



Teacher Professional Development and Instructional Self-Efficacy: Exploring Their Influence on Reflective Practice, Classroom Management, and Teaching Effectiveness

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Abstract

Teacher professional development matters when it changes what educators can accomplish in classrooms rather than merely increasing participation in courses. This study analysed OECD TALIS 2024 indicators and triangulated them with international research on professional learning and teacher self-efficacy. The analysis focused on professional-learning impact, self-efficacy in classroom management and instruction, reflective assessment practices, adaptive teaching, and fulfilment of lesson aims. Across participating education systems, 84% of teachers reported confidence in calming disruptive students, 87% in getting students to follow rules, 80% in using varied assessment tasks, and 67% in motivating students with low interest. Only 55% reported that recent professional learning had a strong positive impact on their teaching. Teachers with strong beliefs that they could help every student progress were four times more likely to report fulfilling adaptive-teaching aims, while confidence in supporting social-emotional learning corresponded to a sixfold likelihood. The findings indicate that professional development should be judged by perceived impact, reflective transfer, and strengthened instructional self-efficacy rather than attendance alone.

Keywords: Classroom management, Professional development, Reflective practice, Teacher self-efficacy, Teaching effectiveness.



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INTRODUCTION

Teacher professional development has become an important component of educational improvement policies, particularly in efforts to strengthen instructional quality, teacher competence, and responsiveness to increasingly diverse classroom demands. However, participation in professional-development activities does not necessarily indicate that teachers acquire applicable knowledge or implement meaningful changes in their instructional practices. Effective professional learning requires coherent content, active participation, collaborative engagement, instructional modelling, constructive feedback, and sustained opportunities to apply acquired competencies within authentic teaching environments (Kennedy, 2016). Research further indicates that professional-development effectiveness depends not only on program design but also on teachers' prior experiences, professional beliefs, and institutional conditions influencing instructional implementation (Darling-Hammond et al., 2017). Programs emphasizing short-term participation without structured opportunities for experimentation and follow-up may therefore provide limited support for sustained pedagogical improvement. Desimone and Garet (2015) emphasize that coherence, active learning, and continuing professional engagement contribute to the practical relevance of teacher-development initiatives. These considerations suggest that professional development should be evaluated through its relationship with instructional capabilities and classroom application rather than primarily through participation rates or the number of training activities completed.

Teacher self-efficacy provides a theoretical perspective for examining why professional-development experiences may produce different instructional responses among teachers operating within comparable educational environments. This construct refers to teachers' beliefs regarding their

capacity to organize and execute instructional actions necessary to accomplish particular educational tasks, including classroom management, instructional delivery, and student engagement (Tschannen-Moran & Hoy, 2001). Such beliefs influence how educators interpret classroom difficulties, select pedagogical strategies, and sustain instructional efforts when confronted with challenging learning conditions. A comprehensive synthesis by Zee and Koomen (2016) identifies relationships between teacher self-efficacy, classroom processes, professional well-being, and student academic adjustment, although the magnitude and direction of these relationships differ across research contexts. Meta-analytic evidence also associates self-efficacy with teaching effectiveness, suggesting that teachers' perceived instructional competence represents a relevant dimension of professional performance (Klassen & Tze, 2014). Longitudinal findings indicate that self-efficacy and instructional quality may develop reciprocally, as successful classroom experiences strengthen confidence while stronger confidence may encourage more effective pedagogical engagement (Holzberger et al., 2013). Consequently, understanding teacher self-efficacy requires attention to specific instructional responsibilities rather than treating professional confidence as a uniform characteristic across classroom situations.

Professional-development experiences may contribute to stronger instructional self-efficacy by expanding pedagogical knowledge, facilitating practical experimentation, and providing opportunities for teachers to evaluate their instructional performance. Structured coaching is particularly relevant because it combines observation, instructional demonstration, individualized feedback, and repeated opportunities to refine classroom practices. A meta-analysis conducted by Kraft et al. (2018) identified positive effects of teacher coaching on instructional quality and student achievement, although implementation intensity and program scale influenced the magnitude of these outcomes. Professional learning communities may similarly support teacher development through collaborative inquiry, shared instructional responsibilities, and collective examination of teaching challenges (Admiraal et al., 2021). These arrangements can provide opportunities to exchange professional knowledge and assess alternative teaching approaches in relation to specific classroom circumstances. Informal professional learning, including professional consultation, observation, experimentation, and workplace reflection, further contributes to teachers' continuing development beyond formal training programs (Kyndt et al., 2016). Nevertheless, the extent to which these learning experiences strengthen self-efficacy and instructional practices depends on their relevance to teachers' professional needs and the institutional support available for classroom implementation.

Reflective practice constitutes another important dimension of instructional improvement because professional learning requires teachers to examine classroom evidence and reconsider the effectiveness of their pedagogical decisions. Reflection involves evaluating the relationship between instructional intentions, implemented teaching strategies, student responses, and achieved learning objectives rather than simply documenting classroom experiences. Opfer and Pedder (2011) conceptualize teacher professional learning as a complex process involving interactions among individual characteristics, learning activities, and organizational contexts. Within this perspective, reflective assessment practices can support instructional adjustment by enabling teachers to identify learning difficulties and evaluate the appropriateness of their teaching approaches. Assessment and feedback are particularly relevant because they generate information that teachers and students can use to reconsider learning progress and subsequent instructional priorities. Research on feedback literacy emphasizes that opportunities for student self-assessment and evaluative judgment can support more active engagement with assessment information (Winstone et al., 2022). Accordingly, examining assessment practices alongside teacher self-efficacy may provide a more comprehensive understanding of how professional learning relates to reflective instruction, classroom management, and perceived teaching effectiveness.

The Teaching and Learning International Survey (TALIS) 2024 provides an international evidence base for investigating these relationships through information collected from approximately 280,000 teachers and school leaders across 55 education systems. The OECD report presents indicators concerning teacher professional development, classroom-management confidence, instructional self-efficacy, student engagement, assessment practices, and reported fulfilment of lesson aims (OECD, 2025). These indicators offer opportunities to examine differences between teachers' perceived capabilities and their reported instructional experiences across educational settings. Previous TALIS findings have contributed to understanding teachers' professional learning and working conditions,

establishing an international reference point for examining professional-development experiences (OECD, 2019). However, the availability of multiple indicators does not automatically explain how professional-learning impact, self-efficacy, reflective practices, and instructional effectiveness relate to one another conceptually. Cross-national research also demonstrates that teacher self-efficacy varies according to individual, student-group, school, and leadership characteristics, indicating the importance of contextual interpretation when examining aggregated international findings (Fackler & Malmberg, 2016). Integrating these dimensions within a single analytical framework may therefore clarify differences in reported instructional confidence and identify professional-development priorities that require attention beyond conventional participation measures.

Despite extensive research concerning teacher professional development and self-efficacy, an analytical gap remains in understanding how reported professional-learning impact aligns with specific instructional capabilities, reflective assessment practices, and fulfilment of lesson objectives within a common international evidence base. Existing studies have examined professional-development effectiveness, instructional confidence, and classroom practices through different theoretical and empirical approaches, but their findings do not independently establish how these dimensions should be interpreted together (Kennedy, 2016; Zee & Koomen, 2016). The present study addresses this gap through descriptive secondary analysis of TALIS 2024 indicators supported by theory-guided triangulation with established international research. Specifically, it examines differences in classroom-management, instructional, and student-engagement self-efficacy; evaluates reported assessment and feedback practices; and interprets associations between professional-learning impact, task-specific confidence, and lesson-aim fulfilment. Its contribution lies in integrating these dimensions into a practice-oriented analytical framework that identifies potential priorities for professional development based on perceived instructional needs and opportunities for reflective transfer. Consistent with research emphasizing the characteristics of effective teacher learning, this framework considers practical application, professional collaboration, and sustained reflection as relevant components of instructional improvement (Sims et al., 2021). Because the study relies on published aggregate indicators and previously reported statistical relationships, its conclusions are intended to inform professional-development priorities and subsequent empirical investigation rather than establish causal effects on teaching quality or student achievement.

RESEARCH METHODS

This study employed a descriptive secondary analysis approach using publicly available indicators from the Organisation for Economic Co-operation and Development (OECD) report, *Results from TALIS 2024: The State of Teaching*. The Teaching and Learning International Survey (TALIS) 2024 involved approximately 280,000 teachers and school leaders across 55 education systems, providing comparative information on professional development, instructional practices, teacher self-efficacy, and professional working conditions. The study utilized published aggregate findings rather than individual survey responses to examine patterns connecting professional learning with perceived instructional capabilities and teaching effectiveness. This approach was considered appropriate because the research aimed to synthesize existing international evidence rather than estimate new statistical relationships or investigate a particular national education system. The analytical scope focused on how teachers perceived their capacity to manage classrooms, engage students, implement instructional strategies, and evaluate learning outcomes. All quantitative information was derived from OECD publications to maintain consistency with the original survey reporting framework (OECD, 2025).

Data selection concentrated on five interconnected dimensions: classroom-management self-efficacy, instructional self-efficacy, student-engagement self-efficacy, assessment and feedback practices, and perceived professional-learning impact. Relevant indicators were identified within the OECD report sections addressing teaching for today's world, teacher professional outcomes, and the development of teacher expertise. Classroom-management indicators represented teachers' perceived ability to regulate student behaviour and maintain productive learning environments, whereas instructional and engagement indicators reflected confidence in delivering effective lessons and responding to diverse learning needs. Assessment-related indicators described the reported frequency of feedback, learning evaluation, and student self-assessment, while professional-development indicators captured teachers' perceptions of instructional benefits from recent learning activities. Published regression interpretations concerning teacher self-efficacy and lesson-aim fulfilment were

also considered to contextualize the descriptive findings without independently reproducing the statistical models. The analytical domains and their corresponding indicators are summarized in Table 1.

Table 1. Analytical Domains and Indicators Used in the Secondary Analysis

Analytical domain	Selected indicators	Analytical purpose
Classroom-management self-efficacy	Calming disruptive students; obtaining compliance with classroom rules	Examine perceived behavioural-management capability
Instructional self-efficacy	Using varied assessment tasks; promoting critical thinking; formulating effective questions	Identify perceived capacity for instructional delivery and cognitive engagement
Student-engagement self-efficacy	Motivating low-interest students; supporting individual progress and social-emotional learning	Examine confidence in motivational support and instructional adaptation
Assessment and feedback practices	Immediate feedback; assessment of learning; improvement-oriented feedback; student self-assessment	Describe reported assessment practices relevant to reflective teaching
Professional-learning impact	Perceived positive impact of recent professional learning; reported relationships with lesson-aim fulfilment	Examine perceived transfer of professional development into instructional practice

The classification presented in Table 1 established a consistent framework for organizing the selected TALIS indicators according to their relevance to the research objectives. Although the domains were analysed separately for descriptive clarity, they were interpreted as interconnected dimensions of teachers' professional capabilities and instructional experiences. The analysis initially compared published percentages to identify areas of relatively high and low reported confidence or practice across the selected indicators. Particular attention was directed toward differences between classroom-management confidence, student motivation, assessment implementation, and perceived professional-learning impact. These comparisons were used to identify descriptive patterns rather than to construct composite scores, establish performance rankings among education systems, or estimate relationships beyond those reported by OECD. Consequently, the interpretation remained limited to the definitions, statistical information, and reporting conventions provided in the original TALIS documentation (OECD, 2025).

The descriptive analysis was complemented by theory-guided triangulation using established international research on teacher self-efficacy, professional development, reflective practice, instructional coaching, and professional learning communities. Relevant meta-analyses, empirical investigations, and conceptual reviews were examined to interpret the educational significance of the observed TALIS patterns. Research on teacher efficacy informed the distinction between classroom management, instructional competence, and student engagement (Tschannen-Moran & Hoy, 2001; Zee & Koomen, 2016), while professional-development scholarship provided a basis for examining the relationship between learning experiences and classroom application (Kennedy, 2016; Kraft et al., 2018). Literature on collaborative professional learning and reflective practice further supported the interpretation of assessment-related practices and organizational conditions influencing instructional improvement (Kyndt et al., 2016; Admiraal et al., 2021). The triangulation process therefore connected reported survey indicators with established theoretical explanations without treating findings from separate studies as directly comparable statistical estimates. This approach supported an integrated interpretation of professional learning, self-efficacy, reflective practices, and perceived teaching effectiveness.

Methodological limitations were considered throughout the interpretation of the findings. TALIS indicators are primarily based on teachers' self-reported perceptions and practices, which may be influenced by differences in professional expectations, institutional environments, and response tendencies across education systems. Accordingly, reported confidence was not considered equivalent to independently observed teaching competence, and perceived fulfilment of lesson aims was distinguished from objectively measured student achievement. Similarly, the OECD regression findings

were interpreted as statistical associations rather than evidence that professional development or self-efficacy directly caused improvements in instructional outcomes. The study did not access individual-level TALIS microdata, re-estimate regression coefficients, introduce additional statistical controls, or produce unpublished country-specific estimates. Because the research relied exclusively on publicly accessible aggregate information and did not involve direct interaction with human participants or access to identifiable personal records, no new participant recruitment or primary data collection was undertaken. These methodological boundaries were maintained to ensure that the conclusions remained consistent with the available evidence and the descriptive objectives of the research.

RESULTS AND DISCUSSION

Instructional Self-Efficacy and Classroom Management Capacity

TALIS 2024 indicates that classroom-management self-efficacy represents one of the strongest dimensions of teachers' perceived professional capabilities across participating education systems. Approximately 84% of teachers reported confidence in calming disruptive or noisy students, while 87% believed they could encourage students to follow established classroom rules (OECD, 2025). These findings suggest that a substantial proportion of teachers perceive themselves as capable of maintaining behavioural conditions conducive to instructional activities. Classroom management constitutes an essential component of professional competence because effective instruction requires environments where students can participate without persistent behavioural disruption. Nevertheless, teachers' confidence in regulating classroom behaviour should not automatically be interpreted as evidence of equivalent competence in facilitating meaningful academic engagement. The distinction is particularly relevant because successful behavioural management may establish instructional stability without necessarily improving students' motivation, participation, or understanding. Accordingly, classroom-management self-efficacy should be examined as a specific professional capability that interacts with broader instructional and student-engagement responsibilities (Tschannen-Moran & Hoy, 2001).

Teachers reported comparatively lower confidence in several instructional and engagement-related responsibilities, indicating variation across specific dimensions of professional self-efficacy. Approximately 80% expressed confidence in using different assessment tasks, whereas only 67% believed they could motivate students who demonstrated limited interest in schoolwork (OECD, 2025). The twenty-percentage-point difference between confidence in maintaining classroom rules and motivating disengaged students illustrates an important distinction between behavioural regulation and motivational support. Although classroom order may facilitate learning activities, students' willingness to participate depends on instructional relevance, perceived competence, learning expectations, and opportunities for meaningful engagement. Research on learner engagement emphasizes the importance of instructional interaction and supportive learning practices in sustaining participation, suggesting that engagement cannot be reduced to behavioural compliance (Martin & Borup, 2022). Teachers may therefore require different pedagogical strategies when addressing disruptive behaviour and when encouraging students who remain academically disengaged despite orderly classroom conditions. This discrepancy indicates that professional development should place greater emphasis on instructional motivation alongside established classroom-management competencies.

Teacher self-efficacy has consistently been conceptualized as a multidimensional construct encompassing classroom management, instructional strategies, and student engagement. Tschannen-Moran and Hoy (2001) distinguish these dimensions because teachers may demonstrate confidence in particular instructional responsibilities while experiencing uncertainty in others. The TALIS 2024 findings correspond with this theoretical distinction by showing stronger perceived competence in classroom regulation than in motivating students with limited academic interest. Such variation suggests that overall measures of professional confidence may conceal instructional challenges requiring more specialized preparation. Professional-development activities emphasizing behavioural management alone may consequently strengthen classroom control without sufficiently improving teachers' ability to address motivational difficulties or adapt instructional methods. Effective professional learning should therefore recognize that different teaching responsibilities require distinct combinations of pedagogical knowledge, practical experience, and situation-specific judgment. This approach supports the development of task-specific efficacy beliefs grounded in teachers' ability to respond appropriately to particular classroom demands rather than relying on generalized perceptions of professional competence.

Meta-analytic research establishes an association between teacher self-efficacy and teaching effectiveness, although the strength of this relationship depends on research design, measurement procedures, and educational context. Klassen and Tze (2014) demonstrate that efficacy beliefs constitute a relevant psychological dimension of professional performance, while emphasizing the importance of methodological considerations in interpreting effectiveness outcomes. Teachers who perceive themselves as capable of addressing instructional challenges may be more willing to experiment with alternative strategies and sustain professional effort when initial approaches produce limited results. However, strong confidence does not independently guarantee the accuracy of instructional decisions or the effectiveness of classroom implementation. The practical significance of self-efficacy therefore lies in its potential relationship with persistence, pedagogical adjustment, and responsiveness to emerging learning difficulties. Professional-development programs should support these processes by connecting confidence with demonstrable instructional skills and opportunities to evaluate the consequences of teaching decisions. Such alignment may help prevent situations in which teachers report high professional confidence without possessing sufficient strategies to address complex student-learning needs.

Longitudinal evidence further indicates that teacher self-efficacy and instructional quality may influence one another through reciprocal developmental processes. Holzberger et al. (2013) identify relationships between teachers' efficacy beliefs and instructional quality over time, suggesting that confidence and teaching experiences should not be examined as entirely independent characteristics. Teachers with stronger efficacy beliefs may approach challenging instructional situations with greater persistence, while successful teaching experiences can subsequently reinforce confidence in their professional capabilities. This reciprocal relationship has implications for the organization of professional development because improvements in efficacy are more meaningful when connected to opportunities for classroom implementation. Activities involving guided practice, observation, instructional feedback, and systematic reflection may provide teachers with evidence concerning the effectiveness of newly acquired teaching strategies. Such experiences can also reveal inconsistencies between perceived competence and actual instructional difficulties, enabling teachers to identify areas requiring further professional learning. Consequently, professional development should establish continuing cycles of instructional experimentation and evidence-informed improvement rather than treating confidence development as an isolated psychological objective.

The TALIS 2024 indicators also reveal substantial perceived capability in instructional activities associated with cognitive engagement and classroom questioning. Approximately 80% of teachers expressed confidence in helping students develop critical-thinking skills, while 88% reported that they could formulate effective questions to support learning (OECD, 2025). These percentages suggest that many teachers perceive themselves as capable of implementing instructional strategies intended to stimulate reasoning and encourage intellectual participation. Nevertheless, confidence in questioning and critical-thinking facilitation does not necessarily establish the quality, complexity, or effectiveness of these practices during actual classroom instruction. Curriculum expectations, assessment pressures, instructional time, and differences in student readiness may influence whether teachers can translate their perceived capabilities into meaningful cognitive engagement. Kunter et al. (2013) emphasize that instructional quality emerges from interactions among professional knowledge, motivational orientations, beliefs, and situation-specific teaching competencies. The TALIS findings should therefore be interpreted as indicators of perceived instructional readiness that require complementary evidence from classroom observations and student-learning processes before stronger conclusions about actual teaching effectiveness can be established.

Adaptive teaching introduces additional demands because effective instructional decisions must account for differences in students' abilities, prior knowledge, learning preferences, and educational support requirements. Teachers must identify relevant learning difficulties, select appropriate pedagogical responses, and adjust instructional activities without unnecessarily reducing academic expectations or limiting opportunities for participation. Research on differentiated instruction identifies professional preparation, active learning, collaboration, and reflective practice as important elements supporting teachers' readiness to address heterogeneous classroom needs (Langelaan et al., 2024). These findings suggest that adaptive competence requires more than familiarity with general instructional methods because teachers must determine which strategies are appropriate under particular learning conditions. Self-efficacy becomes educationally relevant when confidence is supported by diagnostic

capabilities, flexible instructional planning, and practical experience with differentiated teaching strategies. Professional development should therefore provide opportunities to examine student-learning evidence, rehearse alternative instructional approaches, and evaluate the effectiveness of adaptations in authentic classroom settings. Such preparation may help teachers translate existing confidence in classroom management and instructional questioning into more responsive practices for students requiring different forms of academic support.

The relationship between instructional confidence and adaptive teaching also requires consideration of inclusive-education responsibilities and the diversity of contemporary classrooms. Beginning teachers, in particular, may encounter instructional difficulties when supporting students whose learning needs differ from those represented in conventional teacher-preparation experiences. Rosenberg et al. (2024) highlight the importance of cognitive, practical, and professional preparation for developing readiness to teach in inclusive educational environments. These considerations indicate that broad international self-efficacy percentages may not fully represent teachers' perceived preparedness for specific instructional circumstances involving disability, linguistic diversity, or socio-economic disadvantage. Confidence in managing a typical classroom situation may coexist with uncertainty about designing accessible learning activities or responding to particular student-support requirements. Professional-development initiatives should consequently incorporate differentiated instructional planning, collaborative problem-solving, and opportunities to evaluate teaching strategies across diverse learner populations. Interpreting TALIS indicators through this perspective reinforces the need to distinguish general professional confidence from the specialized competencies required for equitable and inclusive instructional practice.

The combined findings indicate an uneven distribution of teacher self-efficacy across classroom-management, instructional, and student-engagement responsibilities. Confidence in maintaining classroom rules and developing effective questions was comparatively strong, whereas motivating students with limited interest represented a more challenging dimension of perceived professional capability. This difference suggests that professional-development priorities should be informed by specific instructional needs rather than assuming that all dimensions of teacher competence require equivalent intervention. Programs concentrating exclusively on basic classroom regulation may provide limited additional value for teachers who already report strong management confidence, particularly when motivational engagement and instructional adaptation remain less developed. Professional learning involving practical rehearsal, collaborative inquiry, guided observation, and feedback may offer more relevant opportunities to strengthen these capabilities through direct engagement with classroom challenges (Darling-Hammond et al., 2017). Nevertheless, the self-reported nature of TALIS indicators requires caution because differences in confidence do not independently establish differences in observed teaching quality or intervention effectiveness. The selected indicators summarized in Table 2 provide a comparative overview of teachers' perceived capabilities, assessment practices, and professional-learning experiences, establishing an empirical basis for identifying potential areas of professional-development improvement.

Table 2. Selected TALIS 2024 Indicators of Teacher Capability and Practice

Indicator	Teachers (%)
Calm disruptive/noisy student	84
Get students to follow rules	87
Use varied assessment tasks	80
Motivate low-interest students	67
Help students think critically	80
Craft good questions	88
Immediate feedback while working	81
Assess learning of presented material	78
Feedback on areas for improvement	78
Ask students to self-assess progress	48
Professional learning had strong positive impact	55

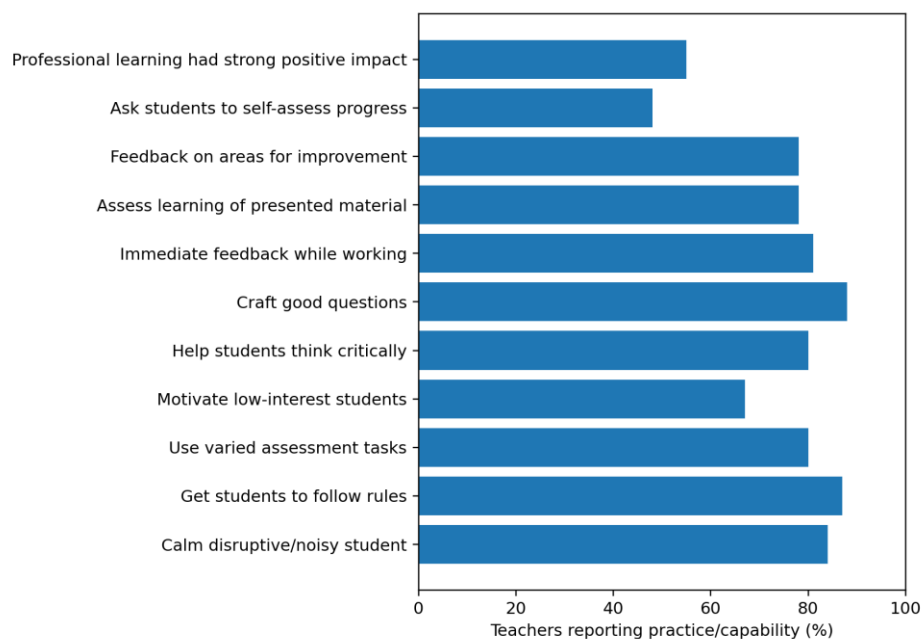


Figure 1. Selected TALIS 2024 Teacher Self-Efficacy, Assessment, and Professional-Learning Indicators

Figure 1 illustrates differences across the selected TALIS 2024 indicators, highlighting the contrast between teachers' perceived instructional capabilities and reported professional-learning experiences. Confidence in crafting effective questions (88%) and maintaining classroom rules (87%) exceeds confidence in motivating students with limited interest (67%), indicating that behavioural management does not necessarily correspond to motivational engagement. The relatively low frequency of student self-assessment (48%) further suggests that opportunities for learner participation in evaluating academic progress remain less prevalent than teacher-directed assessment practices. Similarly, the proportion reporting a strong positive impact of professional learning (55%) indicates that participation in development activities does not consistently translate into substantial perceived instructional benefits (OECD, 2025). Although these indicators represent different dimensions and cannot be treated as equivalent measures of teaching effectiveness, their comparative distribution identifies areas requiring more targeted professional support. Strengthening motivational strategies, reflective assessment, and adaptive instruction may help teachers connect existing classroom-management confidence with more responsive pedagogical practices. These findings reinforce the importance of designing professional development around task-specific competencies, practical implementation, and evidence-informed instructional reflection rather than relying exclusively on generalized measures of teacher confidence (Tschannen-Moran & Hoy, 2001; Darling-Hammond et al., 2017).

Reflective Practice, Assessment, and Professional Learning Transfer

Assessment practices constitute an important dimension of reflective teaching because they enable educators to collect information about student learning and evaluate the appropriateness of instructional decisions. TALIS 2024 indicates that approximately 81% of teachers frequently observe students during classroom activities and provide immediate feedback, while 78% use assessment procedures to determine whether instructional material has been understood (OECD, 2025). An equivalent proportion of teachers reported providing oral or written feedback identifying areas where students could improve their performance. These findings suggest that assessment and feedback are commonly reported components of classroom instruction across participating education systems, particularly in activities involving direct monitoring of student progress. However, the frequency of assessment practices does not independently establish whether the resulting information is systematically incorporated into subsequent instructional planning or pedagogical adjustment.

Reflective teaching requires teachers to interpret assessment evidence, identify recurring learning difficulties, and determine whether existing instructional strategies adequately address students' academic needs. Consequently, assessment practices should be examined not only as mechanisms for monitoring achievement but also as potential sources of evidence supporting continuous instructional improvement and professional reflection.

Student self-assessment represents a comparatively less frequent instructional practice within the TALIS 2024 findings, indicating differences between teacher-directed evaluation and opportunities for learner participation. Only 48% of teachers reported frequently asking students to evaluate their own learning progress, despite the improvement identified relative to the TALIS 2018 OECD average (OECD, 2025). This percentage is substantially lower than the reported frequency of immediate feedback and teacher-administered assessment, suggesting that evaluative responsibilities remain more concentrated among teachers than students. Although teacher-directed assessment provides essential information about learning progress, opportunities for student self-assessment can encourage learners to identify difficulties, reconsider their performance, and develop greater awareness of instructional expectations. Winstone et al. (2022) emphasize that feedback literacy involves the development of evaluative judgment and the capacity to interpret and use feedback within meaningful learning activities. The relatively limited implementation of student self-assessment may therefore indicate an area where instructional practices could be strengthened through greater integration of reflective and participatory assessment strategies. Professional development addressing assessment literacy should consequently support teachers in designing structured opportunities for students to evaluate their progress while maintaining appropriate instructional guidance and assessment standards.

Reflective teaching extends beyond the administration of assessments because teachers must interpret the information generated and determine its implications for future instructional activities. The effectiveness of reflection depends on whether evidence concerning student understanding, classroom interaction, and learning difficulties informs subsequent pedagogical decisions rather than remaining descriptive documentation. Opfer and Pedder (2011) conceptualize teacher professional learning as a complex process shaped by interactions among individual beliefs, existing knowledge, institutional environments, and professional-learning experiences. Within this perspective, reflective practice constitutes an interpretive activity through which teachers reconsider the relationship between intended learning objectives, implemented instructional strategies, and observed student responses. Reflection becomes professionally meaningful when it leads to decisions about which teaching approaches should be maintained, modified, tested, or discontinued in response to instructional evidence. However, opportunities for such systematic evaluation may be constrained when teachers lack sufficient planning time, access to relevant learning information, or organizational support for professional inquiry. Strengthening reflective competence therefore requires professional-development arrangements that integrate evidence interpretation, instructional decision-making, and opportunities to evaluate the consequences of pedagogical adjustments.

Informal professional learning contributes substantially to teachers' continuing development because many instructional challenges arise during everyday classroom experiences rather than within scheduled training activities. Teachers frequently encounter situations requiring immediate interpretation, practical experimentation, and consultation with colleagues concerning appropriate pedagogical responses. Kyndt et al. (2016) identify workplace learning activities such as reflection, professional interaction, experimentation, and independent knowledge acquisition as important components of teachers' professional development. These activities can facilitate instructional improvement by allowing educators to reconsider established practices in relation to specific classroom difficulties and emerging student-learning needs. Nevertheless, informal learning does not necessarily produce sustained instructional change when professional experiences remain isolated or lack opportunities for systematic evaluation. School leadership can support more purposeful learning by allocating time for collaborative lesson analysis, examination of student work, and discussion of evidence concerning instructional effectiveness. Connecting informal learning with structured reflection may therefore strengthen the practical transfer of professional knowledge while reducing dependence on occasional external training as the principal mechanism of professional improvement.

Professional learning communities provide an organizational framework through which reflective practice can develop beyond individual teaching experiences and become part of collaborative instructional improvement. Such communities emphasize shared educational objectives, collective

professional responsibility, and sustained engagement with evidence concerning classroom practice. Admiraal et al. (2021) demonstrate that schools can support professional development by establishing organizational conditions that enable collaborative learning, professional interaction, and continuing reflection. These arrangements may allow teachers to compare instructional experiences, identify common learning difficulties, and examine alternative pedagogical approaches through collective discussion. However, collaboration should be distinguished from routine administrative coordination because productive professional learning requires substantive attention to teaching decisions, student responses, and instructional challenges. When collaborative activities are organized around identifiable learning problems, teachers can develop shared interpretations that inform individual classroom decisions and potentially strengthen collective instructional capacity. Professional learning communities consequently represent a relevant mechanism for connecting reflective practice, professional self-efficacy, and school-level instructional development within supportive institutional environments.

The TALIS 2024 findings identify an important limitation in the perceived impact of professional development, particularly when participation is considered alongside reported changes in teaching experiences. Approximately 55% of teachers indicated that professional learning undertaken during the preceding twelve months had positively influenced their teaching either quite a bit or a lot (OECD, 2025). Although professional learning is widely undertaken, this percentage indicates that substantial perceived instructional benefits are not reported by all participating teachers. The discrepancy suggests that opportunities to attend professional-development activities should not automatically be regarded as evidence of meaningful learning transfer or instructional improvement. Teachers may participate in programs that provide relevant information but encounter difficulties incorporating new approaches into existing curricula, classroom routines, or institutional expectations. Nevertheless, perceived professional-learning impact remains a self-reported indicator and cannot independently establish whether actual instructional performance improved or whether participating teachers acquired measurable pedagogical competencies. The findings therefore emphasize the importance of evaluating professional development through multiple dimensions, including perceived relevance, opportunities for implementation, reflective engagement, and evidence concerning subsequent classroom practices.

The OECD analysis further indicates that teachers' perceptions of professional-learning impact are more strongly associated with reported fulfilment of lesson aims than the nominal content or focus of professional-development activities. This relationship suggests that the practical usefulness of professional learning may be particularly important when examining its relevance to everyday instructional responsibilities (OECD, 2025). However, the association should not be interpreted as evidence that program content lacks importance or that perceived usefulness independently causes improvements in teaching effectiveness. Instead, it highlights the need to examine whether professional-development experiences provide applicable knowledge, opportunities for instructional experimentation, and support for implementing newly acquired strategies. Desimone and Garet (2015) identify coherence, active learning, and sustained professional engagement as relevant characteristics of effective teacher development, emphasizing the importance of connecting learning experiences with instructional practice. Programs that provide limited follow-up or insufficient opportunities for practical application may consequently offer fewer opportunities for teachers to evaluate whether acquired knowledge addresses their classroom challenges. These considerations support an approach to professional-development planning that prioritizes instructional relevance, implementation opportunities, and continuing professional support alongside the selection of appropriate learning content.

Instructional coaching represents a professional-development approach that explicitly connects theoretical knowledge with classroom application through observation, demonstration, individualized feedback, and repeated instructional practice. Unlike isolated training activities, coaching can create opportunities for teachers to evaluate implementation difficulties and refine teaching strategies through successive cycles of professional interaction. Kraft et al. (2018) report positive effects of teacher coaching on instructional practice and student achievement in their meta-analysis, although the magnitude of these effects varies according to implementation conditions and program scale. These findings suggest that structured coaching may provide a practical mechanism for supporting professional learning transfer, particularly when instructional feedback is aligned with identifiable classroom needs. Nevertheless, coaching effectiveness depends on the quality of professional guidance,

opportunities for sustained participation, and institutional capacity to support implementation. The TALIS findings concerning perceived professional-learning impact are consistent with the broader rationale for emphasizing practical support, although the aggregate indicators do not independently establish the comparative effectiveness of coaching within the surveyed education systems. Integrating coaching with reflective lesson analysis and collaborative inquiry may therefore provide a defensible approach to strengthening teachers' capacity to translate professional learning into instructional decisions.

Reflective practice should be incorporated into the design and evaluation of professional development rather than treated as an individual responsibility that begins only after formal training has concluded. Effective programs can provide structured opportunities for lesson inquiry, collaborative examination of student work, peer observation, instructional rehearsal, and follow-up discussion of classroom outcomes. These activities create conditions in which teachers can identify differences between intended instructional approaches and their experiences during implementation. Sims et al. (2021) emphasize the relevance of professional-development characteristics that support meaningful teacher learning, reinforcing the importance of connecting instructional knowledge with opportunities for application. When teachers receive credible feedback and examine evidence of student responses, professional reflection may contribute to more precise judgments about existing competencies and areas requiring additional support. However, the benefits of these activities depend on whether schools provide sufficient time, collaborative structures, and professional resources to sustain implementation beyond individual development sessions. Table 3 synthesizes the principal features of professional development and their proposed mechanisms for supporting reflective practice, instructional adaptation, and professional-learning transfer.

Table 3. Professional Development Features Linked to Transfer

Feature	Mechanism	Expected classroom transfer
Content focus	Builds task-specific knowledge	More precise instructional decisions
Active rehearsal	Creates mastery experience	Stronger efficacy for new practices
Coaching/feedback	Provides credible performance information	Refined implementation
Collaborative inquiry	Builds shared interpretation	Collective problem solving
Follow-up reflection	Links evidence to next action	Sustained adaptation

The analytical framework presented in Table 3 identifies five complementary professional-development features through which instructional knowledge may be connected with classroom implementation and continuing improvement. Content-focused learning provides the conceptual and pedagogical foundation necessary for addressing specific teaching responsibilities, while active rehearsal creates opportunities to apply acquired strategies under supported conditions. Coaching and feedback contribute additional information concerning instructional performance, enabling teachers to evaluate implementation difficulties and refine their pedagogical decisions through professional guidance. Collaborative inquiry extends this process by supporting shared interpretations of classroom evidence and encouraging collective consideration of instructional challenges within professional learning communities (Admiraal et al., 2021). Follow-up reflection connects these activities with subsequent teaching decisions by encouraging educators to examine whether implemented changes adequately respond to student-learning needs. Although the proposed mechanisms are supported conceptually by existing professional-development research, the table represents an analytical synthesis rather than a direct statistical evaluation of their effectiveness within TALIS 2024 (Kraft et al., 2018; Sims et al., 2021). Taken together, these features suggest that professional development is more appropriately understood as a continuing process of knowledge acquisition, supported implementation, evidence interpretation, and instructional refinement than as participation in isolated training activities.

Teaching Effectiveness, Adaptive Instruction, and Professional Development Priorities

The strongest TALIS relationship concerns the connection between self-efficacy and fulfilment of lesson aims. OECD regression analyses report positive associations between teacher self-efficacy and lesson aims involving teaching clarity, cognitive activation, feedback, consolidation, and adaptation in all participating education systems. This consistency suggests that efficacy is closely tied to perceived instructional effectiveness across varied contexts (OECD, 2025).

Adaptive teaching shows especially strong associations. Teachers who believe they can help every student progress 'quite a bit' or 'a lot' are four times more likely to report fulfilling their adaptive-teaching lesson aims, after accounting for teacher and school characteristics. The size of this relationship highlights the importance of efficacy beliefs that are explicitly linked to learner progress rather than generic confidence (OECD, 2025).

Table 4. TALIS-Informed Priorities for Professional Learning

Observed pattern	Interpretation	Professional-learning priority
High classroom-management efficacy	Strong perceived behavioural-control capacity	Shift marginal training toward complex instructional needs
Lower efficacy for motivating low-interest students	Engagement remains difficult	Motivational design and relationship-centered strategies
48% frequently use student self-assessment	Learner co-regulation is underused	Assessment literacy and self-assessment routines
55% report strong PD impact	Participation exceeds transfer	Coaching, rehearsal, and follow-up
4x-6x adaptive-teaching associations	Task-specific efficacy matters	Mastery experiences tied to learner diversity

Confidence in supporting social-emotional learning is associated even more strongly with adaptive-teaching aims: teachers expressing high capability are six times more likely to report meeting these aims. This finding suggests that adaptation is not purely cognitive or technical. Teachers who can interpret and support social-emotional needs may be better positioned to vary instruction without losing connection, expectations, or classroom stability (Collie et al., 2012).

Teacher efficacy is also related to professional well-being and job satisfaction in TALIS, consistent with earlier evidence that efficacy can buffer stress and support persistence. Burnout research identifies workload, value conflict, and limited support as important stressors, while efficacy can influence how demands are interpreted and managed (Skaalvik & Skaalvik, 2017). Professional development should avoid adding implementation pressure without time and organizational support.

School climate matters because efficacy develops within social systems. Research linking climate, social-emotional learning, stress, satisfaction, and efficacy shows that teachers' beliefs are shaped by the environments in which they work (Collie et al., 2012). A professional-development program can be technically strong yet produce limited classroom change when teachers lack planning time, leadership support, or access to collaborative expertise.

Cross-national work demonstrates that teacher self-efficacy varies with teacher, student-group, school, and leadership characteristics (Fackler & Malmberg, 2016). This warns against using international averages as performance targets without local interpretation. Systems should diagnose which efficacy domains are weak and which organizational barriers prevent teachers from acting on what they know.

Teaching effectiveness also depends on professional competence beyond efficacy. Teachers require content knowledge, pedagogical content knowledge, diagnostic skill, classroom management, and beliefs that support ambitious instruction (Kunter et al., 2013). Professional development is most defensible when it builds these resources while creating opportunities to test them against student evidence.

The TALIS results point to a differentiated professional-development agenda. Classroom management confidence is already high for many teachers, so universal training in basic management may yield limited marginal benefit compared with targeted work on motivation, adaptive teaching, self-

assessment, and social-emotional support. Program selection should begin with evidence about teacher need and lesson aims rather than with fashionable topics (Lauermann & Butler, 2021).

The study is limited by self-report measures and by the use of published aggregate indicators rather than TALIS microdata. Perceived professional-learning impact and lesson-aim fulfilment are valuable but are not direct observations of teaching quality or student achievement. Future work should link teacher survey responses with observation, professional-development records, and longitudinal student outcomes. The present analysis nevertheless identifies a clear policy principle: professional learning should be judged by strengthened capability, reflective transfer, and more effective adaptation in classrooms (Lauermann & ten Hagen, 2021).

CONCLUSION

TALIS 2024 portrays a teaching workforce with high confidence in many classroom-management and instructional tasks but weaker confidence in motivating students who show low interest. Assessment and feedback practices are widely used, while student self-assessment remains less common. The most consequential finding is the gap between professional-learning participation and perceived impact: only around 55% of teachers reported that recent professional learning influenced their teaching quite a bit or a lot. Professional development should be evaluated by transfer into lesson decisions, reflective use of evidence, and strengthened task-specific efficacy rather than by attendance counts.

Self-efficacy is closely associated with fulfilment of lesson aims, especially adaptive teaching. Teachers who believe they can help every student progress and support social-emotional learning report substantially stronger success in meeting adaptive-teaching aims. Effective professional learning should create mastery experiences through rehearsal, coaching, collaborative inquiry, and evidence-based reflection while addressing organizational conditions that enable implementation. Future analyses using TALIS microdata and classroom observations can test how specific forms of professional learning contribute to changes in practice and student outcomes over time.

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