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Teacher Consultation in the Digital Age: A Systematic Review of Collaborative Problem-Solving, Reflective Practice and Inclusive Professional Development

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Abstract:
This systematic literature review critically examines the evolving landscape of teacher consultation in contemporary educational systems, with a particular focus on collaborative engagement, digital integration, and lifelong professional development. Guided by the PRISMA 2020 framework, the review employed a rigorous selection process using Scopus and Web of Science databases, retrieving an initial pool of 171 articles. After applying stringent inclusion and exclusion criteria, 25 peer-reviewed journal articles published between 2020 and 2025 were analysed in depth.
The synthesis of these studies yielded three interrelated thematic domains: (1) trust-building and dialogic communication as foundational mechanisms for sustainable consultation practices; (2) collaborative problem-solving, particularly within digitally mediated contexts, as a catalyst for instructional innovation and pedagogical resilience; and (3) professional development through structured consultation, characterised by reflective practice, digital competency, and inclusive institutional support structures.
In addition to these themes, the review identified persistent systemic challenges, including fragmented implementation frameworks, digital skill disparities among educators, and equity gaps that disproportionately affect marginalised and gendered communities. These findings underscore the urgent need for reconfigured consultation models that are grounded in mutual respect, context-sensitive adaptability, and a commitment to equity-driven, lifelong learning trajectories.
By bridging conceptual constructs with emergent empirical evidence, this review contributes a nuanced and timely understanding of teacher consultation as a strategic pedagogical lever. It highlights the imperative for educational systems to institutionalise consultation not as an auxiliary support, but as a transformative, policy-embedded mechanism for advancing instructional quality and fostering inclusive learning environments in an increasingly digital and complex educational era.
Keywords: *Teacher consultation, teacher professional development, digital collaborative problem-solving, reflective practice, digital literacy in education, lifelong learning, consultation framework, systematic literature review*

INTRODUCTION

Teacher consultation has emerged as a central pillar in advancing educational quality, particularly as schools worldwide adapt to the increasing complexities of twenty-first-century learning environments. More than a routine exchange of pedagogical ideas, consultation reflects a structured and intentional process of professional collaboration. It enables educators to engage in reflective dialogue, share knowledge, and co-develop strategies to address classroom challenges. Studies consistently highlight the importance of core components such as mutual trust, open communication, structured problem-solving, and institutional support as critical to sustaining effective consultation practices [1][2][3][4].

In the absence of these components, consultation efforts risk becoming fragmented, potentially leading to disengagement and resistance to collaborative growth [5][6]. The COVID-19 pandemic accelerated the transformation of educational systems, highlighting both the potential and limitations of existing consultation practices. Rapid digitalisation, shifts in curriculum expectations, and diverse learner needs have significantly intensified the demand for collaborative problem-solving among educators [7][8]. The push toward differentiated instruction and the call for lifelong learning further amplify the strategic importance of consultation [9][10]. However, widespread implementation remains inconsistent due to time constraints, inadequate professional training, insufficient institutional scaffolding, and gaps in digital literacy [11][12][13][14]. The integration of technology into education has introduced both opportunities and new forms of inequity, particularly in relation to gender disparities and access to digital tools [13][14].

Although teacher consultation is widely acknowledged as a vehicle for educational reform, its practical application often remains fragmented and unstructured. Many collaborative efforts among educators take place informally, lacking systematic integration within school policies or professional development frameworks. Research indicates that consultation plays a significant role in shaping the educational environment, particularly in establishing support systems for teachers [19]. It has been noted that effective consultation not only encourages collaboration among teachers but also enhances their capacity to manage classroom dynamics through shared knowledge and experiences [9][20]. For instance, teachers who participated in consultative processes have reported improved feelings of competence and enhanced performance. This is particularly significant in contexts where educators encounter barriers related to student behaviour or academic challenges [4][21].

Moreover, the fidelity and quality of the consultative relationship between teachers and consultants are critical for the success of implemented strategies [10][22]. Many studies underscore that a strong consultative alliance leads to better teacher and student outcomes, as the ties developed through these interactions foster a context where innovative teaching practices can flourish [20][23]. Therefore, building a reliable and trustful rapport is essential for teachers to feel motivated and supported as they navigate the complexities of contemporary education. In addressing the barriers encountered in consultation practices, literature suggests that schools must prioritise professional development to equip educators with the necessary skills for effective collaborative practices [18][8]. This entails creating supportive environments where educators can engage in discussions about pedagogical strategies, instructional design, and student engagement in a non-threatening manner. As such frameworks are implemented, emphasis must also be on fostering a culture of continuous improvement and reflective practice among educational staff [24].

A comprehensive Boolean search conducted across Scopus and Web of Science databases from 2020 to 2025 yielded 112 and 44 records respectively. However, only 25 articles met the inclusion criteria and addressed core elements of teacher consultation, such as communication, trust, problem-solving, digital competence, and institutional scaffolding [28]. This scarcity of integrative literature underscores the urgency for a review that consolidates findings into a coherent thematic structure [28][30]. These findings point to a critical research gap: there is no existing synthesis offering a consolidated, evidence-based framework integrating the multifaceted elements of teacher consultation. Without such a foundation, policy recommendations and school-based practices remain reactive rather than guided by coherent strategies for sustainable professional collaboration [30].

This systematic literature review therefore aims to (1) identify and synthesise key elements that define effective teacher consultation; (2) analyse the interplay between communication, trust, collaborative strategies, reflective practice, and digital integration; and (3) explore how these elements contribute to sustained professional development. By mapping these findings across varied educational contexts, the review seeks to produce an actionable, evidence-informed framework that can guide both policy and practice in contemporary education [31][32][33].

Furthermore, recent studies highlight the importance of trust and communication as foundational elements in effective teacher consultation, emphasising the need for structured processes that foster these components [26][34]. When trust is established within consultative relationships, teachers are more likely to engage in open dialogues, share resources, and collaboratively address educational challenges, thus placing themselves in a better position to respond to the diverse needs of students in the classroom [35]. The urgency for a systematic approach to teacher consultation is underscored by the profound educational reforms mandated by global trends and the ongoing digital transformation of educational landscapes. Supporting teachers not only through informal peer interactions but also through structured, evidence-based consultation frameworks is essential [30].

The review contributes to ongoing academic discourse by offering an analytical lens into how consultation can serve as a transformative force in education. It further highlights how professional dialogue anchored in digital competence, equity, and institutional support can foster a culture of innovation, responsiveness, and inclusive growth within schools [34][35][36]. In conclusion, an organised and analytical study of teacher consultation combining findings across various contexts will aid in defining a clearer path forward for educational systems committed to fostering professional development and cooperative learning environments [31][40].

LITERATURE REVIEW

Teacher consultation is increasingly recognised as a critical catalyst in advancing educational quality, yet a coherent scholarly consensus on its defining components remains underdeveloped. The current body of literature reflects a fragmented understanding of how consultation operates within various educational contexts, often treating its elements in isolation. Although several empirical studies between 2020 and 2025 explore aspects of consultation, a holistic synthesis integrating these perspectives has yet to be established [41][42]. Many scholars frame consultation as a reflective, collaborative process whereby peer dialogue uncovers pedagogical challenges and supports professional decision-making [43][44]. However, certain references, such as those focusing on infant and early childhood consultation, while methodologically rigorous, may not fully align with broader educational consultation contexts, thereby limiting their generalisability [45].

Central to much of the literature is the emphasis on communication and trust as foundational for effective teacher consultation. These qualities are consistently associated with enhanced self-efficacy, improved collegial relationships, and the cultivation of mutual accountability among educators [46][47]. The breadth of methodologies employed across the reviewed studies including qualitative case studies, mixed-method evaluations, and survey-based inquiries demonstrates a growing integrative trend in the field, echoing patterns observed in project-based learning and other collaborative pedagogies [48][49]. Despite this methodological diversity, there remains a lack of unified theoretical or

empirical models that interlink communication, digital competence, and institutional support into a single explanatory framework [50].

Barriers to effective consultation continue to be highlighted across the literature. Time constraints, lack of structured models, insufficient training, and limited access to digital infrastructure are commonly reported obstacles [51]. These findings are reinforced by studies on technological readiness and digital transformation in education, which illustrate how digital literacy and institutional support are necessary preconditions for successful collaboration [52][53]. In this light, teacher consultation must be examined not only as a pedagogical process but also as a socio-technical system where infrastructural readiness and policy alignment are integral to success.

A recurring theme across studies is the need to interrelate the well-established constructs of trust, collaborative problem-solving, and reflective practice within an operational model [54]. While conceptual frameworks for related constructs such as teacher noticing or blended learning have been developed, there is an evident gap in parallel frameworks for teacher consultation [55][56]. This absence of a coherent model validates the rationale for a systematic literature review aimed at bridging theoretical and empirical divides.

The literature further reinforces the importance of building collaborative professional cultures, not merely to improve instructional quality but also to enhance teachers' psychological well-being [57][58]. In contexts of high-stakes accountability and increasing student diversity, such consultative environments are indispensable. Evidence indicates that positive consultative alliances contribute to job satisfaction, reduced professional isolation, and improved capacity for instructional adaptation. As these elements become more interconnected, the case for a unified and actionable consultation model becomes even stronger.

Insights drawn from the reviewed literature underscore the need for systemic and policy-level support in institutionalising teacher consultation. Studies confirm that trust, when operationalised through structured consultation, has a direct bearing on both teacher retention and student achievement [59][60]. This highlights the transformative potential of robust consultation systems that are sensitive to context, equity, and innovation. As such, this review aims not only to synthesise findings but to chart a future research and practice agenda grounded in evidence-based recommendations.

In conclusion, the reviewed studies collectively affirm the potential of teacher consultation as a lever for sustainable educational transformation. By consolidating diverse strands of empirical evidence and identifying thematic interconnections, this literature review sets the stage for a clearer, more integrated conceptual model of consultation. This model will serve as the analytical framework for subsequent sections of the review, guiding the examination of how teacher consultation contributes to professional development, pedagogical innovation, and student-centred learning outcomes [61][62][63].

3.0 Research Question

Clear and focused research questions are foundational to the design, structure, and rigour of any systematic literature review (SLR). They serve not only to frame the review's scope and direction but also to ensure that literature selection, analysis, and synthesis remain coherent and relevant. In this review, research questions were constructed using the PICo framework an approach widely employed in qualitative synthesis. PICo stands for Population (teachers), Interest (consultation practices), and Context (educational settings). This framework helps ensure that the inquiry is well aligned with the objectives and thematic priorities of the review.

The research questions formulated for this study are as follows:

1. How do elements of consultation among teachers influence teaching practices and professional development within contemporary educational settings?
2. What critical factors support or impede effective consultation among teachers across diverse institutional and cultural contexts?
3. What challenges and barriers do educators encounter in implementing consultation practices, and what strategies have been proposed to foster sustainable collaboration?

These questions reflect the review's aim to explore the multidimensional role of teacher consultation in enhancing instructional effectiveness, fostering reflective practice, and supporting systemic educational development. The formulation of these questions ensures a focused and purposeful exploration of the literature and reinforces the analytical depth and thematic integrity of this systematic review.

MATERIAL AND METHODS

This study adopted the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure a systematic, transparent, and replicable process for identifying, screening, and analysing relevant literature [64]. The PRISMA framework provides a structured methodology that enhances the reliability, credibility, and rigour of systematic reviews by detailing each procedural phase from initial identification of sources to final data abstraction [65][66].

To collect pertinent studies, two authoritative academic databases Scopus and Web of Science (WoS) were selected due to their extensive indexing of peer-reviewed journals within the fields of education and social sciences [67]. The search strategy involved the use of refined Boolean search strings tailored to the respective syntax of each database. These included keywords such as "teacher consultation", "educator collaboration", "professional dialogue", "peer problem-solving", "communication", and "reflective practice". Searches were limited to English-language, peer-reviewed journal articles published between 2020 and 2025, ensuring relevance to current educational contexts and eliminating earlier, potentially outdated studies [68].

The PRISMA procedure comprises four sequential phases: identification, screening, eligibility, and data abstraction [66]. During the identification phase, 171 articles were retrieved 118 from Scopus and 53 from WoS using the aforementioned search strings. In the screening phase, articles were assessed based on predefined inclusion and exclusion criteria. Duplicate entries, non-English publications, non-journal literature (e.g., books, editorials, conference papers), and studies unrelated to the consultation theme were excluded [69].

Following this, the eligibility phase involved a thorough full-text review of 65 shortlisted articles. Of these, 25 were selected for final inclusion based on their alignment with the research questions, relevance to the thematic focus of consultation among teachers, and availability of full text [70]. These studies were then subjected to the data abstraction phase, where critical variables such as consultation structures, communicative strategies, institutional support, and digital competence were extracted and organised thematically.

To deepen interpretive insight, a qualitative synthesis was conducted. This stage involved examining patterns in findings across the included studies, with particular attention given to how reflective practices intersect with trust, collaboration, and professional development [71][72]. A special focus was placed on understanding how communication dynamics and institutional conditions enable or hinder effective consultation in diverse educational settings [73].

By adhering to the PRISMA 2020 methodology, this review ensures a transparent and methodologically robust examination of teacher consultation literature. The systematic process applied here not only improves the reliability of findings but also identifies meaningful directions for further investigation, particularly regarding the digital integration of collaborative teaching practices and the systemic scaffolding needed to sustain consultation models [74][75][76].

Identification

In this study, a systematic and structured approach was adopted to compile a substantial body of relevant literature on the elements of consultation among teachers in education. The identification process commenced by establishing key terms and constructs integral to the research objective [77]. Keywords were carefully selected based on academic resources such as educational dictionaries, thesauri, encyclopaedias, and synthesised findings from seminal and contemporary studies [78]. The refined keyword list included terms such as "teacher consultation", "professional dialogue", "collaborative problem solving", "trust", "communication", "reflective practice", "institutional support", and "learning", ensuring alignment with current educational discourse [79][80].

Boolean search strings incorporating these keywords were then tailored specifically for Scopus and Web of Science (WoS) databases, optimised for database-specific syntax and filters [81]. Searches were restricted to final-stage, English-language journal articles published between January 2020 and 11 June 2025. The Scopus query used TITLE-ABS-KEY with filters targeting the fields of Education and Social Sciences, resulting in 112 records [82]. Concurrently, the WoS query employed TS fields, filtering by article type, research category, SSCI/ESCI indexing, and language, yielding 44 records [83]. In total, 156 documents satisfied the inclusion criteria and were retained for the subsequent screening process.

The screening phase involved a detailed evaluation of titles and abstracts for relevance, while duplicates were systematically excluded, refining the dataset to include only the most pertinent studies [84]. This stringent process enhanced the quality and relevance of the material selected for deeper analysis [85]. Notably, institutional support was found to be a central enabler of successful collaborative problem-solving and communication in educational settings [86]. The literature further illustrates that effective teacher consultation is closely associated with the presence of reflective practices embedded in structured feedback loops during professional dialogues [87].

Thematic analysis during this phase was framed to uncover relationships between identified consultation components and their impact on educational practice. This focus reflects current research trends in teacher professional development and institutional collaboration [88]. Findings consistently revealed that meaningful collaboration is largely contingent upon systems that foster trust, openness, and sustained engagement among educators [89].

By systematically engaging with the literature in this phase, the study seeks to enhance the understanding of teacher consultation as a complex, multidimensional construct influenced by institutional scaffolding, digital competencies, and interpersonal dynamics [90]. The identification phase thus establishes a solid foundation for further examination of how these factors interact to shape consultation outcomes and inform future educational strategies [91].

TABLE 1
The search string

Scopus	TITLE-ABS-KEY (("teacher consult*" OR "educator collaborat*" OR "professional dialog*" OR "peer problem-solving") AND ("education" OR "teaching" OR "learning")) AND PUBYEAR > 2019 AND PUBYEAR < 2026 AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "EDUC")) AND (LIMIT-TO (LANGUAGE, "English")) Date of Access: **Jun 2025**
WoS	TS=(("teacher consult*" OR "educator collaborat*" OR "professional dialog*" OR "peer problem solving") AND ("education" OR "teaching" OR "learning")) AND PY=2020-2025 AND DOCUMENT TYPES=(Article) AND Web of Science Categories=(Education & Educational Research) AND Indexes=(SSCI, ESCI) AND Languages=(English) **Date of Access: Jun 2025**

3.2 Screening

Potentially pertinent research items were evaluated during the screening phase to ensure alignment with the predefined research questions addressing the elements of consultation among teachers in educational settings [92]. The keyword combinations "teacher consultation," "professional dialogue," "collaborative problem-solving," "trust," "communication," "reflective practice," and "institutional support" were implemented in both the Scopus and Web of Science (WoS) databases as outlined in the identification phase [93][94]. These search strategies yielded a total of 156 publications, consisting of 112 records from Scopus and 44 records from WoS, retrieved on June 2025 [95].

During the initial screening, 11 duplicate entries were identified and removed, resulting in 145 unique records. These records were then reviewed based on their titles and abstracts to determine their relevance to the consultation context among educators [96]. A total of 97 records were excluded based on the pre-established inclusion and exclusion criteria. These criteria included removal of studies that lacked direct focus on teacher consultation or educational collaboration, as well as those unrelated to educational contexts [97].

Non-peer-reviewed publications such as conference proceedings, book chapters, editorials, and review articles were excluded, alongside studies published outside the 2020–2025 timeframe or written in languages other than English [98]. Additionally, records not classified as final-stage publications or not indexed under the Education or Social Sciences subject areas were omitted [99].

Following this rigorous screening process, 48 articles were shortlisted for full-text eligibility assessment. These articles exhibited thematic congruence with teacher consultation, collaborative engagement, and reflective professional practices within diverse educational environments [100]. This process ensured that the subsequent analysis would be grounded in high-quality literature reflective of current research discourse.

The thorough screening procedures reinforced the integrity and focus of this review, enabling a deep exploration of the factors that shape teacher consultation, particularly those involving trust and effective communication [101]. Prior studies have underscored that reflective practices play an essential role in encouraging educators to critically examine their methods and collaborative approaches [102]. The relevance of these selected studies supports the overarching goals of the review in synthesising robust insights on consultation in education.

In conclusion, the screening phase ensured a methodical and discerning selection of literature, laying a strong foundation for the qualitative synthesis of evidence related to teacher consultation and collaborative educational practices [103].

TABLE 2 The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2020 – 2025	< 2020
Literature type	Journal (Article)	Conference papers, book chapters, reviews, editorials
Publication Stage	Final	In Press
Subjec Area	Social Sciences, Education	Besides Social Sciences, Education

3.3 Eligibility

At the commencement of the eligibility phase, 48 full-text journal articles were retained following the initial screening process. These articles demonstrated thematic relevance to the central research questions concerning teacher consultation practices in educational settings. Each article underwent a thorough eligibility assessment to verify its methodological integrity, conceptual clarity, and alignment with the predefined inclusion criteria [104].

During this assessment, 23 articles were excluded due to several critical issues. Some studies, while initially appearing relevant, upon closer inspection did not explicitly situate consultation within school-based educational contexts. Others lacked sufficient clarity in their abstracts or titles, making it difficult to determine their relevance to the study's focal themes. Several publications were removed due to the unavailability of full-text access, preventing comprehensive evaluation. Additional exclusions were made for articles that fell outside the 2020–June 2025 publication window, were not final-stage peer-reviewed journal articles, or were written in languages other than English.

The consistent application of these criteria ensured the retention of studies that held strong empirical and theoretical relevance to the core constructs of teacher consultation. As a result, 25 articles were included in the final qualitative synthesis. These studies were published in reputable, peer-reviewed journals and collectively addressed key themes such as professional dialogue, communication, trust-building, collaborative problem-solving, digital competence, reflective practice, and institutional support.

The final pool of literature provides a robust foundation for the thematic abstraction process. It captures a comprehensive and contextually rich landscape of teacher consultation practices, supporting a nuanced understanding of how these elements function within contemporary educational environments. The inclusion of these articles, selected for both methodological soundness and thematic alignment, will significantly contribute to a more refined synthesis of collaborative teaching practices.

In conclusion, the eligibility phase marked a critical point in the review process, ensuring that only high-quality, contextually relevant studies were retained for synthesis. This rigorous filtering enhanced the overall credibility of the review and strengthened the validity of its forthcoming findings on teacher consultation.

3.4 Data Abstraction and Analysis

This study employed an integrative synthesis approach to analyse the 25 articles selected during the eligibility phase. These studies spanned diverse methodological paradigms quantitative, qualitative, and mixed-method necessitating a robust analytical model capable of unifying heterogeneous data sources [105]. Integrative synthesis was deemed suitable due to its capacity to consolidate findings across research designs, thereby enabling a comprehensive understanding of consultation practices among teachers in education [106].

The data abstraction process began with the systematic extraction of critical attributes from each study, including research aims, methodologies, participant demographics, institutional settings, and constructs linked to teacher consultation. Particular attention was given to how each study conceptualised elements such as communication, trust, collaborative problem-solving, reflective practice, institutional support, and digital competence. This structured extraction ensured academic precision and the retention of findings essential to both theoretical insight and pedagogical application [107].

Thematic synthesis followed a three-phase analytical process: (i) line-by-line coding of reported findings, (ii) organisation of codes into descriptive themes, and (iii) generation of analytical themes aligned with the review's research questions [108]. This process enabled the emergence of a multilayered understanding of consultation, moving beyond surface categorisation to a deeper conceptual schema. The development of themes is represented visually in Figure 2, illustrating the progression from extracted data to final thematic domains.

Through iterative analysis and internal team deliberation, three dominant thematic constructs were refined: (1) communication and trust-building as foundational interpersonal dynamics; (2) structured collaborative problem-solving as a functional mechanism of consultation; and (3) consultation-driven professional development, integrating digital literacy and institutional enablers as key contextual elements [109]. These themes were consistently supported by evidence indicating the centrality of trust and communication in fostering effective collaboration among educators [110].

To strengthen analytical rigour and ensure relevance, the initial thematic structure was validated by two external experts in teacher professional development and systematic literature review methodology. Their evaluations affirmed the clarity, comprehensiveness, and applicability of the themes across educational settings [111]. Notably, the experts underscored the importance of acknowledging emergent themes such as gender-based disparities in consultation efficacy and the influence of leadership and institutional culture on consultation dynamics [112].

This integrative, expert-validated synthesis culminated in the construction of a comprehensive conceptual model of teacher consultation. The model illustrates how relational, structural, and contextual variables interact to shape effective consultative practice, offering a foundation for refining professional development initiatives, pedagogical strategies, and future research in the field [109][111].

Table 3: Primary Studies

BIL	AUTHORS	TITLE	YEAR	JOURNAL	SCOPUS	WOS
1	Cavaletto G.M.; Miglietta A.[30]	Cooperative and competitive learning as transformative factors of educational processes for extracurricular skill enhancement	2024	Frontiers in Education	/	
2	Alt D.; Naamati-Schneider L.[31]	Online argumentation-based learning aided by digital concept mapping during COVID-19: implications for health management teaching and learning	2022	Health Education	/	
3	Karlen Y.; Hertel S. [32]	Inspiring self-regulated learning in everyday classrooms: teachers' professional competences and promotion of self-regulated learning	2024	Unterrichtswissenschaft	/	
4	Braxton S.N. [33]	Competency frameworks, alternative credentials and the evolving relationship of higher education and employers in recognizing skills and achievements	2023	International Journal of Information and Learning Technology	/	
5	Gorodnycha L.; Gergul S.; Olkhovyk M.; Panchenko V.; Turchyna I. [34]	The effect of self-education on teachers' competitiveness	2023	Journal of Education and Learning	/	
6	Paños-Castro J.; Arruti A.; Korres O. [35]	COVID and ICT in Primary Education: Challenges Faced by Teachers in the Basque Country	2022	Sustainability (Switzerland)	/	
7	Rodríguez-García A.-M.; Cardoso-Pulido M.-J.; De la Cruz-Campos J.-C.; Martínez-Heredia N. [36]	Communicating and Collaborating with Others through Digital Competence: A Self-Perception Study Based on Teacher Trainees' Gender †	2022	Education Sciences	/	
8	Jarupongputtana C.; Mangkhang C.; Dibyamandala J.; Manokarn M. [37]	Interdisciplinary Community Based Learning to Enhance Competence of Digital Citizenship of Social Studies Pre-Service Teacher's in Thai Context: Pedagogical Approaches Perspective	2022	Journal of Curriculum and Teaching	/	
9	Sanerma P.; Ahonen O.; Rauha A.; Naakka H.; Perälä S.; Männistö M. [38]	Interprofessional students' experiences of specialization education on the design and development of digital health and social care services	2024	Cogent Education	/	
10	Zervas I.; Stiakakis E. [39]	Digital skills in vocational education and training: Investigating the impact of Erasmus, digital tools, and educational platforms	2024	Journal of Infrastructure, Policy and Development	/	
11	Hazaimeh M.; Al-Ansi A.M. [40]	Model of AI acceptance in higher education: arguing teaching staff and students perspectives	2024	International Journal of Information and Learning Technology	/	

12	Gnangnon B.; Li K.; Rezaei D.F.; Marks M.M.; Dellarocas C.; Hokanson S.C.; Goldman S.B. [41]	PhD Progression: a micro-credentialing program motivates and supports PhD students' professional development at a US University	2024	Studies in Graduate and Postdoctoral Education	/	
13	Ogata H.; Majumdar R.; Flanagan B.; Kuromiya H. [42]	Learning analytics and evidence-based K12 education in Japan: usage of data-driven services for mobile learning across two years	2023	International Journal of Mobile Learning and Organisation	/	
14	Thwe W.P.; Kálmán A.	Relationships between the perceptions of lifelong learning, lifelong learning competencies and learning strategies by teacher trainers in Myanmar	2023	International Review of Education	/	/
15	Tekedere H.; Göker H.	The Role of Online Information Searching Strategies and Digital Literacy Levels in Predicting Students' Lifelong Learning Competencies	2023	Participatory Educational Research	/	
16	Freese, M; Teichrew, A; Winkelmann, J; Erb, R; Ullrich, M; Tremmel, M	Measuring teachers' competencies for a purposeful use of augmented reality experiments in physics lessons	2023	Frontiers in Education		/
17	Ramírez-Montoya, MS; Gámez, LQ; Sanabria-Z, J; Portuguez-Castro, M	Exploring Complex Thinking in Latin American Universities: Comparative Analysis Between Programs and Alternative Credentials	2024	Journal of Latinos and Education		/
18	Kittelmann, F; Kraft, P; Schmid, E	Experiential learning during lockdown: a teaching case describing intercultural competency development through the mechanism of reflection using different digital teaching methods	2023	Journal of International Education in Business		/
19	Rodríguez-García, AM; Cardoso-Pulido, MJ; De la Cruz-Campos, JC; Martínez-Heredia, N	Communicating and Collaborating with Others through Digital Competence: A Self-Perception Study Based on Teacher Trainees' Gender	2022	Education Sciences		/
20	Kayi, EA	Transitioning to blended learning during COVID-19: Exploring instructors and adult learners' experiences in three Ghanaian universities	2024	British Journal of Educational Technology		/
21	Durgunoglu, AY; Cantuerk, M; Kaya, U; Yazici, B; Sahin, K	Moving to remote learning in adult education: Challenges and solutions of limited technological resources and capabilities	2022	Frontiers in Education		/
22	Huda, M	Between accessibility and adaptability of digital platform: investigating learners' perspectives on digital learning infrastructure	2024	Higher Education Skills and Work-Based Learning		/

23	Nair, BB; Solanki, S	Student perceptions of knowledge management and institutional readiness for online classes amid Covid-19 pandemic	2023	Knowledge Management & E-Learning-An International Journal	/
24	Déniz, SDF; Pérez, DG	The perception of the learner about his/her competency development in a EFL gamified learning situation	2023	Aula Abierta	
25	Reddy, P; Sharma, B; Chaudhary, K; Lolohea, O; Tamath, R	Visual literacy shown through a magnifying lens by high school students	2023	Interactive Technology And Smart Education	

Quality of Appraisal

In the context of this systematic review on the elements of consultation among teachers in education, quality assessment was conducted systematically using appraisal indicators adapted from the Joanna Briggs Institute (JBI) critical appraisal tools. These criteria were employed to ensure the inclusion of methodologically sound and thematically aligned studies. Each study was assessed against six quality assurance (QA) dimensions:

- **QA1**. Is the purpose of the study clearly stated?
- We evaluated whether the research objectives and guiding questions were explicitly defined and clearly aligned with central themes such as communication, trust, collaborative problem-solving, reflective practice, and institutional support. The clarity of research intent was considered a prerequisite for thematic coherence during abstraction.
- **QA2**. Is the interest and the usefulness of the work clearly presented?
- We reviewed whether the study conveyed its educational relevance and practical implications, particularly how findings could inform teaching practices, school policies, or future research on teacher consultation.
- **QA3**. Is the study methodology clearly established?
- We evaluated the methodological rigour was appraised based on transparency in study design, participant selection, data collection procedures, and analytical strategies. Each study was examined in accordance with JBI principles to determine the consistency and robustness of its methodological approach.
- **QA4**. Are the concepts of the approach clearly defined?
- We assessed whether key constructs such as teacher consultation, digital competence, institutional scaffolding, and professional dialogue were clearly defined and appropriately operationalised. Conceptual clarity was essential to ensure valid thematic comparisons across the studies.
- **QA5**. Is the work compared and measured with other similar work?
- We analysed whether each study situated its findings within the broader research landscape by referencing relevant scholarly literature. Strong theoretical positioning and comparative discussion were taken as indicators of the study's scholarly contribution and contextual validity.
- **QA6**. Are the limitations of the work clearly mentioned?
- We verified that the inclusion of a thoughtful discussion of study limitations such as constraints in scope, methodology, sampling, or contextual applicability was viewed as a marker of research integrity. This enabled accurate judgement regarding the reliability and transferability of each study's findings.

In sum, the QA process supported the selection of a reliable and credible evidence base by ensuring that all retained studies demonstrated academic quality, thematic relevance, and methodological robustness. This step was crucial in reinforcing the validity of the subsequent synthesis and ensuring that derived themes were grounded in rigorous empirical work.

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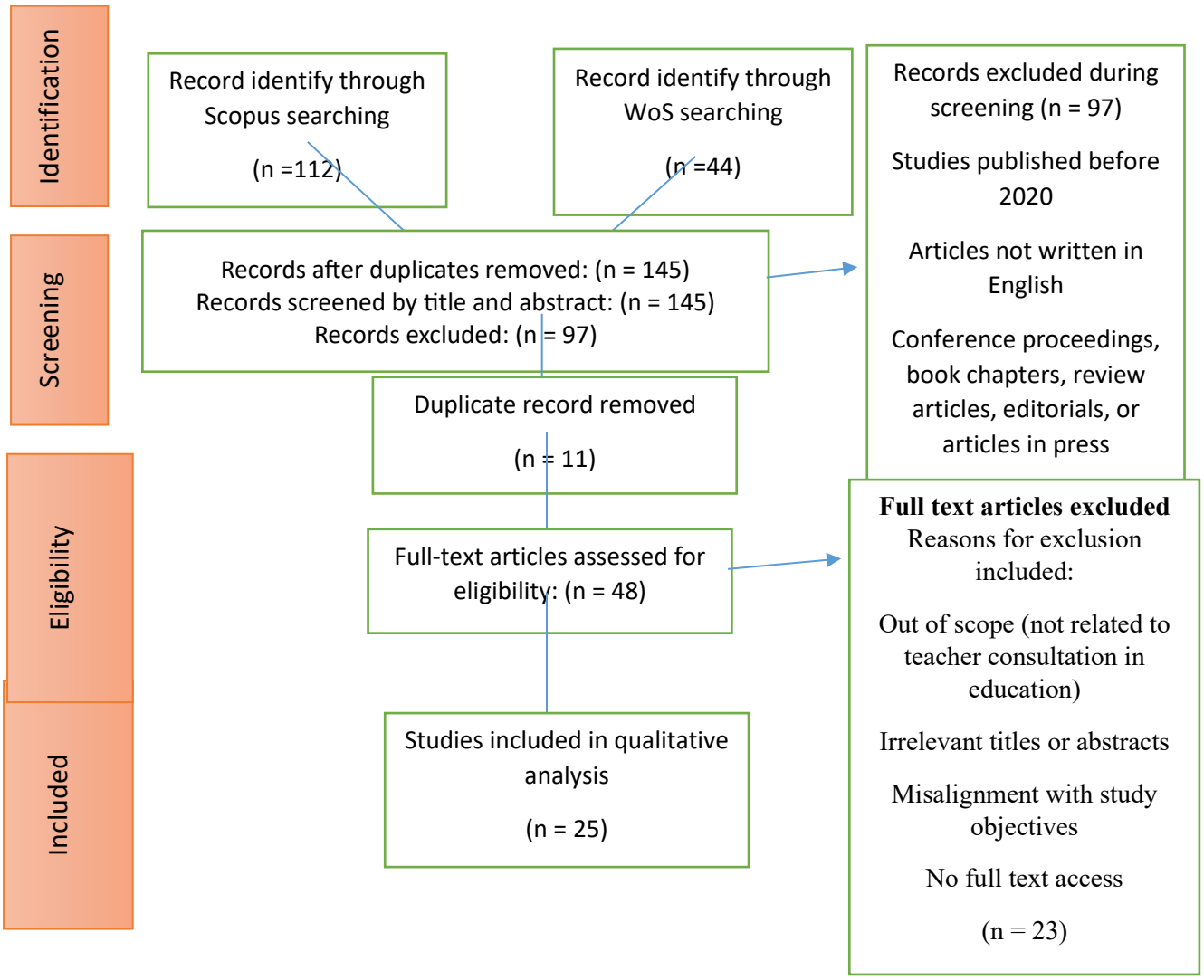


FIGURE 2. Flow diagram of the proposed searching study

RESULT AND FINDING

4.1 Quality Appraisal Summary of Included Studies

A systematic quality appraisal was undertaken for all 25 studies included in this review. The evaluation was based on six predefined quality assessment (QA) indicators adapted from the Joanna Briggs Institute (JBI) and PRISMA methodological guidance: (i) clarity of research purpose, (ii) significance and practical contribution of the study, (iii) transparency and rigour of methodology, (iv) clarity in the definition and operationalisation of concepts, (v) contextualisation through comparison with existing literature, and (vi) articulation of study limitations.

Each study was individually assessed against these six QA indicators. A scoring rubric was applied whereby each criterion was rated as follows: 1 (fully met), 0.5 (partially met), or 0 (not met). The cumulative score for each study, with a maximum possible score of 6.00, reflected the methodological robustness and thematic alignment of the study within the review framework.

Table 4 provides a summarised breakdown of the appraisal results across the 25 studies. This tabulation enables a transparent comparison of study quality, highlighting the overall rigour and relevance of the selected body of literature. Only studies attaining a minimum acceptable quality threshold were retained to ensure the credibility and empirical soundness of the thematic synthesis that follows.

The highest quality scores were obtained by Otto et al. (2024) [PS12] and Déniz et al. (2023) [PS17], both scoring 6.00 (100%). These studies demonstrated exemplary clarity in research purpose, robust methodological execution, comprehensive conceptual definition, sound theoretical positioning, and a critical reflection of their research limitations.

Conversely, the study by Déniz et al. (2023) [PS24] recorded the lowest quality score of 3.5 (58.33%), primarily due to vague conceptual definitions and a lack of comparative contextualisation or limitation discussions.

The mean quality score across all included studies was 4.69 out of 6.00, indicating a generally high level of methodological quality and thematic alignment within the selected literature base.

Table 4. Quality Assessment of Primary Studies (n = 25)

ID	QA1	QA2	QA3	QA4	QA5	QA6	Total Score	% by Max PS
PS1	1	1	0.5	1	0.5	0.5	4.5	75.00%
PS2	1	1	1	1	0.5	0.5	5.0	83.33%
PS3	1	1	1	1	0.5	0.5	5.0	83.33%
PS4	1	1	1	1	0	0	4.0	66.67%
PS5	1	1	1	1	0.5	0	4.5	75.00%
PS6	1	1	1	0.5	0.5	0	4.0	66.67%
PS7	1	1	1	1	0.5	0.5	5.0	83.33%
PS8	1	1	0.5	1	0.5	0.5	4.5	75.00%
PS9	1	1	1	0.5	1	0.5	5.0	83.33%
PS 10	1	1	0.5	0.5	0.5	0.5	4	66.67%
PS11	1	1	1	1	0.5	0.5	5.0	83.33%
PS12	1	1	1	1	1	1	6.0	100.00%
PS13	1	1	0.5	1	1	0.5	5.0	83.33%
PS14	1	1	0.5	0.5	0.5	0.5	4.0	66.67%
PS15	1	1	1	1	0.5	1	5.5	91.67%
PS16	1	1	1	0.5	0.5	0.5	4.5	75.00%
PS17	1	1	1	1	1	1	6.0	100.00%
PS18	1	1	1	1	0.5	0.5	5.0	83.33%
PS19	1	1	0.5	1	0.5	1	5.0	83.33%
PS20	1	1	0.5	0.5	0.5	0.5	4.0	66.67%
PS21	1	1	1	1	0.5	1	5.5	91.67%
PS22	1	1	0.5	0.5	0.5	0.5	4.0	66.67%
PS23	1	1	0.5	0.5	0.5	0.5	4.0	66.67%
PS24	1	0.5	0.5	0.5	0.5	0.5	3.5	58.33%
PS25	1	1	1	1	1	0.5	5.5	91.67%

4.1 Communication and Trust-Building

Effective teacher consultation is fundamentally rooted in robust communication and mutual trust, which together serve as the structural backbone for meaningful collaboration and sustained professional growth [113]. Without open dialogue, teachers often experience consultation as superficial, fragmented, or disconnected from pedagogical realities. Genuine communication fosters not only the exchange of strategies and experiences but also cultivates reflective practice and a sense of shared professional identity [114]. When educators feel respected and understood, they are more inclined to contribute ideas, receive feedback constructively, and commit to joint problem-solving efforts.

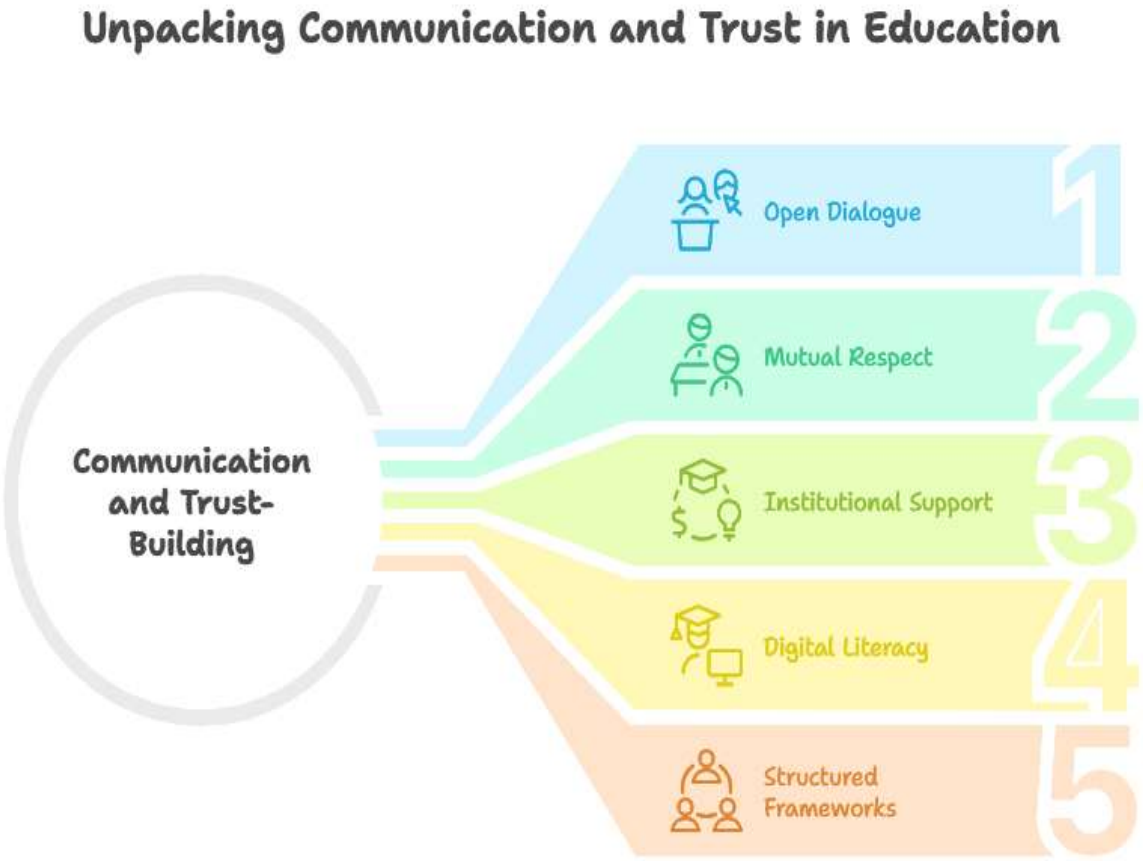
Trust, meanwhile, operates as both an interpersonal catalyst and a systemic necessity within consultation processes. In contexts where teachers face high curricular demands, evolving assessment policies, and increasing student diversity, trust enables them to navigate challenges with confidence and clarity [115]. It reduces professional isolation and creates psychological safety essential for teachers to openly share vulnerabilities and seek support without fear of judgment. This emotional and cognitive security encourages critical reflection and innovation, which are key traits of adaptive teaching and continuous professional development [116].

Moreover, the role of institutional support in embedding trust-building cannot be overstated. In contemporary educational settings, where digital integration and interdisciplinary collaboration are accelerating, educators increasingly rely on structured systems that endorse trust through transparent policies, equitable leadership, and accessible resources [117]. Schools that embed mechanisms such as mentoring systems, collaborative digital platforms, and feedback cycles within their operational culture help to normalize consultation and elevate it beyond episodic interaction.

The transition toward digitalized professional learning environments has transformed the dynamics of trust-building. Digital platforms, while offering expansive opportunities for collaboration, can widen participation gaps if trust-related enablers are absent. Some studies reveal disparities in digital consultation competence, often influenced by demographic factors, institutional readiness, and levels of digital confidence [118]. Thus, inclusive professional development initiatives that integrate digital literacy with emotional and relational competencies are essential. When teachers are equipped with the skills to engage confidently and ethically in online consultation, the depth and reach of collaborative practice can increase significantly [119].

Additionally, community-based consultation models show promise in strengthening trust, particularly among early-career teachers and those in under-resourced contexts. These models emphasize relationship-building, social learning, and context-sensitive reflection, helping teachers develop a shared understanding of purpose and pedagogy. Trust is reinforced when educators feel their voices are acknowledged, their cultural contexts are respected, and their contributions align with collective goals [120].

Ultimately, communication and trust-building are not ancillary features but indispensable pillars of effective consultation. Their presence determines whether consultation evolves into a transformative practice or remains a procedural formality. When aligned with institutional priorities and supported by inclusive systems both technological and relational trust and communication create the conditions necessary for sustained pedagogical innovation, lifelong learning, and systemic improvement in education [121].



3.3 Collaborative Problem-Solving Strategies

Collaborative problem-solving stands as a central pillar in teacher consultation, offering structured pathways for educators to collectively address the growing complexity of contemporary educational challenges [122]. Far beyond a technical exercise, it is a dynamic process of shared meaning-making, reflective dialogue, and co-constructed solutions. In educational systems increasingly shaped by technological integration, diverse learner needs, and institutional transformation, collaborative engagement becomes not only desirable but imperative [124].

The integration of digital tools into consultation practices has significantly expanded the potential of collaborative problem-solving. These tools serve as catalysts for active engagement, allowing teachers to visualize ideas, structure discussions, and build collective knowledge even across remote or decentralized settings [125]. During times of crisis, such as the COVID-19 pandemic, digital collaboration platforms demonstrated their value in sustaining professional discourse and maintaining instructional continuity [126]. However, the long-term success of such approaches depends not merely on technological availability but on the capacity of teachers to navigate these platforms with confidence, creativity, and inclusivity [127].

A recurring theme in the reviewed studies is the uneven distribution of digital competencies among educators, particularly among early-career teachers or those from under-resourced contexts [128]. This disparity underscores the necessity of equitable access to digital infrastructure, training opportunities, and mentorship [124]. Collaborative problem-solving cannot thrive in environments where teachers feel alienated or underprepared. Thus, institutional investment in inclusive capacity-building is critical to ensure all educators, regardless of background, are positioned to contribute meaningfully to joint initiatives.

Beyond technological readiness, collaborative problem-solving gains its potency when embedded within pedagogical models that promote interdisciplinary thinking, civic engagement, and learner-centered design [129]. Innovative approaches such as community-based and project-oriented learning frameworks illustrate how problem-solving can be contextualized within real-world scenarios. These frameworks encourage teachers to act not merely as transmitters of knowledge but as co-learners and designers of solutions, cultivating both professional agency and collective efficacy [130].

Crucially, collaborative problem-solving also functions as a platform for professional identity formation. When teachers engage in sustained, reflective dialogue to resolve instructional challenges, they strengthen not only their technical competencies but also their sense of belonging and shared mission. It is through these collaborative engagements that educators develop a deeper understanding of their role as agents of change within schools and society [131].

In sum, collaborative problem-solving is a core competency within teacher consultation that holds transformative potential when supported by structured systems, equitable digital access, and innovative pedagogical models. For such practices to become embedded and sustainable, educational institutions must move beyond episodic workshops or fragmented initiatives. They must instead institutionalize collaborative inquiry as an integral part of teacher professional development, leadership formation, and school culture [132]. When teachers are empowered to collaborate with intention, supported by inclusive systems and guided by shared pedagogical values, collaborative problem-solving can drive systemic improvement and elevate the quality of education for all learners [133].

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3.4 Professional Development Through Consultation

In the evolving landscape of 21st-century education, consultation has emerged as a pivotal mechanism for professional development, especially at the intersection of digital transformation and pedagogical innovation. It extends beyond the provision of technical advice to function as a reflective, collaborative, and adaptive process through which educators refine their instructional philosophies, explore innovative methodologies, and cultivate a commitment to lifelong learning [134]. The increasing prominence of digital education particularly during and after the COVID-19 pandemic has accentuated the necessity for robust teacher support systems in which consultation is embedded as a foundational developmental component.

A significant contribution of consultation to professional growth lies in its capacity to catalyse pedagogical innovation. Confronted with diverse learner needs and swiftly evolving technological tools, teachers rely on consultative practices to bridge theoretical frameworks with practical application in the classroom. Peer and mentor collaborations enable educators to interpret novel instructional models and tailor them to their specific teaching contexts. This need becomes especially evident in digital environments, where hybrid instructional design requires a blend of synchronous and asynchronous strategies [135].

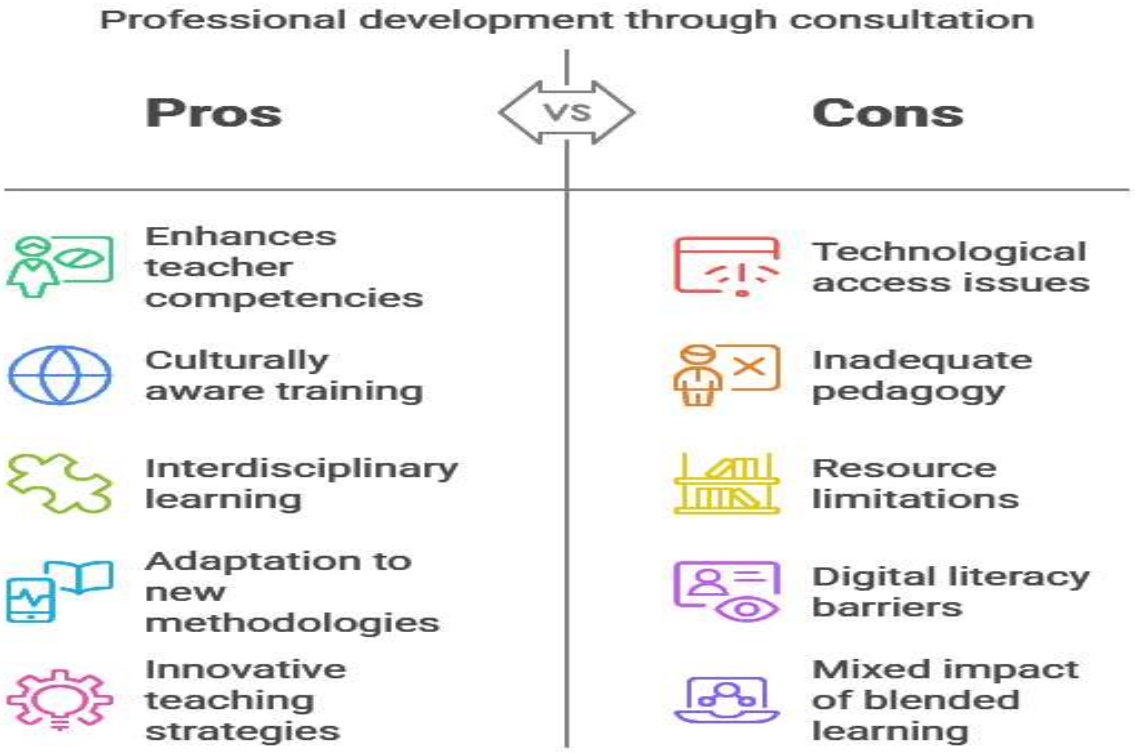
Consultation empowers educators to evaluate the relevance and utility of digital tools by aligning them with learners' needs, curricular goals, and institutional standards. Reflection, as a central element of professional consultation, enhances pedagogical judgment and nurtures critical awareness, creativity, and ethical mindfulness in instructional practice [136]. Structured consultation sessions prompt educators to revisit their assumptions, assess intervention outcomes, and iteratively refine their teaching strategies.

Such a recursive process, typically anchored in observation-feedback-reflection cycles, fosters a culture of continuous improvement essential for sustainable professional advancement. Evidence from the reviewed literature further underscores the importance of institutional preparedness in supporting consultation-driven professional development. In contexts where digital infrastructure is insufficient or inequitably distributed, the transformative potential of consultation is severely constrained [137].

Educators in under-resourced settings often encounter challenges such as poor internet access, outdated technology, and a lack of institutional encouragement. As such, consultation must be integrated into broader institutional strategies encompassing digital provisioning, resource-sharing systems, and sustained professional learning networks. Moreover, meaningful professional development through consultation necessitates a deliberate focus on inclusion and equity.

Structural barriers including gender inequity, socio-economic disparities, and geographic isolation affect the extent to which teachers benefit from consultative initiatives. To address these inequities, consultation frameworks must be intentionally designed to accommodate and empower diverse educator populations. Initiatives that support female educators in marginalised areas or that are responsive to linguistic and cultural heterogeneity are essential to ensuring equitable access to professional learning [138].

In summary, consultation serves as both a strategic mechanism and a professional disposition for teacher development. It promotes pedagogical experimentation, reinforces reflective engagement, and bridges policy aspirations with practical realities. To maximise its impact, consultation should be institutionalised through inclusive planning, supported by adequate infrastructure, and responsive to the pedagogical demands of the digital age. Through this integrative approach, educational systems can foster a cadre of empowered, adaptable, and future-ready teachers who possess not only technical proficiency but also the capacity to navigate the complex terrain of contemporary education [139].



3.5 Digital Competency and Integration

The emergence of digital learning as a foundational aspect of contemporary education has redefined not only pedagogical practices but also the very contours of teacher professional identity. The abrupt shift to remote teaching during the COVID-19 pandemic compelled educational institutions worldwide to accelerate digital adoption, thereby exposing

significant gaps in digital preparedness particularly among educators lacking prior training or exposure to educational technologies [140]. This situation illuminated the uneven distribution of digital readiness, with many teachers encountering challenges stemming from limited access, inadequate training, and diminished self-efficacy in navigating digital platforms [141].

In response to these challenges, structured digital learning initiatives began to gain prominence, offering a more deliberate and coordinated approach to enhancing teachers' digital capacity. These programmes affirmed that technological availability alone is insufficient; rather, effective digital integration necessitates strategic planning, institutional support, and the empowerment of educators as change agents [142]. Initiatives that integrate pedagogical training with digital skill development have demonstrated greater efficacy than those focused solely on technical competencies, as they enable educators to meaningfully embed technology within instructional design and learning outcomes [143]. As a result, digital competency has evolved into a core professional standard, now recognised as indispensable rather than supplementary [144].

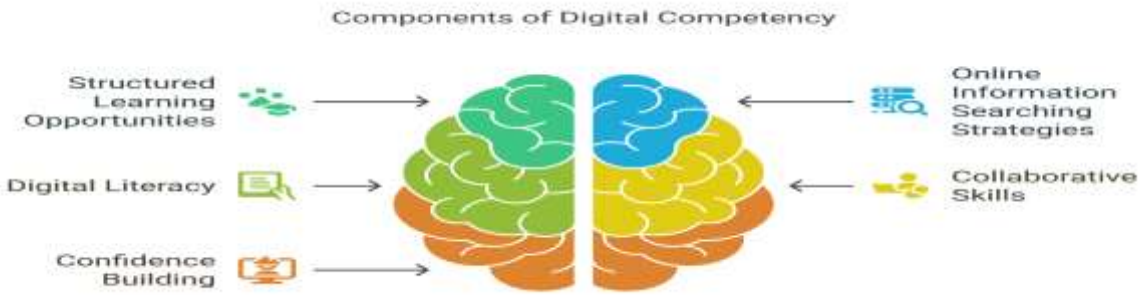
A more nuanced view reveals digital competency to be a multidimensional construct encompassing technical proficiency, critical digital literacy, ethical digital engagement, and the capacity to curate, synthesise, and apply digital content within varied pedagogical contexts [143]. Effective educators in the digital era must transition fluidly between roles as instructional designers, facilitators, collaborators, and reflective practitioners. Consequently, professional development efforts must move beyond surface-level training and towards deeper pedagogical transformation that aligns with broader educational values and contextual realities [145].

However, the digital shift while offering expansive opportunities can also perpetuate and exacerbate existing structural inequalities. Disparities in access to devices, inconsistent internet infrastructure, and gender-based digital divides have been documented across various settings, particularly within teacher education institutions [146]. Some pre-service teachers enter the profession with advanced digital fluency, while others remain digitally marginalised, further widening the equity gap. Addressing these disparities requires inclusive and equity-driven frameworks that ensure all educators regardless of background can participate meaningfully in digital transformation [147].

Community-based approaches that integrate digital literacy with collaborative, context-sensitive, and socially inclusive pedagogies have shown promise in equipping new teachers with the competencies necessary for digital teaching. These models simultaneously help reduce digital disparities while fostering a more holistic understanding of professional identity in digital environments [148]. Equally vital is the role of institutional leadership and governance in embedding digital competency into educational quality assurance mechanisms. By incorporating digital literacy into teacher standards, appraisal systems, and accreditation policies, institutions can help institutionalise digital capacity as a sustained and measurable element of professional excellence [149].

To ensure that both novice and experienced teachers evolve in tandem with technological advancements, digital training must also be integrated into continuous professional development structures. In doing so, education systems can cultivate agile, digitally proficient educators capable of responding to dynamic teaching contexts and learner needs [150].

In conclusion, digital competency is no longer a peripheral skill but a central pillar of 21st-century teaching. Its effective integration requires structured, inclusive, and contextually grounded initiatives that are anchored in equity, lifelong learning, and pedagogical integrity [151]. When approached with clarity of vision and sustained commitment, digital integration becomes a transformative force that not only enhances the quality of teaching and learning but also redefines the culture and architecture of professional development in education.



5. DISCUSSION

This systematic literature review elucidates the intricate nexus between teacher consultation, professional development, and digital literacy three interdependent domains that collectively underpin educational transformation in the 21st century [153]. The integration of these elements is critical for equipping educators with lifelong learning competencies, enhancing resilience, and fostering adaptability in complex and ever-evolving pedagogical landscapes [154]. While the analysed studies provide robust theoretical and structural insights, critical gaps persist in the practical enactment of these insights, particularly in diverse, resource-variable educational contexts [155].

Converging themes emerging from the synthesis of literature namely, communication, collaboration, and technological integration highlight the imperative for educational systems to adopt holistic and inclusive consultation frameworks. There is growing recognition of the need to move from informal, episodic peer support to structured, policy-driven, and digitally supported models of teacher consultation [156]. However, the review also reveals a persistent tension between theory and practice, as many systems struggle to operationalise these frameworks in ways that are sensitive to contextual disparities and structural inequalities [157].

The findings suggest that consultation must evolve to accommodate contemporary educational demands, including rapid technological change and heightened attention to inclusion. As teachers grapple with increasingly diverse learner needs and shifting digital norms, consultation offers a vital platform for developing innovative, adaptive teaching strategies that resonate within real-world classrooms [158]. Moreover, collaborative problem-solving within structured consultation practices facilitates not only pedagogical advancement but also strengthens teachers' professional agency and instructional quality [159]. Such collaborative models enable educators to engage as co-constructors of knowledge and instructional design, rather than passive recipients of prescriptive guidance.

The review also underscores ongoing disparities in digital access and competency, which undermine equitable participation in consultation processes. While certain institutions have embedded digital tools within their professional learning infrastructure, teachers in under-resourced environments continue to face substantial obstacles, including limited internet access, inadequate devices, and insufficient digital literacy training [160]. These structural limitations restrict meaningful engagement and risk exacerbating existing educational divides. Addressing these disparities necessitates systemic support strategies that combine technological access with professional development models tailored to varied local realities [161].

Inclusive initiatives that blend digital competence with socio-emotional development, context-aware pedagogy, and sustained mentorship are especially critical. By embedding such frameworks into institutional practice, schools and educational authorities can empower teachers to use digital platforms not only for consultation but also for reflective learning, peer collaboration, and sustained innovation [162].

In sum, the literature confirms that effective teaching in contemporary contexts demands a professional culture defined by collaboration, reflection, and digital agility. Teacher consultation when integrated into comprehensive professional development ecosystems holds transformative potential. For education systems to harness this potential fully, they must create cohesive, inclusive, and resilient frameworks that foreground equitable access, structured dialogue, and strategic alignment with educational goals. When educators are supported to participate meaningfully in digitally facilitated and inclusively designed consultation processes, the result is a more responsive, robust, and future-ready teaching profession [163].

5.1 The Role of Communication and Trust-Building

The review reaffirms that communication and trust represent foundational pillars in any effective teacher consultation framework. Open dialogue, mutual respect, and shared pedagogical values emerged consistently across the reviewed literature as catalysts for sustained collaboration, fostering critical reflection and joint problem-solving among educators. These interpersonal elements do more than support relationship-building they shape a professional culture rooted in psychological safety, where teachers feel valued, heard, and motivated to innovate within their teaching practices [164].

At an institutional level, the literature underscores the pivotal role of school leadership and policy structures in embedding trust systematically. When leadership prioritises transparent communication channels and establishes formal mechanisms to support collaboration such as regular consultation sessions, distributed leadership, and clear role expectations teacher engagement in consultative processes is significantly enhanced. However, despite the well-theorised benefits of trust-building, the review highlights a persistent lack of empirical models that operationalise trust in everyday school contexts, particularly in environments constrained by limited resources, high teacher workload, or rigid hierarchies [165].

To address this gap, future research should focus on empirically grounded, context-sensitive models that render trust-building both observable and replicable. This includes developing adaptable strategies such as peer mentoring, participatory decision-making forums, and collaborative reflective practices that allow trust to be cultivated through practice rather than prescription. Such approaches must also consider sociocultural and systemic variations across schools to ensure relevance and sustainability [166].

5.2 Collaborative Problem-Solving in Digital Contexts

The growing reliance on digital platforms for collaborative problem-solving marks a pivotal transformation in teacher consultation practices. As schools rapidly transitioned to virtual modalities especially during and following the COVID-19 pandemic digital technologies emerged as critical enablers of teacher engagement. Tools such as digital concept mapping and online professional learning communities supported real-time idea exchange, facilitated collaborative inquiry, and enabled collective decision-making, thereby helping sustain instructional continuity amidst educational disruption [167].

Yet, the integration of digital collaboration has also introduced significant challenges that complicate equitable implementation. The reviewed literature highlights pronounced disparities in digital literacy, access to technological infrastructure, and institutional support across educational contexts. While teachers in well-resourced urban settings often benefit from high-speed internet and sophisticated platforms, their counterparts in rural or underserved communities frequently encounter infrastructural and training limitations that inhibit meaningful engagement [168].

To address these disparities, the literature emphasises the importance of inclusive and differentiated digital competency frameworks. Digital equity cannot be presumed; rather, it must be cultivated intentionally through professional development tailored to context, strategic infrastructure investment, and promotion of accessible technologies, including open-source and low-bandwidth solutions [169]. Moreover, collaborative problem-solving must extend beyond mere technical interaction it should be pedagogically embedded, culturally responsive, and adaptable to varied teaching environments.

The review advocates for hybrid consultation models that blend face-to-face and digital interaction as a pragmatic approach, particularly in resource-constrained contexts. Such models may incorporate mobile-based tools, asynchronous collaboration platforms, and community learning hubs to support sustained teacher collaboration even in the absence of ideal technological conditions. Importantly, these strategies reflect a broader commitment to democratising consultation and making it accessible to all teachers regardless of geographic or socio-economic location [170].

In doing so, the transformative potential of digitally mediated collaborative consultation can be more equitably realized offering pathways for innovation, shared ownership of professional learning, and systemic improvement across diverse educational landscapes.

5.3 Professional Development Through Consultation

The literature reviewed consistently identifies professional development as a central outcome of effective teacher consultation, particularly in response to the evolving demands of digital and inclusive education [171]. Rather than viewing professional development as a series of isolated training events, the evidence positions consultation as a continuous, collaborative, and contextually grounded process. It empowers teachers to refine pedagogical strategies, engage in reflective inquiry, and adopt adaptive mindsets that support lifelong learning.

A prominent theme emerging across the studies is the value of culturally responsive and context-sensitive consultation frameworks. In educational environments shaped by cultural pluralism and uneven resource distribution, consultation enables teachers to navigate challenges while promoting equity and inclusivity [172]. Community-anchored learning models, especially those embedded within local practices, have demonstrated success in enhancing the digital and collaborative competencies of pre-service teachers, while simultaneously cultivating social responsibility and pedagogical flexibility [173].

Moreover, the incorporation of lifelong learning philosophies into consultation-driven professional development highlights a paradigm shift towards future-oriented and adaptive teacher training. When teachers are granted space to collaborate, reflect, and respond to emergent educational realities, they become active agents of pedagogical innovation and professional renewal [174]. Such reflexive engagement allows educators to internalise self-directed learning practices, strengthening both individual agency and systemic capacity.

Despite these promising developments, the current literature reveals a gap in longitudinal evidence assessing the sustained impact of consultation-led professional development. Much of the existing research focuses on short-term outcomes or is confined to specific educational contexts. To bridge this gap, future studies should adopt longitudinal

and mixed-method designs capable of tracing the development of teacher competencies over time and correlating them with student learning outcomes and institutional change [175].

In conclusion, professional development via teacher consultation must be recognised as a multifaceted and evolving process, tailored to the diverse contexts in which educators operate. Strategic investment in comprehensive and inclusive consultation frameworks can empower teachers to meet the demands of twenty-first-century education while advancing equity and improving learner outcomes across the board [176, 177].

5.4 Addressing Challenges in Marginalized Communities

The transition to remote learning during the COVID-19 pandemic brought long-standing educational inequalities into sharper focus, particularly within marginalised and underserved communities. For adult learners, women, and those in rural or economically disadvantaged areas, barriers such as poor internet connectivity, lack of access to digital devices, and limited technological literacy significantly impeded their participation in digital consultation platforms and online learning environments [178]. The literature reviewed demonstrates a growing awareness of these issues and offers emerging frameworks for addressing them, including the establishment of institutional knowledge management systems, leveraging local community networks for resource mobilisation, and designing hybrid consultation models that incorporate offline components for learners without consistent internet access [173].

Despite these efforts, the reviewed studies suggest that existing responses remain fragmented, reactive, and insufficiently theorised. A more systemic and policy-driven approach is urgently required one that embeds principles of equity and accessibility at the core of digital consultation frameworks. Of particular concern is the minimal attention paid to gendered dimensions of digital exclusion. Although several studies recognise gender-based constraints, there remains a dearth of gender-responsive pedagogical strategies and institutional policies that actively address the exclusion of female educators and learners from digital consultation processes [179]. Cultural norms, caregiving responsibilities, and institutional neglect continue to hinder meaningful participation by women in numerous educational settings [180].

In light of these findings, the literature calls for a reorientation of digital transformation agendas in education toward inclusive and intersectional frameworks. Future research must explore the complex interplay between gender, geography, and socioeconomic status in shaping access to and engagement with consultation practices. Such research should inform the design and implementation of targeted interventions, including digital equity audits, participatory design models with community stakeholders, and capacity-building initiatives tailored to marginalised contexts [181].

Ultimately, addressing the challenges faced by marginalised communities requires not only technological solutions but also a commitment to equity-centred policy and practice. Consultation frameworks that are inclusively designed and contextually responsive can play a transformative role in ensuring that all educators regardless of background have equitable opportunities to engage in professional development and collaborative learning. When aligned with local realities and supported by robust institutional mechanisms, such frameworks can help close the digital divide and promote more just and resilient educational ecosystems.

5.5 Limitations and Future Research Directions

While this systematic review offers valuable insights into the intersections of teacher consultation, digital literacy, and professional development, several limitations must be acknowledged to contextualise the findings and guide future inquiries. First, the study was confined to peer-reviewed journal articles indexed in Scopus and Web of Science. Although this criterion ensured scholarly rigour and credibility, it may have inadvertently excluded pertinent insights from grey literature, policy briefs, practitioner reports, and non-indexed local sources particularly those from developing countries where consultation practices are often underreported despite their pragmatic significance [182].

Second, the temporal scope of the review focused exclusively on publications between 2020 and 2025. While this decision aligns with the post-pandemic educational context and captures recent innovations in consultation practices, it limits the historical perspective necessary for evaluating long-term trends and continuities in the field. Integrating pre-pandemic literature in future reviews may allow for a more comprehensive understanding of how consultation models have evolved in response to global crises and pedagogical shifts [183, 184, 185].

Third, the methodological profile of the reviewed studies reveals a predominance of qualitative and conceptual analyses, with only a limited number offering empirical evidence through experimental, longitudinal, or mixed-method research designs. This restricts the generalisability of the conclusions and hampers the formulation of scalable consultation models that can inform systemic policy reform across educational contexts. Future research must address this evidentiary gap by implementing longitudinal studies that assess the sustained impact of consultation on teacher efficacy, student learning outcomes, and institutional transformation over time [186, 187].

Moreover, although this review identified recurring themes such as communication and trust-building, collaborative problem-solving, and digital integration, these elements remain insufficiently theorised in the context of marginalised and under-resourced communities. Issues of digital divide, cultural marginalisation, and gender disparity were acknowledged but not comprehensively addressed within most studies, pointing to a need for equity-oriented research agendas. Future investigations should adopt intersectional and context-sensitive frameworks to uncover how systemic inequalities shape consultation practices, and how inclusive mechanisms can be operationalised within diverse educational environments [188, 189].

Finally, a linguistic limitation constrains the scope of this review: only studies published in English were considered. This potentially excluded regionally significant contributions in non-English languages, particularly from non-Western academic communities. As global education becomes increasingly pluralistic, it is imperative that future reviews engage with multilingual and cross-cultural sources to broaden the epistemological foundations of consultation research [190, 191].

In sum, while this review contributes to a growing body of knowledge on teacher consultation in the digital era, it also underscores the importance of more diverse, empirically grounded, and contextually nuanced studies. Addressing these limitations will strengthen both the theoretical and practical dimensions of consultation research and ensure that future educational reforms are inclusive, sustainable, and globally relevant [192].

6. CONCLUSION

This systematic literature review set out to examine the evolving architecture of teacher consultation practices within contemporary educational settings, with particular attention to collaborative problem-solving, digital integration, and the cultivation of lifelong learning competencies. Drawing upon a rigorous screening and synthesis of 112 peer-reviewed journal articles indexed in Scopus and Web of Science between 2020 and 2025, the review illuminated recurring themes that highlight the transformative potential of teacher consultation in navigating the multifaceted demands of 21st-century education [193].

The synthesis of findings reveals that effective consultation is underpinned by trust-based communication, inclusive collaboration, and institutional commitment to continuous professional development. These elements not only foster relational dynamics among educators but also facilitate the creation of reflective pedagogical cultures that support innovation, adaptability, and shared accountability [194]. Central to this process is the embedding of consultation within structured systems that prioritise psychological safety, open dialogue, and shared pedagogical values. Digital competency and collaborative engagement were especially significant in remote and hybrid teaching contexts, where consultation often served as both a pedagogical support mechanism and a driver of innovation [195].

Moreover, the review emphasised that digital tools, when embedded within coherent professional development programmes, do more than enhance technical skills they cultivate strategic pedagogical thinking, enable differentiated instruction, and support the alignment of curriculum goals with learner needs [196]. Programmes that integrate digital fluency with contextually grounded teaching practices emerged as particularly effective in preparing educators for complex educational challenges, both during and beyond crisis contexts [197].

However, persistent challenges remain, especially within marginalised and under-resourced educational environments. Issues such as unequal access to digital infrastructure, gendered barriers to participation, and the lack of culturally responsive consultation models continue to impede the equitable diffusion of consultation practices [198]. These disparities demand systemic reforms rooted in inclusivity, sustainability, and policy-level alignment. Equitable consultation cannot be achieved without a deliberate focus on intersectionality, contextual responsiveness, and institutional accountability [199].

While this review has consolidated critical knowledge in the field, it also recognises its own limitations including linguistic restrictions, geographic concentration, and a shortage of longitudinal evidence. These gaps present valuable opportunities for future inquiries to investigate the evolution of consultation frameworks across diverse socio-educational settings. Longitudinal and comparative research designs, particularly those that incorporate voices from historically underrepresented communities, will be essential for strengthening the empirical foundations of teacher consultation research [200].

In conclusion, this review affirms that consultation is no longer a peripheral or auxiliary practice, but a central pillar in fostering educator agency, instructional innovation, and educational equity. The institutionalisation of consultation as a systematic, evidence-informed, and inclusive professional norm is crucial for equipping teachers with the capabilities

needed to navigate complex pedagogical terrains. When consultation is embedded within strategic frameworks supported by digital tools, mutual trust, and responsive leadership, it becomes a transformative lever for reshaping the future of education globally [201, 202].

Conflicts of Interest

The authors affirm that there are no conflicts of interest that could have influenced the design, execution, or reporting of this systematic literature review. All stages of the review from article selection and data extraction to synthesis and interpretation were conducted independently and objectively, without any financial sponsorship, institutional pressure, or personal relationships that might introduce bias. The authors relied exclusively on scholarly sources retrieved from recognised academic databases and ensured that every claim was grounded in peer-reviewed evidence. Furthermore, no external funding was received, and no affiliations shaped the conclusions drawn. The integrity of this research was upheld through strict adherence to ethical research standards, scholarly rigour, and transparent reporting practices. This declaration reflects the authors' unwavering commitment to maintaining the highest standards of academic honesty, neutrality, and professional responsibility throughout the review process.

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