INTEGRATING CASE-BASED LEARNING AND REFLECTIVE PRACTICE TO DEVELOP CRITICAL THINKING COMPETENCE IN PRE-SERVICE TEACHERS

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Abstract. Contextual approaches to teacher education situate learning in authentic professional tasks, but they leave open which concrete pedagogies help pre-service teachers reason critically about practice rather than reproduce familiar routines. This literature-based thesis, grounded in research published between 2020 and 2025, examines how case-based learning and reflective practice can be integrated for this purpose. Recent studies show that student teachers often prefer personal experience to research evidence, may discount findings that contradict their beliefs, and do not necessarily translate positive attitudes towards research into its use when planning lessons. Against this background, the thesis argues that realistic teaching cases and structured reflection perform complementary functions. Cases present ill-structured problems that require noticing relevant details, generating competing explanations and justifying decisions with evidence; reflection directs attention to the assumptions, beliefs and sources behind those decisions. A five-phase learning cycle is proposed, together with conditions concerning case design, scaffolding matched to prior knowledge, collaboration and assessment. The thesis reports no empirical data; its propositions are offered as hypotheses for future research.

Keywords: case-based learning; reflective practice; critical thinking; pre-service teachers; evidence-informed reasoning; professional noticing; contextual teacher education.

Introduction and relevance.

Classroom decisions are made under uncertainty: whether to regroup pupils, how to respond to an incorrect answer or how to handle a conflict seldom follows directly from general principles. Research synthesised by Darling-Hammond et al. (2020) on the science of learning and development underlines that learning is shaped by context and relationships, which strengthens the case for teacher education that connects coursework with authentic practice. Contextual approaches answer this need in broad terms, yet they do not specify how prospective teachers should learn to evaluate competing interpretations of a situation and the evidence behind them.

Recent empirical work shows why this question matters. Thomm et al. (2021) found that pre-service teachers tended to devalue educational research when its findings contradicted their prior beliefs, although they still adjusted those beliefs towards the evidence. Gold et al. (2024) showed that student teachers' intentions to use scientific sources were linked to attitudes, self-efficacy and perceived mentor expectations, yet these intentions did not predict the actual use of such sources in lesson planning. At the same time, reviews indicate that critical thinking can be fostered through problem-centred instruction: Liu and Pásztor (2022) reported a positive overall effect of problem-based learning on critical thinking in higher education, and Lithoxoidou and Georgiadou (2023) described how critical thinking can be embedded explicitly in both theory courses and the practicum of a primary teacher education programme. Taken together, these findings suggest that pre-service teachers need structured opportunities to reason with evidence about realistic problems and to examine their own reasoning. Case-based learning and reflective practice address these two needs respectively.

Aim of the study.

The aim of this thesis is to develop a theoretically grounded rationale for integrating case-based learning and reflective practice in initial teacher education, and to derive design principles through which

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this integration may support the critical thinking competence of pre-service teachers. The thesis is conceptual and does not report empirical findings.

Theoretical and methodological basis.

The thesis is based on a narrative review of recent peer-reviewed research in four areas. *Case-based learning.* Lee et al. (2023) observed that case-based learning in teacher education still lacks a systematic review and derived research-based principles for its use from the existing literature. In science education, Dewi and Rahayu (2023) found that case-based learning is frequently combined with inquiry-, problem- or project-based approaches and that the time demanded by case problem-solving is a recurring obstacle. *Representations and approximations of practice.* The meta-analysis by Chernikova et al. (2020) showed that simulation-based learning in higher education, including teacher education, was effective overall, and that learners with higher prior knowledge benefited more from reflection phases, whereas learners with lower prior knowledge benefited more from worked examples. Santagata et al. (2021) reviewed video-based programmes and described how analysing recorded lessons can develop teachers' noticing, that is, attending to, interpreting and responding to significant classroom events.

Evidence-informed reasoning. Csanadi et al. (2021) analysed how pre-service teachers draw on scientific and everyday knowledge when solving authentic pedagogical problems individually or in pairs, treating evidence-based reasoning as a distinct and analysable competence. The studies by Thomm et al. (2021) and Gold et al. (2024) cited above add that this competence is constrained by prior beliefs and by the gap between intention and practice. *Reflection.* García-Lázaro and Reyes-de-Cózar (2025) systematically reviewed pre-service teachers' reflective processes during field experiences using Korthagen's onion model, which distinguishes levels ranging from environment and behaviour to beliefs, identity and mission. This framework is used here to describe how deep reflection should go.

Discussion: how case-based learning and reflective practice support critical thinking.

Cases as problems that demand evidence. A well-designed teaching case presents a situation with several stakeholders, incomplete information and more than one defensible response. To analyse it, student teachers have to notice relevant details, separate description from interpretation, propose alternative explanations and decide which evidence (observational data, research findings, curricular requirements) supports each of them. These operations correspond to the interpretive, analytical and evaluative components of critical thinking. Because a case is shared, the reasoning it elicits becomes visible and open to challenge in a way that individual practicum experience often is not.

Reflection as scrutiny of one's own reasoning. Analysing someone else's classroom can remain detached: students may solve the case while leaving their own assumptions untouched. Structured reflection closes this gap by asking what was assumed, which sources were trusted and why, and whether the judgement would change if contrary evidence were available. Cases can be built deliberately so that an intuitive solution conflicts with research evidence; in light of Thomm et al. (2021), reflection should then make explicit any tendency to discount the evidence rather than revise the belief. In terms of the onion model, reflection that moves beyond behaviour towards beliefs and professional identity is where critical thinking becomes a disposition rather than an isolated skill.

An integrated learning cycle. On this basis, a five-phase cycle is proposed: (1) individual reading of the case and a written initial judgement; (2) analysis in which every interpretation must be backed by cited evidence; (3) collaborative comparison of alternative interpretations, drawing on the evidence that joint problem-solving can shape evidence use (Csanadi et al., 2021); (4) written reflection that contrasts initial and revised judgements and identifies the beliefs involved; and (5) transfer, in which students document an episode from their own practicum as a new case. Two further conditions follow from the

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reviewed research. Scaffolding should match prior knowledge: in early courses, worked examples of expert case analysis may be more useful, while open reflection phases become more productive as knowledge grows (Chernikova et al., 2020). In addition, because positive intentions do not guarantee the use of research in planning (Gold et al., 2024), assessment should reward the quality of evidence-based argument, and school mentors should be involved in phase (5).

Conclusion and practical implications.

The analysis suggests that case-based learning and reflective practice contribute different but mutually dependent elements of critical thinking competence. Cases supply the problem space and the demand for evidence; reflection supplies the examination of beliefs and sources that turns analysis into self-correcting professional judgement. Their integration within a single cycle is therefore expected to be more effective than either approach alone. This is a hypothesis that the existing literature supports indirectly but does not yet test. For teacher education programmes, the analysis implies: (1) building libraries of written and video cases from local schools that preserve genuine ambiguity; (2) requiring case analyses to state claims, evidence and alternative explanations; (3) using reflection prompts that progress from behaviour to beliefs and identity; (4) adapting scaffolding to students' stage of study; and (5) connecting university case work with the practicum through student-authored cases. Design-based and quasi-experimental studies comparing case analysis with and without structured reflection are needed to establish whether the proposed cycle improves critical thinking and evidence-informed reasoning.

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