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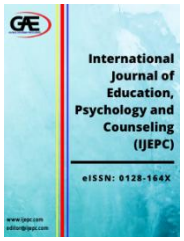

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DOCTORAL STUDENT SOCIALISATION IN HIGHER EDUCATION: A SYSTEMATIC REVIEW OF ITS RESEARCH LANDSCAPE AND SHAPING CONDITIONS

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Abstract:

Doctoral socialisation is described as the process through which students learn, negotiate, and participate in the norms, roles, relationships, and practices of scholarly communities. Existing reviews have examined specific aspects of doctoral education, including supervision and mentorship, supervisory competence, and epistemic injustice, but the wider research landscape and the conditions shaping doctoral socialisation remain insufficiently integrated. This review examines how doctoral student socialisation has been studied and brings together evidence on the antecedent and contextual conditions that may shape it. Scopus was searched for English-language journal articles published from 2015 to 2026, coverage for 2026 was limited to publications indexed by the search date. The review included 165 empirical studies. RQ1 used descriptive synthesis, while RQ2 used thematic synthesis to identify and organise shaping conditions. The evidence base was recent, geographically uneven, and dominated by qualitative and interpretive research. The synthesis identified six condition families: supervisory and mentoring; peer, network, and community; programmatic and institutional; disciplinary and academic-cultural; structural, cultural, and inequality-related; and individual and psychological. Doctoral stage operated as a cross-cutting context with the relevance of particular conditions changing across the doctoral trajectory. The findings show that supervision is one part of a broader set of conditions shaping doctoral socialisation. Across studies, socialisation depended on how access to relationships, institutional opportunities, disciplinary norms, recognition, and resources was

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organised across contexts and stages. The review also clarifies the distinction between shaping conditions, socialisation processes, and outcomes. For doctoral education, the findings highlight the value of clearer expectations, broader sources of support, meaningful opportunities for scholarly participation, and more equitable access to resources and recognition.

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Keyword:

Doctoral Education; Doctoral Socialisation; Higher Education; Systematic Literature Review

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Introduction

Doctoral education involves more than producing a thesis, it also brings students into scholarly communities where they learn how knowledge is produced, communicated, evaluated, and legitimised. Weidman et al. (2001) describe graduate socialisation as a process through which students develop and negotiate the knowledge, values, roles, and orientations needed for advanced professional membership. Doctoral students experience this process through formal and informal participation in research, supervision, teaching, peer interaction, and disciplinary communities (Austin, 2002; Gardner, 2007).

Doctoral socialisation does not unfold in the same way for all students. Students begin their doctoral studies with different experiences and resources and work within different disciplinary, institutional, and relational environments. Gardner (2007) identified variation across disciplines and stages of doctoral study, while Sweitzer (2009) highlighted the importance of developmental networks beyond the supervisor-student relationship. More recent work has also shown the importance of programme environments and scholarly guidance (Guo et al., 2018), competing institutional logics (Zheng, 2019), and access to academic writing communities (Phyo et al., 2025).

Doctoral Socialisation as a Multilevel and Uneven Process

Supervision may be the most visible relationship in doctoral education, but doctoral socialisation takes place across multiple levels. Supervisors, faculty, peers, research teams, and professional networks are part of wider programme and institutional environments that include funding, formal requirements, support systems, disciplinary norms, and patterns of power and inequality. Together, these relationships and environments influence students' access to information, recognition, opportunities for scholarly participation, and academic communities.

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Access to these opportunities is not equally distributed. Gendered and racialised relations can limit access to support and recognition (Bourabain, 2024), while international students may have to navigate linguistic and cultural expectations as well as disciplinary expectations (Phyo et al., 2025; Zheng, 2019). These experiences may also change over the course of doctoral study. One longitudinal study found declines in some relational indicators over time, showing that students' relational experiences do not necessarily improve as they progress through the doctorate (Jwa & Berdanier, 2026).

A multilevel perspective also shows that doctoral socialisation cannot be explained only by individual characteristics or experiences. Unclear expectations, weak or controlling supervision, exclusionary cultures, and unequal resources may limit students' participation. In contrast, accessible guidance, supportive peer communities, clear expectations, and inclusive environments can create more opportunities for participation. These differences highlight the need to examine the conditions that shape doctoral socialisation.

Why a Condition-Focused Synthesis Is Needed

Research on doctoral socialisation covers a wide range of topics, including supervision, peer networks, academic writing, interdisciplinary education, international experience, professional identity, career preparation, and inequality. Existing reviews have focused on specific areas, such as supervision and mentorship (Salinas-Perez et al., 2019), supervisory competence (Haley et al., 2025), and epistemic injustice in doctoral education (Gonzales et al., 2024). However, these areas of research have rarely been brought together to show how different conditions shape doctoral socialisation across contexts.

Conceptual precision is equally important. The analytical role of a construct can vary across studies. Mentoring, feedback, networking, writing, and participation can function as processes through which socialisation occurs. Belonging, identity, competence, persistence, and career outcomes can function as consequences or indicators, although studies may position some of these constructs differently. Features surrounding those processes, including availability, accessibility, quality, structure, or power configuration, can operate as antecedent or contextual conditions. Accordingly, this review uses conditions as the organising term because the underlying studies differ substantially in their capacity to support causal inference.

Aim and Review Questions

This review maps how empirical studies have investigated doctoral student socialisation and synthesises the conditions they describe or model as shaping it. It also develops an empirically grounded multilevel framework that keeps conditions conceptually distinct from socialisation processes and outcomes.

- RQ1: How has doctoral student socialisation been investigated across existing empirical studies?
- RQ2: What conditions shape doctoral student socialisation in higher education?

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Methods

Review Design and Reporting

This systematic literature review characterises empirical research on doctoral student socialisation and synthesises the conditions that shape it. The review follows PRISMA 2020 (Page et al., 2021) and the PRISMA-S extension for literature searches (Rethlefsen et al., 2021). The synthesis combines thematic-synthesis principles (Thomas & Harden, 2008) with iterative constant comparison (Boeije, 2002). The heterogeneity of qualitative, quantitative, mixed-methods, and document-based studies made descriptive and thematic synthesis more appropriate than meta-analysis.

Operational Definition and Eligibility Criteria

The review defines doctoral student socialisation as the formal and informal processes through which doctoral students learn, interpret, negotiate, and participate in the knowledge, values, norms, roles, practices, relationships, and identities associated with membership in academic, disciplinary, research, or professional scholarly communities. Research involving doctoral students did not qualify on population alone. Eligibility required substantive attention to entry into, learning within, participation in, adaptation to, or negotiation of relevant scholarly communities.

Eligible studies focused on doctoral/PhD students or reported separable doctoral findings and were situated in higher education. They also had to examine doctoral socialisation, or an equivalent scholarly process, as a substantive concern and to report empirical evidence derived from qualitative, quantitative, mixed-methods, or document-based designs. The review included English-language journal articles published from 2015 to 2026; open-access status did not affect eligibility. Professional-doctorate studies qualified only when they addressed academic, research, scholarly, or higher-education socialisation. Exclusion criteria covered ineligible or inseparable populations, peripheral socialisation, practice-only professional socialisation, non-empirical designs, and other failures to meet the stated criteria.

Information Source and Search Strategy

The review searched Scopus on August 23, 2026, covering publications from 2015 through 2026. Because the search took place before the end of the year, 2026 coverage includes only records indexed in Scopus by that date. The strategy centred on doctoral socialisation and included both spelling variants:

TITLE-ABS-KEY (("doctoral student*" OR "doctoral candidate*" OR "PhD student*" OR "PhD candidate*" OR "doctoral researcher*") AND socialization) AND (LIMIT-TO(DOCTYPE,"ar")) AND (LIMIT-TO(LANGUAGE,"English")) AND PUBYEAR > 2014 AND PUBYEAR < 2027

The wildcard socialization captured both socialisation and socialization. Pilot broadening with terms such as identity, belonging, supervision, and mentoring reduced conceptual specificity, so these terms did not enter the final query independently. The search covered English-language journal articles and did not restrict results by open-access status. It returned 256 records.

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Study Selection

The search produced 256 records and no duplicates, so all records entered title/ abstract/ metadata screening. Screening excluded 56 records. Of these, 26 were non-empirical, review, or conceptual records; 12 involved the wrong population or doctoral stage; and 18 treated socialisations as peripheral, addressed a different phenomenon, or concerned only practice-based professional socialisation. The remaining 200 reports proceeded with a retrieval and detailed eligibility assessment. Eligibility decisions are drawn on titles, abstracts, and indexed information. For ambiguous or boundary-sensitive cases, the reviewer also consulted targeted publishers, repository, or full-text sources. No report was lost at the retrieval stage.

Detailed eligibility assessment excluded 35 reports. Twenty-four did not examine socialisation substantively, treated it as peripheral, or used it only as an outcome or theoretical lens. Ten involved an ineligible population, context, or doctoral stage, and one was a non-analytic experience report. The final review included 165 studies. Figure 1 summarises the selection process.

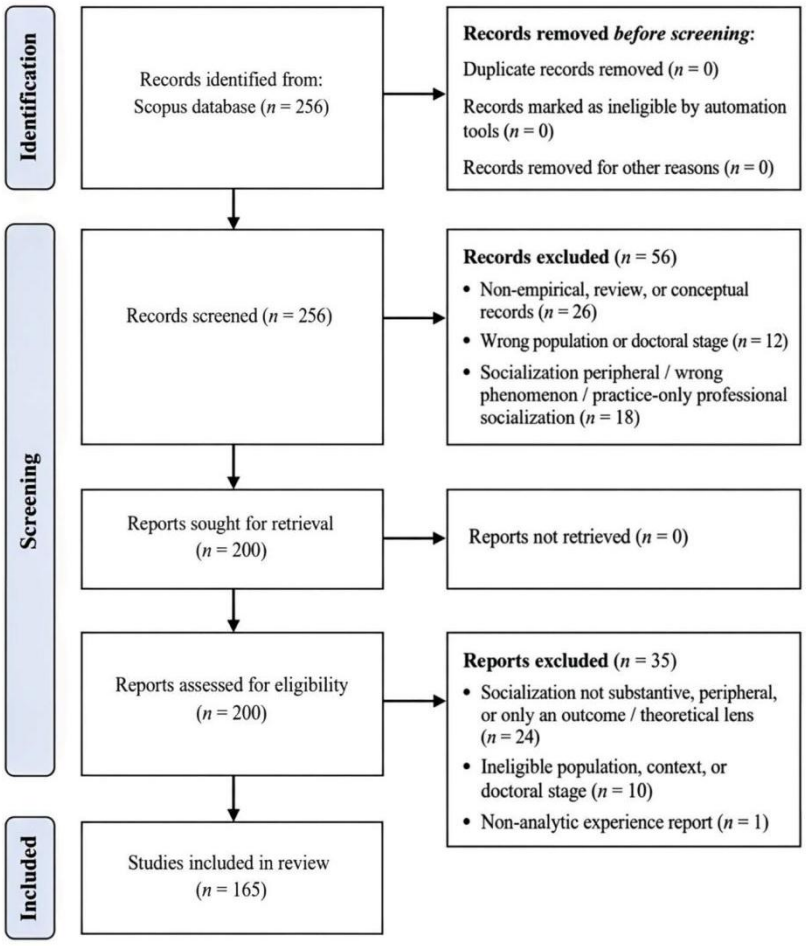

Figure 1: PRISMA 2020 Flow Diagram for Study Selection

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Data Extraction and RQ1 Coding

A structured extraction matrix recorded key study characteristics, including publication year, country or setting, population and context, methodology, study design when identifiable, sample or data source, theory or framework, substantive focus, socialisation centrality, and source information. For RQ1, the analysis focused on publication trends, geographic distribution, methodological approaches, explicit reporting of theory or frameworks, substantive contexts, and the centrality of socialisation within each study.

Coding of methodological design and theoretical framing remained conservative and relied on abstracts and indexed information. When neither source supported a confident design classification, the study received the code design not explicit in available sources. Likewise, the absence of a named framework from the abstract or keywords did not count as evidence that the full article was atheoretical. When needed, study descriptions and targeted publisher or repository sources clarified country/setting; author affiliation alone did not determine setting. Topical-context coding allowed multiple labels.

Source-Level Condition Extraction and RQ2 Coding

For RQ2, the review defined a condition as an antecedent, contextual, relational, organisational, disciplinary, structural, or individual circumstance that a study described or modelled as enabling, constraining, or otherwise shaping doctoral socialisation. Source-level extraction preserved the original wording, supporting evidence, direction, provisional family, and the condition-process-outcome boundary judgement.

Each condition received a directional code: facilitating, constraining, mixed, context-dependent, or null/no detectable association. Coding treated mentoring, feedback exchange, networking, writing, and participation as socialisation processes unless a study identified a feature such as availability, accessibility, quality, clarity, structure, or power configuration. Belonging, identity, competence, well-being, persistence, and career outcomes counted as consequences unless a study explicitly modelled them as antecedents. Demographic identities did not count as deficit factors; the coding instead targeted mechanisms such as discrimination, language hierarchy, unequal recognition, or differential network access.

RQ2 coding used the strongest accessible source for each study, including published full texts, repository copies, accepted manuscripts, publisher records, abstracts, and indexed information. Boundary-sensitive, complex, or sensitivity cases triggered targeted publisher, repository, accepted-manuscript, or full-text verification. When coding depended on an abstract or indexed record, the condition remained only if the available source made its antecedent or contextual status explicit. This rule-maintained source transparency and limited inference beyond the evidence available for each study.

Constant Comparison Consolidation

The RQ2 synthesis used constant comparison. It kept source-level units close to the studies' original terminology, compared those units across studies, and consolidated functionally equivalent conditions. Facilitating and constraining manifestations of the same construct remained within one condition, with direction recorded separately.

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The classification assigned each condition to its primary operative locus while allowing study-level multi-label coding. A final boundary audit separates conditions from processes and outcomes before the calculation of frequencies.

The final coding framework comprised six condition families and 31 standardised subconditions: supervisory/mentoring; peer/network/community; programmatic/institutional; disciplinary/academic-cultural; structural/cultural/inequality-related; and individual/psychological. For higher-order interpretation, the six families formed relational, meso/institutional, macro/structural, and individual dimensions. Temporal/doctoral-stage context cut across these dimensions because it can alter the salience of conditions operating at other levels.

Frequencies capture study-level thematic presence: each study contributed at most one count to a subcondition or family. Because studies could contribute to multiple categories, the percentages are non-exclusive and do not indicate prevalence, effect size, or causal importance.

Reviewer Process and Auditability

One researcher conducted the screening, eligibility assessment, extraction, source verification, RQ1 coding, RQ2 coding, and constant-comparison synthesis. When a case was unclear, the eligibility or coding criteria were checked again, and additional source material was consulted where needed. The audit trail records the reasons for study-level decisions, relevant source wording, supporting evidence, and condition–process–outcome boundary decisions. The supplementary materials include the full list of 165 studies, RQ1 extraction records, the RQ2 coding framework, retained source-level audit records, and references for all included studies. No formal methodological quality or risk-of-bias appraisal was conducted. The implications of this decision, together with the absence of independent reviewer agreement, are discussed in the Limitations section.

Results

How Doctoral Student Socialisation Has Been Investigated (RQ1)

The included studies were published between 2015 and 2026. Of the 165 included studies, 97 (58.8%) appeared from 2021 to 2026 and 61 (37.0%) from 2024 to 2026. There were 23 studies published in 2025 and 25 indexed as 2026 publications by the 23 August search date. As the 2026 search covered only part of the year, the 2026 count does not represent a complete annual total (Table 1).

Table 1: Publication-Year Distribution of the Included Studies

Year	n	%
2015	7	4.2
2016	5	3.0
2017	14	8.5
2018	12	7.3
2019	15	9.1
2020	15	9.1

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Year	n	%
2021	11	6.7
2022	14	8.5
2023	11	6.7
2024	13	7.9
2025	23	13.9
2026	25	15.2

The studies were conducted across a wide range of geographic settings, although research was concentrated in a small number of countries. When each country in a multi-country study was counted, the United States was represented in 81 studies (49.1%), followed by the United Kingdom with 19 (11.5%) and China with 17 (10.3%). Sweden was represented in six studies, and Germany and Canada in five each. Because a multi-country study could be counted under more than one country, these percentages are not mutually exclusive (Table 2).

Table 2: Geographic Distribution of the Included Studies

Country / setting	Study mentions	% of 165
United States	81	49.1
United Kingdom	19	11.5
China	17	10.3
Sweden	6	3.6
Germany	5	3.0
Canada	5	3.0
Malaysia	3	1.8
Hong Kong	3	1.8
Pakistan	3	1.8
Kazakhstan	3	1.8
Country not explicitly disclosed	3	1.8
Finland	2	1.2
Australia	2	1.2
Hungary	2	1.2
Belgium	2	1.2
Japan	2	1.2
Denmark	2	1.2
Turkey	2	1.2
Thailand	2	1.2
South Korea	2	1.2
Taiwan	2	1.2
Northern Cyprus	1	0.6
Egypt	1	0.6
Netherlands	1	0.6
Norway	1	0.6
New Zealand	1	0.6
Benin	1	0.6
Poland	1	0.6
Austria	1	0.6

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Country / setting	Study mentions	% of 165
Brazil	1	0.6
Portugal	1	0.6
Vietnam	1	0.6
Ethiopia	1	0.6
Mexico	1	0.6
Estonia	1	0.6
North America (country not disclosed)	1	0.6
India	1	0.6
Iran	1	0.6

Note. Countries in multi-country studies were counted separately; percentages therefore do not sum to 100%. Three studies did not disclose a country in accessible study descriptions, and one additional study reported only a broader North American setting.

Qualitative or interpretive designs accounted for 119 studies (72.1%), followed by quantitative studies (n = 25, 15.2%), mixed methods (n = 8, 4.8%), and empirical document/policy analysis (n = 1, 0.6%). In 12 studies (7.3%), neither the abstract nor indexed information supported a confident design classification, so the review left the design unspecified (Table 3).

Table 3: Broad Methodological Approaches Used in the Included Studies

Methodological approach	n	%
Qualitative / interpretive	119	72.1
Quantitative	25	15.2
Mixed methods	8	4.8
Document/policy analysis	1	0.6
Design not explicit in available sources	12	7.3

Note. "Design not explicit in available sources" indicates that neither the abstract nor indexed information supported a confident design classification.

Forty-eight studies (29.1%) explicitly named a theory or conceptual framework in the abstract or indexed keywords; 117 (70.9%) did not. The most visible named families were language/academic-discourse socialisation (n = 10), communities of practice/social-learning systems (n = 7), and occupational socialisation theory (n = 6). Bourdieu/habitus, the Weidman socialisation framework, and critical race theory each appeared in five studies, while other named frameworks appeared in three or fewer. Because this coding relied on abstracts and indexed keywords, non-reporting at that level does not establish that a full article lacked theoretical framing (Table 4).

Table 4: Theory and Framework Use in the Included Studies

Theory/framework characteristic	Study mentions	% of 165
Theory/framework reporting		
Explicit	48	29.1
Not explicit in abstract/keywords	117	70.9
Selected named theory/framework families (multi-label)		
Language / academic discourse socialisation	10	6.1

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Theory/framework characteristic	Study mentions	% of 165
Communities of practice / social-learning systems	7	4.2
Occupational socialisation theory	6	3.6
Bourdieu / habitus / cultural capital	5	3.0
Weidman socialisation framework	5	3.0
Critical race theory	5	3.0
Activity theory	3	1.8
Organisational socialisation	3	1.8
Institutional logics	1	0.6
Governance / critical policy analysis	1	0.6
Goffmanian perspective	1	0.6

Note. Framework counts are multi-label. Table 4 is descriptive, not exhaustive; the supplementary materials provide the complete framework coding. "Not explicit in abstract/keywords" means only that no named framework was visible in those sources and should not be read as evidence that the full article was atheoretical.

The literature addressed overlapping substantive contexts. Professional/career/faculty socialisation was the most common topical context, appearing in 74 studies (44.8%), followed by disciplinary/ interdisciplinary or research environments in 71 (43.0%), peer/ network/ community participation appeared in 63 studies (38.2%), equity/identity/belonging/power in 58 (35.2%), and supervision/ mentoring/ advising in 56 (33.9%). General doctoral socialisation/ transition, academic literacies/ scholarly communication, and international or mobility contexts were also well represented. Because the categories overlapped, one study could contribute to several contexts (Table 5).

Table 5: Topical Contexts Used to Investigate Doctoral Socialisation

Topical context / focus	n	% of 165
Academic literacies / scholarly communication	48	29.1
Supervision / mentoring / advising	56	33.9
Peer / network / community participation	63	38.2
Professional / career / faculty socialisation	74	44.8
International / cross-cultural / mobility	27	16.4
Equity / identity / belonging / power	58	35.2
Disciplinary / interdisciplinary / research environment	71	43.0
General doctoral socialisation / transition	53	32.1

The coding classified doctoral socialisation as highly central in 114 studies (69.1%) and moderately central in 51 (30.9%). The latter remained eligible because they examined substantively equivalent processes, including scholarly participation, community integration, academic apprenticeship, or professional incorporation. Taken together, the RQ1 findings describe a recent, predominantly qualitative, geographically uneven, and substantively diverse evidence base.

Conditions Shaping Doctoral Student Socialisation (RQ2)

The synthesis identified six condition families comprising 31 standardised subconditions. Of the 165 included studies, 145 contributed at least one eligible antecedent or contextual condition under the condition-process-outcome boundary rules. The other 20 studies informed

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the research landscape but did not contribute to an eligible RQ2 condition. The six families were organised across relational, meso/institutional, macro/structural, and individual dimensions, while temporal/doctoral-stage context operated across these dimensions instead of forming a separate analytical level.

At the higher-order level, relational conditions appeared in 109 studies (66.1%) and meso/institutional conditions in 108 (65.5%). These totals count each study once when it contributed to at least one family within the relevant higher-order dimension. Structural, cultural, and inequality-related conditions appeared in 52 studies (31.5%), temporal context in 27 (16.4%), and individual/psychological conditions in 23 (13.9%). At the family level, programmatic/institutional (n = 83), supervisory/mentoring (n = 82), and peer/network/community conditions (n = 74) were the most widely represented. (Table 6).

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Table 6: Conditions Shaping Doctoral Student Socialisation in Higher Education

Higher-order dimension	Condition family	n (%)	Consolidated subconditions	Synthesis interpretation
Relational	Supervisory / mentoring	82 (49.7)	Supervisor accessibility, relationship quality, and support; feedback and scholarly guidance quality; supervisory power, autonomy, expectations, and role configuration; supervisor competence, mentoring style, and developmental fit; supervisor brokerage, role modelling, and network/community access.	Relational access to support, guidance, autonomy, feedback, brokerage, and recognition through supervisors, advisors, and mentors.
Relational	Peer / network / community	74 (44.8)	Peer support, peer mentoring, and writing/support groups; professional and scholarly network access/social capital; research-team, lab, cohort, and community climate; peer knowledge-sharing, feedback, and informal interaction opportunities; cross-boundary, international, and multi-community access.	Access to peer support, social capital, scholarly communities, feedback, and collaborative or conflictual relational climates.
Meso / institutional	Programmatic / institutional	83 (50.3)	Structured developmental and professional-preparation opportunities; institutional resources, funding, and infrastructure; programme design, policy, governance, and formal requirements; institutional climate, responsiveness, and inclusivity; access to external, interdisciplinary, and authentic scholarly opportunities.	Formal programme, departmental, institutional, policy, resource, and opportunity structures that organise access to socialisation.

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Higher-order dimension	Condition family	n (%)	Consolidated subconditions	Synthesis interpretation
Meso / institutional	Disciplinary / academic-cultural	57 (34.5)	Academic norms, hidden curriculum, and role expectations; academic language, writing, publishing, and feedback conventions; epistemic and disciplinary boundaries/legitimate knowledge; evaluation, merit, gatekeeping, and scholarly valuation norms; disciplinary/interdisciplinary/industry culture alignment and research fit.	Norms, language, scholarly communication conventions, epistemic boundaries, evaluation rules, and culture/fit expectations.
Macro / structural	Structural / cultural / inequality	52 (31.5)	Racialised, gendered, and intersectional inequality; cultural and linguistic mismatch/international-status demands; hierarchy, power, symbolic exclusion, and unequal recognition; material, technological, geopolitical, and mobility constraints; hypercompetition, neoliberal, and performance-pressure environments.	Racialised, gendered, cultural, linguistic, material, geopolitical, hierarchical, and competitive conditions shaping unequal access.
Individual	Individual / psychological	23 (13.9)	Prior preparation and professional/research experience; motivation, aspiration, agency, and personal/cultural capital; psychological strain, resilience, and coping resources; competing life commitments and personal circumstances.	Prior preparation, motivation/agency/capital, psychological resources or strain, and life circumstances when positioned as antecedent conditions.
Cross-cutting context	Temporal / doctoral-stage	27 (16.4)	Entry and first-year transition; stage/time in programme and duration of socialisation exposure.	Stage-sensitive context that changes the salience of support, autonomy, networks, and other conditions across the doctoral trajectory.

Note. n indicates study-level thematic presence using all 165 included studies as the denominator. Higher-order dimension totals count each study once if it contributed to at least one family within that dimension. Studies could contribute to multiple families and subconditions, so percentages do not sum to 100% and should not be interpreted as effect sizes, prevalence estimates, or causal importance. Temporal/doctoral-stage context is cross-cutting and is not counted as a seventh analytical level.

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Relational and Institutional Conditions

Relational conditions centred on the quality and accessibility of supervision, peer support, scholarly networks, and community participation. Supervisory and mentoring conditions included relationship quality, feedback and scholarly guidance, autonomy, developmental fit, and brokerage into wider networks. Supportive and interpretable supervision facilitated participation, whereas unclear, controlling, inequitable, or unavailable supervision constrained it (Carless et al., 2024; Cornér et al., 2018; Klakla & Juzaszek, 2026). Peer and community conditions broadened this relational environment. They included peer support, research groups, cohort climates, professional networks, and opportunities for informal knowledge exchange (Jeong et al., 2019; Kuzhabekova & Kim, 2026; Lewinski et al., 2017).

Programmatic and institutional conditions concerned the structures that organised access to relationships, resources, and scholarly opportunities. Studies emphasised developmental opportunities, funding and infrastructure, programme requirements, institutional responsiveness, and access to authentic, external, or interdisciplinary scholarly activity. Structured and responsive environments widened participation, while limited resources, rigid arrangements, and restricted opportunities narrowed it (Bowman et al., 2017; Khalid et al., 2023; Vattøy, 2026).

Disciplinary, Structural, and Inequality-Related Conditions

Disciplinary conditions shaped how students understood what counted as appropriate and recognised participation in academic communities. These conditions included scholarly communication conventions, hidden curricula, role expectations, epistemic boundaries, disciplinary fit, and evaluation or gatekeeping norms. Clear expectations and conventions helped students understand how to participate, while unclear or unfamiliar expectations made this more difficult (Bartoluzzio et al., 2025; Liera et al., 2023; Phyo et al., 2025).

Structural and inequality-related conditions affected students' access to academic resources, networks, and communities. Studies identified racialised, gendered, and intersectional inequality; cultural or linguistic mismatch; hierarchy and symbolic exclusion; material, technological, geopolitical, or mobility constraints; and competitive performance environments. These conditions shaped who had access to recognition, resources, networks, and opportunities to participate fully in academic communitie (Bourabain, 2024; Fochler et al., 2016; Zheng, 2019).

Individual Conditions and Doctoral-Stage Context

Individual conditions appeared less often and included prior preparation, motivation and agency, personal or cultural capital, psychological strain or resilience, and competing life circumstances. These conditions were closely connected to students' relational and institutional environments. Prior preparation, motivation, and agency could support participation, while stress and competing commitments could make participation more difficult (Brazill, 2022; Guo et al., 2018; Zhang et al., 2026). Doctoral stage differed from the six condition families because it shaped when and how other conditions became important. Students at the beginning of the doctorate often needed more guidance and peer support, while those at later stages faced a different balance of supervision, autonomy, networks, and institutional support. Longitudinal

studies also showed that relational support did not necessarily improve over time (Jwa & Berdanier, 2026; Shibayama et al., 2026).

Taken together, the findings show that doctoral socialisation is shaped by students' access to relationships, institutional opportunities, disciplinary norms, recognition, and resources at different stages of the doctorate. No single condition family explains doctoral socialisation on its own. Instead, the findings show that these conditions work across relational, institutional, disciplinary, structural, individual, and temporal contexts.

Discussion

The review shows that research on doctoral socialisation has grown rapidly, but the evidence remains uneven in both methodology and geographic coverage. The findings also show that doctoral socialisation is shaped by conditions at relational, institutional, disciplinary, structural, individual, and temporal levels. Supervision remains important, but it is only one part of this wider set of influences.

How Doctoral Student Socialisation Has Been Investigated

RQ1 shows substantial recent growth in research on doctoral socialisation, although the 2026 count includes only records indexed by 23 August and is not a complete annual total. Nearly three fifths of the studies (58.8%) appeared from 2021 onward, and qualitative/interpretive designs accounted for 119 of 165 studies (72.1%). These approaches are particularly useful for understanding how students experience academic norms, identities, relationships, and participation. At the same time, the strong reliance on qualitative research means that literature provides richer evidence on experiences and processes than on comparative patterns or causal relationships. This pattern is consistent with earlier reviews of doctoral education, which have noted methodological fragmentation and called for more longitudinal and integrative research designs (Jones, 2013; Sverdlik et al., 2018).

Geographic concentration also matters. The United States appeared in 81 studies (49.1%), followed by the United Kingdom (n = 19) and China (n = 17). Recurring patterns may therefore reflect features of particular doctoral systems and may not generalise uniformly across settings. Forty-eight studies (29.1%) explicitly named a theory or framework in abstracts or indexed keywords. Many studies therefore did not clearly report theoretical framing in those sources. This limited visibility makes cumulative comparison harder and strengthens the case for clearer conceptual models in doctoral research.

The topical breadth of the evidence also supports a socialisation lens. Professional/career/faculty socialisation and disciplinary/interdisciplinary research environments were the two most common topical contexts. Peer/network participation, equity/identity/power, supervision, general doctoral transition, and scholarly communication also appeared frequently. Viewed together, these topics converge around access to scholarly norms, relationships, resources, recognition, and participation.

Doctoral Socialisation as a Multilevel and Distributed Ecology

RQ2 complicates supervisor-centred accounts of doctoral socialisation. Relational conditions appeared in 66.1% of studies and meso/institutional conditions in 65.5%. Their near-equal

representation shows that literature gives substantial attention to both relational and organisational contexts. This pattern is consistent with Weidman and Stein's (2003) account of socialisation to academic norms and McAlpine and Norton's (2006) nested view of doctoral education. The present synthesis extends these perspectives by specifying the operative conditions across levels.

The framework maps where studies locate enabling and constraining conditions and how those conditions intersect across levels. Supervisors operate within programmes and disciplines, peer networks depend partly on institutional opportunity structures, and wider inequalities can filter access to both.

Relational Conditions Beyond the Supervisory Dyad

Supervision remained one of the two largest condition families. Across these studies, the relevant issue was not simply whether a supervisor existed, but whether supervision was accessible, clear, responsive to students' needs, and able to connect them with wider scholarly networks. Helpful feedback, appropriate levels of autonomy, and access to wider academic networks supported socialisation, while controlling, unclear, inequitable, or limited supervision could restrict it. This interpretation is consistent with Haley et al.'s (2025) systematic review of supervisory competence and with empirical evidence showing that effective support needs to reflect students' needs and circumstances (Cornér et al., 2018).

Peer and network conditions were also widely represented (44.8% of studies). This finding suggests that doctoral socialisation cannot be understood through the supervisor-student relationship alone. Developmental-network theory (Sweitzer, 2009) helps explain this broader pattern because peers, senior scholars, research groups, and professional contacts can provide different forms of information, feedback, recognition, and support for academic identity. Taken together, these findings suggest that supervision is most effective when it forms part of a broader network of support, rather than being the main relationship on which students depend.

Institutional, Disciplinary, and Structural Conditions of Access

Programmatic and institutional conditions were among the most widely represented in the synthesis. They show how programme design, resources, and formal arrangements can shape students' access to socialisation opportunities. Structured development opportunities, funding and infrastructure, clear requirements, inclusive environments, and opportunities for meaningful scholarly participation can make support and participation more accessible to students. Gardner's (2007) finding that disciplinary context shapes socialisation also helps explain why general institutional support may not be enough when disciplinary expectations and norms are not made explicit.

Disciplinary conditions clarify what students are being socialised into. Writing and publishing conventions, hidden curricula, epistemic boundaries, and evaluation rules define legitimate participation and scholarly worth. Carless et al. (2024), for example, show how authentic feedback can socialise doctoral students into scholarly practices. Institutions therefore need to provide opportunities for participation and make the disciplinary rules governing those opportunities more visible.

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Structural/cultural/inequality-related conditions appeared in nearly one third of studies (31.5%). Although less frequently represented, these conditions shaped how students encountered supervision, programmes, and scholarly communities. Bourabain (2024) shows how gendered-racialised relations filter supervision and departmental integration, while Fochler et al. (2016) shows how hypercompetition narrows evaluative repertoires. Together, these findings show how structural conditions organise access to recognition, resources, and legitimate membership.

Individual Resources and Doctoral-Stage Context

Individual conditions appeared less often (13.9%). The studies that addressed these conditions situated them within wider relational and institutional contexts. Motivation, prior preparation, agency, stress, resilience, and competing life commitments therefore appeared alongside access to networks, clear expectations, equitable supervision, and material resources.

Temporal context also appeared less often (16.4%) but remained analytically important. Guo et al. (2018) identify the first year as a period of adjustment in which programme environment and scholarly guidance matter. Jwa and Berdanier (2026), by contrast, report declining socialisation indicators over time in engineering. Stage therefore works best as a modifier of other conditions, not as a parallel analytical level.

Conceptual Contribution: Separating Conditions, Processes, and Outcomes

The review's main conceptual contribution lies in separating conditions, socialisation processes, and outcomes. Mentoring, for example, can be treated as a process through which socialisation occurs, while its availability and quality may function as conditions that shape that process. Belonging and identity usually appear as outcomes or indicators, unless a study clearly treats them as antecedents. Distinguishing these different roles helps avoid conceptual overlapping and makes future studies easier to compare.

The term shaping conditions reflects this distinction and is broad enough to capture the different types of evidence included in the review. Qualitative accounts, observational associations, longitudinal relationships, and quantitative models all contribute to the framework, although they provide different forms and levels of evidence. Frequency indicates how often a condition appears in literature, while its interpretation depends on the evidence reported in the individual studies.

Practical Implications for Doctoral Education

The findings support a broader approach to doctoral socialisation that does not rely on supervision alone. Programmes can reduce reliance on informal knowledge by making expectations, requirements, and key milestones clear and by creating regular opportunities for peer interaction and cohort support. They can also support writing and research communities and provide more students with opportunities to take part in scholarly activities. Supervisors remain important, but their role should be supported by wider structures that provide high-quality feedback, appropriate autonomy, peer connections, and access to senior scholars.

Attention to equity should form part of these doctoral support structures. Funding, mobility opportunities, mentoring, and access to scholarly activities should be allocated through clear

and transparent processes, especially where informal networks may give some students greater access than others. Support also needs to reflect disciplinary and national differences, as the same approach may not work equally well across all doctoral settings.

Future Research Priorities

Longitudinal and mixed-methods research is especially needed to examine how conditions change across different stages of doctoral study, from entry and candidacy to dissertation work and transition. Combining repeated measures with qualitative evidence could preserve the field's strength in understanding experience while also showing how conditions and outcomes change over time.

Multilevel and comparative studies could bring together data from students, supervisors, programmes, disciplines, and institutions and examine whether the proposed framework applies across different national systems and fields of study. Future studies also need to define more clearly the role of constructs such as mentoring, feedback, belonging, identity, stress, and support. Researchers should specify whether these constructs are treated as antecedents, processes, mediators, indicators, or outcomes, and explain the theoretical relationships among them.

Intervention and quasi-experimental research could examine features that can be changed in practice, such as structured mentoring, peer and cohort support, clearer expectations, feedback practices, network-building, and transparent access to opportunities. Because simply providing a resource or opportunity does not mean that all students can access or benefit from it, evaluations should consider how these initiatives are implemented as well as their outcomes for doctoral socialisation.

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Limitations

Several limitations should be considered when interpreting the findings. The review searched only Scopus and included English-language journal articles published from 2015 to 2026. It may therefore have missed relevant studies indexed in other databases, published in other languages, or available only as grey literature. Open-access status did not affect eligibility, but the amount of source material available for analysis varied across studies. The use of socialisation/ socialization as the anchor term may also have missed related research described using other terms, such as academic acculturation, professional identity, scholarly integration, or community participation.

The evidence also varied across countries, disciplines, doctoral stages, theoretical approaches, and research designs. Some RQ1 coding of methodology and theoretical framing relied on abstracts or indexed keywords, so information not reported in these sources may not have been captured. The sources available for RQ2 coding also differed across studies. Some studies could be coded using full texts, repository copies, or accepted manuscripts, whereas others were coded from clear evidence in abstracts or indexed records. Additional source checking focused on cases where the condition–process–outcome boundary was unclear, which meant that the depth of evidence was not the same for every study.

No formal methodological quality or risk-of-bias appraisal was conducted. The thematic counts therefore did not give greater weight to studies with stronger methodological designs. One researcher also conducted the screening, extraction, source verification, and coding, which meant that agreement between independent reviewers could not be assessed. Prespecified criteria, recorded reasons for decisions, source-level evidence, and the boundary audit were used to make the review process as transparent as possible, but they do not remove the limitations associated with single-reviewer judgement.

The predominance of qualitative and interpretive designs, together with the small number of strong longitudinal or experimental studies, limit causal interpretation. RQ2 frequencies represent multi-label study presence and provide a descriptive view of the evidence base. The framework is therefore best read as an integrative map for further longitudinal, multilevel, comparative, and intervention testing.

Conclusion

This review synthesised 165 empirical studies to map the research landscape of doctoral socialisation and identify the conditions that shape it. The evidence base is recent, predominantly qualitative/interpretive, and geographically uneven. Many studies did not clearly name a theory or framework in abstracts or indexed keywords. The condition synthesis identified six families and 31 standardised subconditions across relational, meso/institutional, macro/structural, and individual dimensions. Doctoral stage operated as a cross-cutting context.

Programmatic/institutional and supervisory/mentoring conditions were the two most widely represented families, with peer/network/community conditions also prominent. At the higher-order level, relational and meso/institutional conditions appeared in roughly two thirds of studies. These findings place supervision within a broader ecology of peer networks, programme structures, disciplinary norms, resources, and inequalities. The review's principal conceptual contribution is a condition-focused framework that distinguishes antecedent and contextual conditions from socialisation processes and outcomes and organises them across multiple levels.

For doctoral education, the findings support transparent expectations, distributed relational support, structured opportunities for scholarly participation, and attention to unequal access to resources and recognition. Future research should further examine and refine the framework through longitudinal, multilevel, comparative, mixed-methods, and intervention studies.

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