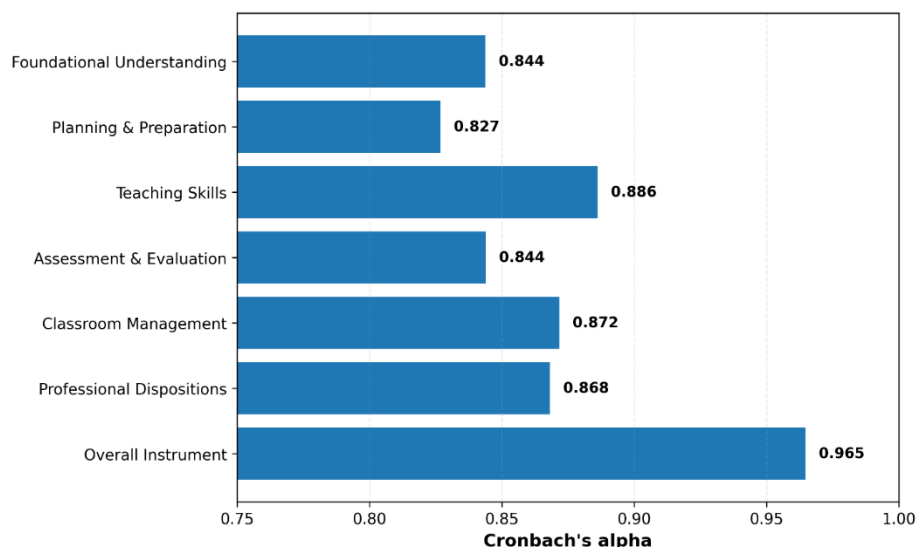
1,486 teaching evaluation records were analysed. The distribution of the records was fairly even among the three groups of evaluators: cooperating teachers (CT), student teachers (ST), and university supervisors (US), who made 499, 486, and 501 evaluations, respectively. 768 (51.7%) records were for mid-term evaluations and 718 (48.3%) were for final evaluations. This fairly even split allowed for relevant comparisons between evaluator type and stage of evaluation. Table 1 shows how the teaching evaluations are distributed by evaluator type and evaluator stage.

Table 1. Distribution of Teaching Evaluations by Evaluator Type and Evaluation Stage

Evaluator	Mid-term, n	Final, n	Total, n	% of Sample
Cooperating Teachers (CT)	262	237	499	33.6
Student Teachers (ST)	256	230	486	32.7
University Supervisors (US)	250	251	501	33.7
Total	768	718	1,486	100.0

3.2 Reliability of the Professional Competence Instrument

The Student Teaching Evaluation Instrument had a high internal consistency. The alpha of the full 30-item competence scale was 0.965, which means that the scale has excellent reliability. The six professional competence domains had reliability coefficients that were between 0.827 and 0.886. Teaching Skills had the highest domain-level reliability ($K = 0.886$) in that order Classroom Management Knowledge and Skills ($K = 0.872$) and Professional Dispositions ($K = 0.868$). All of the coefficients were more than the generally accepted coefficient of 0.70 which argues in favor of the use of composite domain scores in future analyses. Figure 1 shows the reliability coefficients of the 6 domains of professional competence and the instrument as a whole.

**Figure 1. Internal Consistency of the Professional Competence Instrument**

3.3 Overall Student-Teacher Professional Competence

The overall score for professional competence (on the four-point scale) for all 1,486 evaluation records was 3.27 ± 0.40 , with a normal distribution of scores around Meets Expectations and Exceeds Expectations. For descriptive interpretation, overall mean scores were divided into equal-width intervals representing the four performance levels. Some half of the records were within the Meets Expectations category (50.5%) and 46.4% within the Exceeds Expectations category. The percentages of Developing (3.0%) and Below Expectations (0.1%) were small. Overall levels of professional competence for the 1,486 evaluation records are shown in Table 2. The majority of the evaluations were judged as Meets Expectations (50.5%) or Exceeds Expectations (46.4%) with a very low number of evaluations in the Developing (3.0%) and Below Expectations (0.1%) categories.

Table 2. Distribution of Overall Student-Teacher Professional Competence Levels

Professional Competence Level	Score Range	Frequency (n)	Percentage (%)
-------------------------------	-------------	---------------	----------------

Below Expectations	1.00–1.75	2	0.1
Developing	1.76–2.50	45	3.0
Meets Expectations	2.51–3.25	750	50.5
Exceeds Expectations	3.26–4.00	689	46.4
Total	—	1,486	100.0

3.4 Professional Competence Across the Six Domains

There were differences in competence scores in the six professional domains. The largest mean score was Professional Dispositions ($M = 3.34$, $SD = 0.43$), followed by Classroom Management Knowledge and Skills ($M = 3.29$, $SD = 0.46$), Planning, Organization, and Preparation ($M = 3.28$, $SD = 0.50$), and Foundational Understanding ($M = 3.27$, $SD = 0.42$). The mean of 3.24 ($SD = 0.45$) in Teaching Skills was a little smaller. Assessment and Evaluation had the lowest domain score ($M = 3.11$, $SD = 0.45$), but the average was still above the Meets Expectations standard. Figure 2 shows the mean performance of six domains of professional competence in a relative manner.

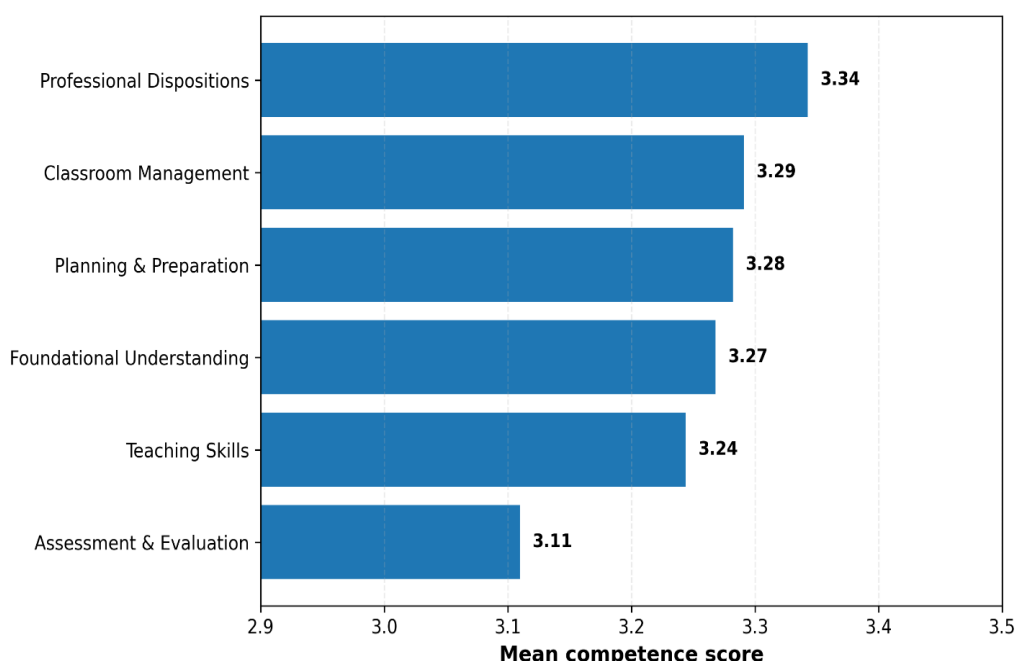


Figure 2. Mean Professional Competence Scores Across the Six Domains

3.5 Professional Competence by Evaluation Source

There were significant differences between the three groups of evaluators for all competence domains as well as for the overall competence for professionals. Student-teacher self-evaluations ($M = 3.20$), university supervisors ($M = 3.28$), and cooperating teachers ($M = 3.32$) had the highest mean scores overall. The overall evaluator effect was statistically significant, $F(2, 1483) = 11.97$, $p < .001$, $\eta^2 = .016$. The greatest differences between evaluators were found for Assessment and Evaluation for Learning and Professional Dispositions. The results of post hoc comparisons indicated that student teachers tended to report their own competence to be lower than that of cooperating teachers, and that there were less substantial differences between the cooperating teachers and the university supervisors for a number of domains. Table 3 shows how well teachers are rated on professional competence by the three assessment sources.

Table 3. Professional Competence Scores According to Evaluator Type

Competence Domain	CT Mean	ST Mean	US Mean	F	p	η^2
-------------------	---------	---------	---------	---	---	----------

Foundational Understanding	3.32	3.21	3.27	7.28	<.001	.010
Planning, Organization, and Preparation	3.33	3.22	3.30	6.47	.002	.009
Teaching Skills	3.28	3.18	3.27	7.20	<.001	.010
Assessment and Evaluation for Learning	3.21	3.04	3.08	19.66	<.001	.026
Classroom Management Knowledge and Skills	3.32	3.22	3.33	8.48	<.001	.011
Professional Dispositions	3.42	3.26	3.34	17.37	<.001	.023
Overall Professional Competence	3.32	3.20	3.28	11.97	<.001	.016

3.6 Professional Competence by Evaluation Stage

Across all six, higher scores of professional competence were found on final evaluations as compared to the mid-term evaluations. Overall competence improved from 3.08 ± 0.34 at mid-term to 3.47 ± 0.35 at the statistically significant end ($p < .001$; Cohen's $d = 1.11$). The greatest standardized difference was seen for Teaching Skills with a $d = 1.05$ followed by Foundational Understanding with a $d = 0.98$, and Classroom Management Knowledge and Skills with a $d = 0.98$. The smallest, but still significant, stage difference was in Professional Dispositions ($d = 0.83$). As seen in Figure 3, mean competence ratings in all professional areas were higher in final evaluations than in previous evaluations.

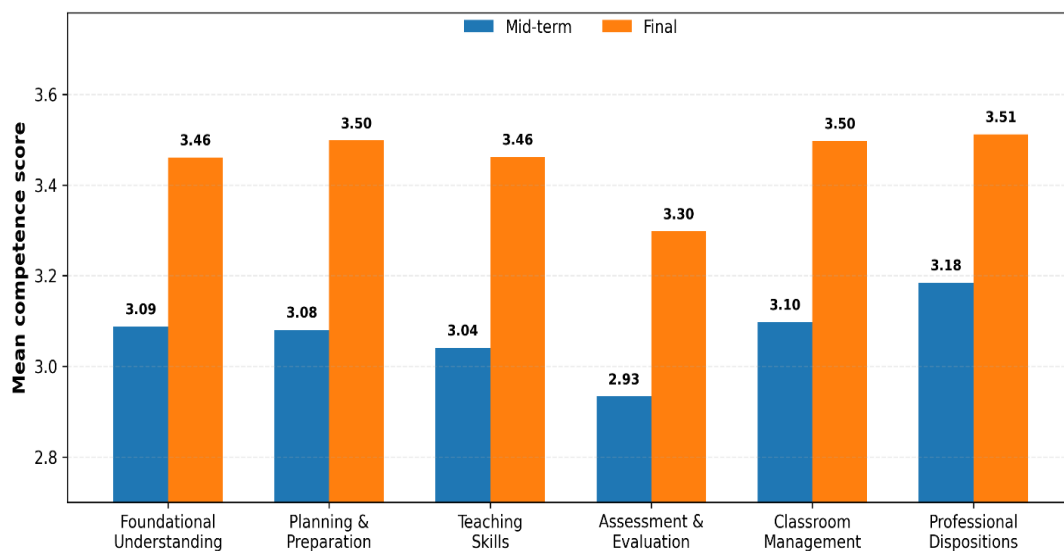


Figure 3. Mid-Term and Final Professional Competence Scores Across the Six Domains

These results indicate substantially higher competence ratings in final evaluation records; however, because candidate identifiers were unavailable, this pattern represents differences between evaluation-stage groups rather than verified within-candidate longitudinal improvement.

3.7 Interaction Between Evaluator Type and Evaluation Stage

Overall professional competence was found to have a significant interaction between evaluator type and evaluation stage, $F(2, 1480) = 9.48$, $p < .001$, partial $\eta^2 = .013$. Foundational Understanding,

Planning and Preparation, Teaching Skills, Classroom Management, and Professional Dispositions were also found to have significant interactions. There was no statistical significance for the interaction of Assessment and Evaluation for Learning ($p = .154$). All interaction effect sizes were relatively small with the largest interaction effect being Foundational Understanding. The interaction of evaluator type and evaluation stage for overall competence and each professional domain is presented in Table 4.

Table 4. Interaction Effects of Evaluator Type and Evaluation Stage on Professional Competence

Competence Domain	F	p	Partial η^2
Foundational Understanding	15.32	<.001	.020
Planning, Organization, and Preparation	7.00	<.001	.009
Teaching Skills	9.65	<.001	.013
Assessment and Evaluation for Learning	1.88	.154	.003
Classroom Management Knowledge and Skills	4.05	.018	.005
Professional Dispositions	6.55	.001	.009
Overall Professional Competence	9.48	<.001	.013

The results indicate that the magnitude of mid-term–final differences was not identical across evaluator groups, although interaction effects were generally modest.

3.8 Summary of Major Findings

In general, the results indicated high student-teacher professional competence levels evaluated and high internal consistency of the assessment tool. Professional Dispositions was the most rated competence area and the least rated was Assessment and Evaluation of Learning. Cooperating teachers tended to rate the highest on the general rating and student teachers were the lowest in self-evaluation. Last assessment notes indicated a significant increase in competence scores as compared to the middle-term assessment in all areas. The type of evaluator and the stage of evaluation and the interaction between the two played a significant role in the overall professional competence but the effect of stage was much higher than that of the evaluator and the interaction. In overall competence, the evaluation stage main effect was significant, partial $\eta^2 = .240$, but the evaluator type and the evaluation-by-stage interaction were not so significant. As Figure 4 shows, ratings of overall competence varied among the groups of evaluators between the middle and the final stages of the evaluation.

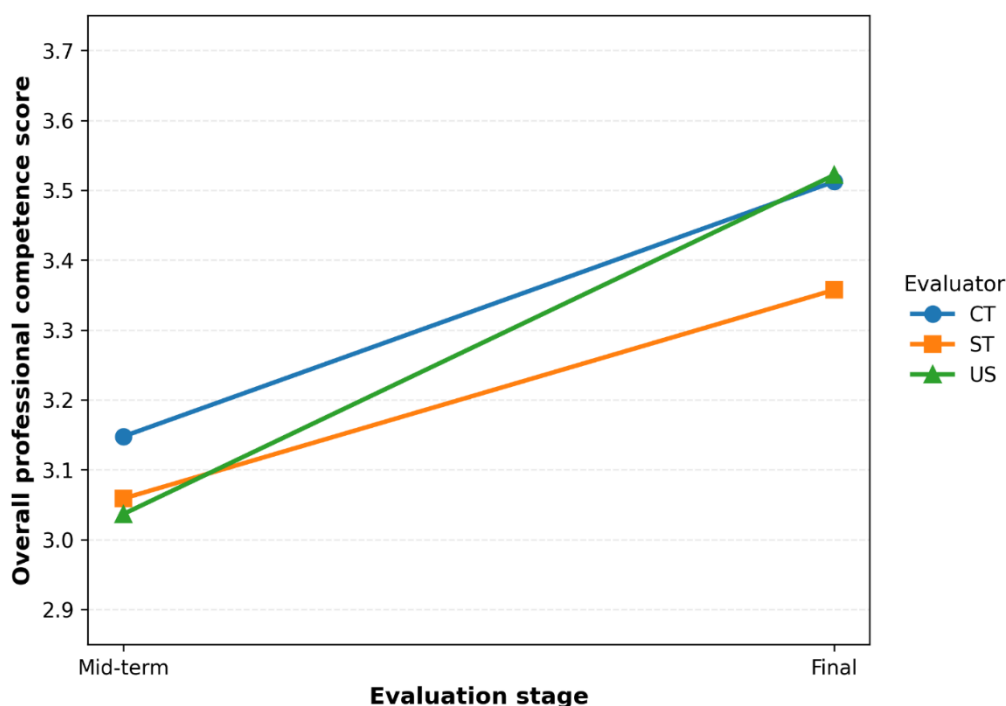


Figure 4. Interaction Between Evaluator Type and Evaluation Stage for Overall Professional Competence

4. Discussion

Results show that collectively, student teachers' overall mean was placed in the range between Meets Expectations and Exceeds Expectations. Professional Dispositions scored the highest and Assessment and Evaluation for Learning scored the lowest. This pattern indicates that interpersonal, ethical and professional behaviours more consistently exhibited during practicum than technically demanding assessment practices. Other studies have highlighted the importance of assessing several aspects of successful teaching in one's practicum experience instead of relying on a single performance measure (Rusznayak & Österling, 2024). Main differences were also observed between evaluator groups and between the final and mid-term evaluations.

This is somewhat encouraging, as there is evidence that dispositions are a core element of teacher readiness and they can be systematically assessed within preparation programs (Saltis et al., 2021). Classroom Management was also rated relatively highly, indicating that in general student teachers create supportive and organized learning environments. This is crucial because competence in classroom management builds over time, through not only formal instruction but also repeated practice in real-world teaching contexts, where the teacher reflects on their performance and continuously strives for improvement (Seufert et al., 2022). Assessment and Evaluation for Learning on the other hand had the lowest mean. Assessment is frequently a complex process involving pedagogical judgments, interpretation of evidence, and instructional decisions, and can be difficult during early teaching experiences (Monney et al., 2022).

Highest competence ratings were achieved by cooperating teachers and the lowest self-evaluations were achieved by student teachers. The differences due to different evaluator roles, expectations, and reference points. Student teachers have a more severe self-evaluation, since they are directly aware of their uncertainty and growing confidence, and mentors might be more mindful of what can be seen in terms of progress during the practicum. Mentor-student teacher relationships can shape the interpretation, support and evaluation of practice (Matsko et al., 2023). Cooperating teachers and university supervisors also fulfill different supervisory functions, which may lead them to attend to different aspects of candidate performance (Navarro-Ibáñez & Cárdenas, 2026). This means that mentoring tools and structured feedback have a crucial role to play in reducing the discrepancies between the various evaluation sources (Nesje & Lejonberg, 2022).

Final evaluations were always higher than mid-term evaluations in all competence domains. This way of working aligns with the assumption that competence in teaching is achieved through ongoing practicum, feedback, observation and reflection. Over time, teaching practice can build preservice teachers' confidence and perceived ability and structured instructional interventions have been linked to improvements in self-efficacy during teacher preparation (Megawati & Astutik, 2018; Rushby et al., 2025). Growth can be further supported through lesson-study approaches and guided practicum experiences, which allow for the connection between planning, enactment, observation, and reflection (Maurício & Valente, 2024). Candidates' identifiers were not, however, available and so the stage differences observed should not be interpreted as being a measure of individual longitudinal improvement.

The results support the multi-source evaluation in teacher education since cooperating teachers, university supervisors and student teachers provide complementary perspectives. Mentor teachers can, and should, do more than simply host candidates, they can actively engage in learning about teaching by modelling, feedback, and guided interpretation of classroom practice (Matsko et al., 2024). The lower assessment-domain scores suggest that some preparation programs need more focus on the use of formative assessment, evidence-based instructional decisions, and feedback practices. In addition, responsive disciplinary teaching should be explicitly included in the development of practicum (Ortmann & Stumme-Berg, 2024).

The challenge was that there did not exist a unique candidate identifier. As a result, individual mid-term and final assessments could not be linked and ratings from different groups of evaluators not confidently be linked to the same student teacher. Evaluation ratings were also used in the study as opposed to direct measures of performance. Further, cooperating-teacher involvement may affect candidate experiences and evaluation processes, and this should be taken into account when interpreting cooperating-teacher-generated ratings (Bardelli et al., 2019).

Future research should incorporate a unique candidate identifier to enable matched longitudinal analysis and direct interrater comparisons. Agreement between the student teachers, cooperating teachers, and university supervisors should also be studied and the demographic, academic, placement, and institutional variables should be included in the study. Better inclusion of practicum observation, mentoring evidence, and performance-based assessment would give a more holistic insight into professional competence development.

5. Conclusion

The multi-source teaching evaluations that were completed by student teachers, cooperating teachers, and university supervisors at the mid-term and final stages of the study were used in this study to assess student-teacher professional competence. Results were found to generally be at a high level with the overall mean level falling between Meets Expectations and Exceeds Expectations. The highest ratings were given to the Professional Dispositions domain, and the lowest to the Assessment and Evaluation for Learning domain, suggesting that there may be a need for further teaching and learning support in this latter domain. There were also differences between evaluator groups, with cooperating teachers generally giving higher ratings and student teachers giving comparatively low ratings on their self-evaluations. The competence scores in the final evaluation were also consistently higher than the scores in the mid-term evaluation, indicating higher competence in the latter phase of the teaching experience. The differences should however be interpreted at the group level as there were no unique identifiers for the candidates in the data set to enable matching across time. Overall, the findings validate the use of multiple sources of information to gain a comprehensive picture of student-teacher competence, as well as to highlight strengths and needs. Improvements in teacher education assessment preparation and support, regular supervision, and the incorporation of input from several formative assessors help to enhance the assessment of teacher readiness.

References

1. Baier-Mosch, F., & Kunter, M. (2024). Pre-service teachers' knowledge about classroom management from university studies and own schooling experiences—Content and effects of their activation. *Frontiers in Education*, 9, 1365005.

- <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2024.1365005/full>
2. Bardelli, E., Ronfeldt, M., Mullman, H., & Brockman, S. L. (2019). Will Mentoring a Student Teacher Harm My Evaluation Scores Effects of Serving as a Cooperating Teacher on Evaluation Metrics. Grantee Submission. <https://www.academia.edu/download/85179929/ED598652.pdf>
 3. Barry, D. M., Diaz, J. M., Ferand, N. K., Myers, B. E., & Wysocki, A. F. (2021). Improving the Student Teaching Experience: A Delphi Study of Cooperating Teacher Needs. *Journal of Agricultural Education*, 62(4), 37–50.
 4. Bastian, K. C., Lys, D. B., & Whisenant, W. R. L. (2023). Does Placement Predict Performance? Associations Between Student Teaching Environments and Candidates' Performance Assessment Scores. *Journal of Teacher Education*, 74(1), 40–54. <https://doi.org/10.1177/00224871221105814>
 5. Bjørndal, C., Mathisen, P., Wennergren, A.-C., & Thornberg, F. (2024). Challenges of the supervision process in the teacher education practicum—A qualitative research review. *Teaching and Teacher Education*, 146, 104619.
 6. Brenner, C. A. (2022). Self-regulated learning, self-determination theory and teacher candidates' development of competency-based teaching practices. *Smart Learning Environments*, 9(1), 3. <https://doi.org/10.1186/s40561-021-00184-5>
 7. Brondyk, S. K. (2024). Engaging in continuous improvement: Implications for educator preparation programs and their mentors. *Frontiers in Education*, 8, 1259324. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2023.1259324/full>
 8. Carmi, T., & Tamir, E. (2023). An emerging taxonomy explaining mentor-teachers' role in student-teachers' practicum: What they do and to what end? *Teaching and Teacher Education*, 128, 104121.
 9. Chen, C. Y. (2024). Flipped classroom with case-based learning for improving preservice teachers' classroom management learning outcomes. *Teaching and Teacher Education*, 152, 104785. <https://doi.org/10.1016/j.tate.2024.104785>
 10. Diacopoulos, M. M., & Butler, B. M. (2020). What Do We Supervise for? A Self-Study of Learning Teacher Candidate Supervision. *Studying Teacher Education*, 16(1), 66–83. <https://doi.org/10.1080/17425964.2019.1690985>
 11. Dionne, L., Gagnon, C., & Petit, M. (2024). Articulating the supervisory functions of university supervisors in vocational education and training teaching internship. *Frontiers in Education*, 9, 1331348. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2024.1331348/full>
 12. Hojeij, Z., Baroudi, S., & Meda, L. (2023). Preservice teachers' experiences with classroom management in the virtual class: A case study approach. *Frontiers in Education*, 8, 1135763. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2023.1135763/full>
 13. Joseph, J., Ward, T., Hylton, S., & Gareis, C. (2020). Student Teaching Data. 1. <https://doi.org/10.17632/8j9vzvtj8x.1>
 14. Kang, H. (2021). The Role of Mentor Teacher-Mediated Experiences for Preservice Teachers. *Journal of Teacher Education*, 72(2), 251–263. <https://doi.org/10.1177/0022487120930663>
 15. Kelleci Alkan, Ö., Kulaksız, T., Aksoy, N. C., Durmaz, B. N., Uçar, F. M., Özcan, M., & Kalkavan, B. (2026). Simulation-based learning approach in teaching practicum to support pre-service teachers' teaching skills. *Education and Information Technologies*, 31(11), 3897–3923. <https://doi.org/10.1007/s10639-026-13951-z>
 16. Li, L., Hu, Y., Yang, X., Wu, M., Tao, P., Chen, M., & Yang, C. (2024). Enhancing pre-service teachers' classroom management competency in a large class context: The role of fully immersive virtual reality. *Humanities and Social Sciences Communications*, 11(1), 1050.
 17. Mahalingappa, L. (2023). Building teacher candidates' self-efficacy beliefs about the education of multilingual learners: A linguistically responsive approach. *Teaching and Teacher Education*, 131, 104190.

18. Matsko, K. K., Ko, E. K., Bressman, S., Mozer, L., & Winter, J. S. (2023). Two sides of a coin: Examining mentor and student teacher relationships during student teaching. *Teaching and Teacher Education*, 130, 104139.
19. Matsko, K. K., Wallace, J., Feiman-Nemser, S., Hammerness, K., & Kavanagh, S. S. (2024). Host or teacher of teaching? Examining mentors' tacit theories of student teacher learning. *Teaching and Teacher Education*, 138, 104410.
20. Maurício, P., & Valente, B. (2024). Synergy between lesson study and content representation in a preservice teacher practicum. *Teaching and Teacher Education*, 142, 104525.
21. Megawati, F., & Astutik, Y. (2018). TEACHING PRACTICUM: INVESTIGATING EFL PRE-SERVICE TEACHERS' SELF-EFFICACY. *English Review: Journal of English Education*, 7(1), 125–136.
22. Monney, N., Simard-Côté, A., Smith, J., & Gagné, A. (2022). Analyse des savoirs mobilisés par des stagiaires en enseignement pour évaluer leurs élèves. *McGill Journal of Education*, 57(3), 157–177.
23. Navarro-Ibáñez, M., & Cárdenas, V. G. (2026). Teacher self-efficacy and mentorship: Exploring the roles of Cooperating Teachers and University Supervisors in practicum experiences of preservice teachers. *Teaching and Teacher Education*, 176, 105531.
24. Nesje, K., & Lejonberg, E. (2022). Tools for the school-based mentoring of pre-service teachers: A scoping review. *Teaching and Teacher Education*, 111, 103609.
25. Ortmann, L. L., & Stumme-Berg, S. (2024). Developing responsive disciplinary literacies for student teaching in social studies. *Journal of Adolescent & Adult Literacy*, 67(4), 239–252. <https://doi.org/10.1002/jaal.1317>
26. Rushby, J. V., Klassen, R. M., Durksen, T. L., Pfaffel, A., & Bardach, L. (2025). Longitudinal effects of a scenario-based learning intervention on preservice teacher self-efficacy. *Teaching and Teacher Education*, 154, 104859.
27. Rusznyak, L., & Österling, L. (2024). What matters for competent teaching? A multinational comparison of teaching practicum assessment rubrics. *Teaching and Teacher Education*, 151, 104745.
28. Saltis, M. N., Giancaterino, B., & Pierce, C. (2021). Professional Dispositions of Teacher Candidates: Measuring Dispositions at a Large Teacher Preparation University to Meet National Standards. *The Teacher Educator*, 56(2), 117–131. <https://doi.org/10.1080/08878730.2020.1817217>
29. Seufert, C., Oberdörfer, S., Roth, A., Grafe, S., Lugin, J.-L., & Latoschik, M. E. (2022). Classroom management competency enhancement for student teachers using a fully immersive virtual classroom. *Computers & Education*, 179, 104410.