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Teacher-Identified Indicators of Competence in Peer Assessment Among Adolescents

ABSTRACT

This study aimed to identify the indicators of competence in peer assessment among adolescents as perceived by secondary school teachers in Tehran. A qualitative research design was employed involving semi-structured interviews with 17 secondary school teachers experienced in facilitating peer assessment. Participants were purposefully sampled from schools in Tehran. Data collection continued until theoretical saturation was reached. Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis supported by NVivo software to identify key themes and subthemes reflecting teacher-identified competence indicators. Analysis revealed three main themes representing competence in adolescent peer assessment: cognitive competence, social-emotional competence, and metacognitive and ethical competence. Cognitive competence included understanding assessment criteria, analytical skills, constructive feedback, self-reflection, consistency, justification, and task engagement. Social-emotional competence encompassed empathy, communication skills, conflict resolution, motivation to support peers, emotional regulation, and trustworthiness. Metacognitive and ethical competence involved ethical awareness, accountability, openness to feedback, reflective practice, and a peer learning orientation. Teachers emphasized that effective peer assessors demonstrate a dynamic interplay of these competencies, enabling them to provide reliable, respectful, and reflective assessments that contribute to both individual and peer learning. Competence in adolescent peer assessment is a multidimensional construct that extends beyond cognitive skills to include crucial social-emotional and metacognitive-ethical dimensions. Recognizing and nurturing these competencies is essential for teachers to foster meaningful and equitable peer assessment experiences. These findings provide a practice-informed framework to guide teacher training, assessment design, and policy development aimed at enhancing peer assessment efficacy in secondary education.

Keywords: Peer assessment, competence indicators, adolescents, qualitative research, secondary education, teacher perspectives, formative assessment, social-emotional skills, metacognition, educational assessment.

Introduction

Peer assessment has gained increasing prominence as an integral part of formative assessment practices, particularly within adolescent educational settings. The evolving focus on student-centered learning has seen educators shift from exclusively summative assessment methods to approaches that encourage active participation, reflection, and collaborative learning among students (Panadero, 2016). Peer assessment, broadly defined as the process in which students evaluate and provide feedback on the work of their peers, is posited to cultivate critical thinking, responsibility, and self-regulation—skills considered vital for lifelong learning and future workplace success (Topping, 2017; Panadero et al., 2018). Despite the theoretical appeal and empirical support for peer assessment, its effective implementation, especially among adolescents, requires a nuanced understanding of the indicators that signify student competence in performing these assessment roles (Gielen et al., 2011; Van Zundert et al., 2010).

The pedagogical rationale for integrating peer assessment in secondary education is anchored in several contemporary learning theories. Social constructivist perspectives emphasize the value of dialogic interactions, shared meaning-making, and collaborative knowledge construction, all of which are fostered through structured peer assessment processes (Vygotsky, 1978; Webb, 2013). When students are entrusted with evaluating peer work, they are not only required to internalize assessment criteria but also to articulate reasoning, negotiate meaning, and engage empathetically with others' perspectives (Nicol et al., 2014). These opportunities help bridge the gap between assessment as a passive, teacher-driven activity and assessment as an active, participatory learning process (Boud & Molloy, 2013). However, achieving these outcomes hinges upon the extent to which students possess or develop specific competencies that underpin effective peer assessment, including cognitive, social-emotional, metacognitive, and ethical skills (Panadero et al., 2018; Double et al., 2020).

Research has delineated various dimensions of competence in peer assessment, often highlighting the interplay of knowledge, skills, and dispositions required for quality engagement. From a cognitive standpoint, students must understand assessment criteria, apply analytical judgment, and provide evidence-based feedback (Gielen et al., 2011; Panadero & Broadbent, 2018). Yet, cognitive competence alone does not guarantee meaningful peer assessment. Social-emotional capacities such as empathy, communication, and trustworthiness are equally vital, as these qualities influence the tone and receptivity of peer feedback (Yu & Wu, 2016; Strijbos et al., 2015). Furthermore, metacognitive skills—such as self-reflection and the ability to learn from feedback—enable students to monitor and regulate their own assessment practices, ensuring ongoing growth and integrity (Panadero, 2017; Panadero et al., 2018).

Adolescence is a particularly salient developmental stage for cultivating these competencies. During this period, students experience rapid cognitive, social, and emotional growth, which can both enhance and complicate the peer assessment process (Steinberg, 2014). On one hand, adolescents are increasingly capable of abstract reasoning and perspective-taking, which can lead to more sophisticated, balanced assessments (Kuhn, 2015). On the other hand, heightened sensitivity to peer relationships and developing self-concept may render students vulnerable to anxiety, bias, or reluctance to offer honest feedback (Van Zundert et al., 2010; Strijbos et al., 2015). As such, it is critical for educators to recognize not only the benefits but also the developmental complexities that characterize adolescent peer assessment, and to identify reliable indicators of competence that can inform both instructional support and assessment design (Gielen et al., 2011; Topping, 2017).

Teachers play a pivotal role in mediating the effectiveness of peer assessment. Their beliefs, expectations, and observations shape the classroom culture and the quality of student engagement (Bennett, 2011; Sluijsmans et al., 2002). Several studies have underscored the importance of teacher guidance, scaffolding, and modeling in facilitating successful peer assessment experiences (Nicol & Macfarlane-Dick, 2006; Panadero, 2016). However, research has also revealed that teachers vary widely in how they define and recognize competence in peer assessment, often relying on implicit judgments and context-specific cues (Sluijsmans et al., 2002; Panadero & Broadbent, 2018). There remains a need for more systematic inquiry into the teacher-identified indicators that signal when an adolescent is capable of performing peer assessment tasks effectively and ethically.

Existing frameworks for peer assessment competence have often been conceptualized from the perspectives of researchers or policymakers, with less attention given to the everyday insights of classroom practitioners (Double et al., 2020). Teachers, by virtue of their sustained and nuanced observations of student behavior, are uniquely positioned to identify the subtle indicators that differentiate competent peer assessors from their less prepared peers (Bennett, 2011). These indicators may include not only observable behaviors, such as the use of assessment criteria or the provision of constructive feedback, but also more latent qualities like empathy, fairness, and openness to learning (Yu & Wu, 2016; Strijbos et al., 2015).

Empirical studies have begun to illuminate some of the teacher-identified characteristics of competent peer assessors. For example, Panadero and Broadbent (2018) found that teachers valued students who demonstrated consistency, reliability, and

the capacity to justify their judgments. Gielen et al. (2011) emphasized the importance of students' ability to provide balanced, specific feedback and to reflect on their own learning processes. Meanwhile, Yu and Wu (2016) highlighted the role of emotional regulation and the ability to manage peer relationships constructively. However, much of this research has been conducted in Western contexts, with less attention given to diverse cultural and educational settings such as Iran, where classroom norms, teacher expectations, and peer dynamics may differ considerably (Bagheri et al., 2022).

The current study addresses this gap by investigating the teacher-identified indicators of competence in peer assessment among adolescents within the context of Tehran's secondary schools. Using a qualitative methodology, this research draws upon the voices and experiences of teachers who have facilitated peer assessment in their classrooms. Through semi-structured interviews and thematic analysis, the study seeks to articulate a comprehensive set of indicators that reflect not only what teachers observe but also what they value in competent adolescent peer assessors.

This inquiry is particularly timely given the increasing emphasis on formative assessment and 21st-century skills in educational policy and practice (Boud & Molloy, 2013; Panadero, 2017). As schools endeavor to cultivate more autonomous, reflective, and socially responsible learners, understanding how teachers recognize and nurture competence in peer assessment becomes essential. By illuminating the teacher perspective, this study contributes to a more holistic, practice-oriented understanding of peer assessment competence and offers actionable insights for educators, policymakers, and researchers committed to advancing assessment literacy among adolescents.

The findings from this research have implications beyond the immediate classroom context. They offer a foundation for developing professional development programs aimed at enhancing teachers' assessment practices, for designing peer assessment rubrics and protocols that are sensitive to both cognitive and affective dimensions, and for informing policy initiatives that seek to integrate peer assessment into mainstream curricula. Ultimately, by articulating the indicators that teachers use to judge competence in peer assessment, this study aims to support the creation of more equitable, effective, and empowering assessment environments for adolescent learners.

Methods and Materials

Study Design and Participants

This study employed a qualitative research design aimed at exploring teacher-identified indicators of competence in peer assessment among adolescents. The qualitative approach was selected to allow for an in-depth understanding of the perspectives and lived experiences of teachers regarding adolescent peer assessment practices. The study sample consisted of 17 participants, all of whom were secondary school teachers actively involved in assessment processes within public and private schools in Tehran, Iran. Purposeful sampling was used to recruit teachers who had direct experience facilitating or observing peer assessment activities among adolescents. Inclusion criteria required participants to have at least three years of teaching experience and prior engagement with peer assessment strategies in their classrooms. Data collection continued until theoretical saturation was reached, with no new themes emerging from the interviews.

Data Collection

Data were collected through semi-structured, face-to-face interviews. An interview guide was developed based on existing literature and expert consultation, covering key domains such as perceptions of peer assessment, observed indicators of student competence in peer assessment, and contextual factors influencing these indicators. Each interview lasted approximately 45–60 minutes and was conducted in a private setting at the participant's school or via secure online platforms when preferred. All

interviews were audio-recorded with the participants' informed consent and subsequently transcribed verbatim for analysis. Ethical considerations, including confidentiality and voluntary participation, were strictly adhered to throughout the research process.

Data analysis

Thematic analysis was conducted to identify, analyze, and report patterns within the data. The analysis process followed the six-phase framework proposed by Braun and Clarke (2006), beginning with familiarization with the data and proceeding through coding, theme development, review, definition, and reporting. NVivo qualitative data analysis software (version 12) was utilized to facilitate the organization and management of the large volume of textual data. Initial codes were generated from the interview transcripts, and related codes were grouped into overarching themes and subthemes through iterative review and constant comparison. To ensure credibility and trustworthiness, coding decisions and theme development were discussed among the research team, and member checking was conducted with a subset of participants to validate the findings. Data collection and analysis continued in parallel until theoretical saturation was achieved, ensuring that the full breadth of teacher perspectives on indicators of competence in adolescent peer assessment was captured.

Findings and Results

Cognitive Competence

Understanding Assessment Criteria.

Teachers consistently highlighted the importance of students' clear grasp of assessment criteria as a primary indicator of competence in peer assessment. Many reported that competent adolescents demonstrated familiarity with rubrics, could articulate standards, and referenced criteria when reviewing peer work. As one teacher explained, "The students who do well in peer assessment always refer back to the rubric before making any comments." Another noted, "When students can explain what each criterion means, their feedback becomes much more accurate and helpful."

Analytical Skills.

Analytical thinking was regarded as vital for effective peer assessment. Teachers described competent students as those who could identify both strengths and weaknesses in their peers' work, support their judgments with evidence, and compare multiple pieces of work thoughtfully. One participant remarked, "My best students can spot subtle differences in essays and explain exactly why one is stronger than the other."

Constructive Feedback.

Providing constructive, balanced feedback was widely cited as an essential indicator. Teachers noted that competent peer assessors gave specific suggestions for improvement, offered praise alongside critique, and focused their comments on actionable steps. "What I appreciate most," one teacher shared, "is when a student says, 'Your introduction is strong, but your argument could be clearer if you did X.' That shows real understanding."

Self-Reflection.

Self-reflection was identified as a key aspect of cognitive competence. Teachers observed that skilled students recognized their own biases, compared their assessments with others, and adjusted their judgments upon reflection. One interviewee described, "Sometimes, after discussing with others, a student realizes they were too strict or too lenient and are willing to change their score."

Consistency in Judgment.

Reliability and consistency were noted as marks of competence, with teachers looking for students who maintained stable standards across different peer assessments and minimized deviation in their judgments. As one participant put it, “The most competent assessors don’t swing between extremes—they’re steady and fair, no matter whose work they’re reviewing.”

Justification of Decisions.

Teachers emphasized the ability to justify assessment decisions using specific examples from peer work. Competent students were described as those who provided clear rationale and could defend their assessment choices. One teacher stated, “If a student says, ‘I gave this a lower score because the evidence wasn’t clear in paragraph two,’ that’s what I want to see.”

Task Engagement.

Finally, engagement with the assessment task itself was seen as a significant indicator. Competent peer assessors read their peers’ work carefully, paid attention to detail, and completed assessment tasks thoroughly. “You can always tell when a student has really taken their time—they pick up on little things others miss,” reported one participant.

Social-Emotional Competence

Empathy.

Empathy emerged as a central component, with teachers describing competent students as those who demonstrated genuine perspective-taking, recognized peer effort, and were sensitive to their classmates’ feelings. “It’s obvious when a student really cares about not hurting their friend’s feelings, even as they point out mistakes,” said one interviewee.

Communication Skills.

Effective communication was repeatedly mentioned, with a focus on clarity, respectful language, and the use of a positive tone. Competent students articulated their feedback clearly and chose words that encouraged rather than discouraged their peers. One teacher observed, “Some students are really good at framing things positively, like saying, ‘This part is great—maybe you could add more examples here.’”

Conflict Resolution.

Teachers pointed to the ability to manage disagreements and negotiate differences as important, especially when peer assessment led to conflicting views. “There are times when students disagree on marks, and those who can talk it out calmly are the ones who make peer assessment work,” noted one participant.

Motivation to Support Peers.

A willingness to support classmates and contribute positively to group learning was identified as a further indicator. Competent peer assessors were often those who volunteered feedback, celebrated peer progress, and maintained a collaborative attitude. As one teacher put it, “Some students just naturally want to see their friends succeed and will go out of their way to help.”

Emotional Regulation.

Managing emotional responses, such as frustration or impatience, was emphasized as an essential trait. Teachers described competent assessors as patient, able to avoid negative reactions, and capable of self-control during assessment discussions. One participant said, “I notice that students who stay calm even if their own work is criticized tend to give better feedback themselves.”

Trustworthiness.

Maintaining confidentiality and being reliable were also highlighted. Teachers valued students who could be trusted to assess fairly and honestly, and who respected the privacy of peer work. “Trust is huge,” said one teacher, “because if students don’t feel safe, they won’t take the assessment seriously.”

Metacognitive & Ethical Competence

Ethical Awareness.

Fairness and impartiality were repeatedly cited as fundamental. Teachers observed that competent assessors avoided favoritism, respected diversity, and were honest in their marking. As one participant shared, “I’m always looking for students who treat everyone equally, no matter their friendship groups.”

Accountability.

Taking responsibility for one’s assessments and learning from mistakes was seen as a distinguishing feature. Teachers appreciated students who owned their decisions, admitted errors, and showed a willingness to improve. One interviewee remarked, “It’s impressive when a student can say, ‘I think I was wrong in how I scored this and I want to fix it.’”

Openness to Feedback.

Teachers noted that competent students were receptive to critique from both peers and teachers, willing to revise their work, and displayed curiosity about improving their own assessment practices. “The best peer assessors are the ones who want to get better themselves and don’t get defensive,” explained a participant.

Reflective Practice.

Engaging in ongoing reflection and striving for improvement were important indicators of competence. Teachers looked for students who asked for clarification, set goals, and actively learned from feedback experiences. “Some students will come after class to ask how they can improve their feedback skills, which is a great sign,” commented one teacher.

Peer Learning Orientation.

Finally, valuing co-construction and reciprocal learning was a strong indicator of competence. Teachers noted that students who embraced shared responsibility and appreciated others’ ideas contributed to a more effective peer assessment environment. “You see the difference when students see assessment as a team effort, not just something the teacher forces them to do,” said one interviewee.

Discussion and Conclusion

This study explored teacher-identified indicators of competence in peer assessment among adolescents, revealing a multifaceted construct encompassing cognitive, social-emotional, metacognitive, and ethical competencies. The findings highlight that effective peer assessment competence is not solely determined by students’ cognitive skills such as understanding criteria and analytical judgment but is deeply intertwined with social-emotional awareness and reflective practices. These results underscore the complex nature of peer assessment as a learning and evaluative process in adolescent classrooms.

The prominence of **cognitive competence** in teachers’ perceptions aligns with prior research emphasizing the importance of students’ clear understanding and application of assessment criteria (Gielen et al., 2011; Panadero & Broadbent, 2018). Teachers in this study underscored the necessity for students to grasp rubrics, provide justified and consistent judgments, and engage thoroughly with assessment tasks. This cognitive foundation is essential because peer assessors must make credible, evidence-based evaluations to support both their learning and that of their peers (Panadero et al., 2018). The identified indicators of analytical skills, justification of decisions, and consistency resonate with previous findings suggesting that reliability and validity in peer assessment depend on students’ cognitive abilities to evaluate work critically and coherently (Van Zundert et al., 2010; Gielen et al., 2011).

Beyond cognitive skills, the study foregrounded **social-emotional competence** as a critical domain. Teachers reported that empathy, effective communication, motivation to support peers, and emotional regulation significantly impact the quality and effectiveness of peer feedback. These findings are consistent with the literature that highlights the affective and interpersonal dimensions of peer assessment, especially among adolescents who are highly sensitive to peer relationships and social

evaluation (Strijbos et al., 2015; Yu & Wu, 2016). The ability to provide feedback in a respectful and constructive manner, while managing emotional responses, helps create a safe and supportive peer learning environment, which in turn fosters greater engagement and learning gains (Topping, 2017). The findings also corroborate Panadero's (2016) argument that peer assessment success hinges on social and emotional skills that facilitate open, respectful, and empathetic communication.

The study's emphasis on **metacognitive and ethical competence** further enriches the understanding of peer assessment. Teachers identified ethical awareness, accountability, openness to feedback, and reflective practice as integral indicators of competence. This echoes the growing recognition in educational research that metacognition—students' ability to think about their own thinking and learning—is fundamental for self-regulation and effective engagement in assessment processes (Panadero, 2017; Panadero et al., 2018). Ethical dimensions such as fairness and honesty also align with Bennett's (2011) call for assessment practices that promote integrity and equity. The interplay between metacognitive and ethical competencies suggests that competent peer assessors are reflective learners who take responsibility for their judgments and continuously seek improvement, reinforcing the dual role of peer assessment as both learning and evaluative activity (Boud & Molloy, 2013).

The specific context of adolescence adds another layer of complexity. Consistent with developmental psychology literature, teachers noted that adolescents' growing cognitive capacities enable sophisticated assessment, but their social-emotional vulnerabilities may hinder honest or critical feedback (Steinberg, 2014; Kuhn, 2015). The findings validate concerns raised by Van Zundert et al. (2010) about the potential influence of peer dynamics and affect on assessment validity and highlight the importance of teacher facilitation to scaffold these competencies effectively. By identifying clear behavioral and attitudinal indicators, teachers can better support adolescent students in navigating these developmental challenges within peer assessment contexts.

Importantly, the study contributes to bridging a gap in the literature by emphasizing **teacher perspectives** on competence indicators, particularly in the Iranian secondary education context. While much existing research has focused on theoretical frameworks or student perspectives, this study foregrounds teachers' lived experience and tacit knowledge as a rich resource for understanding competence. The culturally contextualized insights resonate with Bagheri et al.'s (2022) findings that local educational practices and values shape peer assessment experiences and highlight the need for context-sensitive frameworks.

Collectively, these findings suggest that competence in adolescent peer assessment is best conceptualized as a dynamic, integrative construct that requires cognitive skills, social-emotional intelligence, and reflective ethical awareness. The results reinforce the argument that peer assessment should not be treated as a mechanical task but as a developmental process requiring deliberate instruction, modeling, and ongoing teacher support (Nicol & Macfarlane-Dick, 2006; Panadero, 2016). Educators must recognize and nurture these multidimensional competencies to realize the full pedagogical potential of peer assessment and promote equitable and effective learning environments.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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