



Shifting Practices, Shaping Futures: Translating ESD into Teacher Education Practice

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Abstract. This case study reconstructs how identical ESD policy directives produce divergent practices in Germany's second phase of teacher education, conducted in Studienseminare where seminar leaders (teacher educators) mentor trainees and prepare them for state examinations. Narrative interviews with ten seminar leaders from one federal state were conducted and analyzed using the documentary method, distinguishing communicative from conjunctive knowledge. For this article, two contrasting cases were chosen. They reveal divergent practices under shared governance conditions: Case 1 integrates ESD as subject-specific curriculum analysis within established teaching routines; Case 2 develops project-based approaches despite partial curriculum integration limits. Seminar leaders' conjunctive orientations constitute these divergent practice configurations: Case 1 frames "teacher education as preparation for teaching", marginalizing ESD as supplementary; Case 2 exhibits "teacher education as praxis-induced attitude change", embedding ESD within iterative project-reflection routines. These carrier-level mechanisms suggest policy translation hinges on practical knowledge rather than formal mandates alone. The findings advance practice theory by illuminating orientation-driven practice divergence in educational governance and raise questions about practice transfer across professionalization phases.

Keywords: Education for sustainable development, teacher education, practice theory.

1 Introduction

Education for Sustainable Development (ESD) has become an institutionalized governance response to global crises, codified in competency frameworks such as GreenComp (Bianchi et al., 2022). Yet the enactment of ESD policy reveals divergent educational practices, arising from interrelated dynamics: ESD's conceptual ambiguity, marked by critical discourses on instrumentalization, depoliticization, and postcolonial continuities (Fischer et al., 2022; Stein et al., 2022); diverse tacit orientations of teacher educators shaping practical routines (Sinakou et al., 2023); and the interaction of governance, institutional and everyday practices (Viennet & Pont, 2017). These dynamics become

visible in teacher education, which monitoring studies repeatedly identify as one of the weakest links in the enactment of ESD policy (Holst et al., 2020).

In Germany, teacher education is organized in three phases, with the second phase playing a key role in the professional socialization of future teachers. During this phase, the Studienseminare function as “People Processing Organizations” (Bohnsack, 2020), where experienced seminar leaders mentor trainees and mediate between educational theory and classroom practice. As key multipliers for ESD (Goller & Rieckmann, 2022), they thus warrant particular attention. Despite formal curricular mandates and related governance practices, little is known about the practical constitution of ESD within the everyday routines of this phase of teacher education (Fischer et al., 2022).

To better understand how ESD practices arise in teacher education, this study conceptualizes ESD as a configuration of practices that unfold across loosely coupled macro-level governance practices (such as curricular steering) and meso-level organizational practices (such as institutional meetings) and micro-level teaching practices enacted and reconfigured by seminar leaders. These practices are shaped by seminar leaders’ *implicit* orientations (Bohnsack, 2020). Policy translation is thus understood not as the linear implementation of predefined policies, but as an emergent process in which different practices intersect and are reconfigured within institutional contexts, giving rise to diverse forms of ESD practice that mirror the plurality of conceptualizations in scholarly discourse.

Adopting a praxeological perspective, the analysis focuses on the empirical constitution of practices rather than on normative debates about “good” ESD (Reckwitz, 2003). Practices are understood as knowledge-dependent routines enacted through embodied skills, social interactions, and material arrangements, carried by actors whose heterogeneous practical knowledge can generate both frictions and opportunities for transformation within institutional routines (Reckwitz, 2003). This perspective highlights how governance, organizational, and training practices co-constitute professional socialization processes in the second phase of teacher education (Hangartner, 2019; von Seggern & Singer-Brodowski, 2020; Bohnsack, 2020). Drawing on narrative interviews analyzed through the documentary method, this study reconstructs how ESD practices emerge in Germany’s second phase of teacher education.

2 Objectives

This article analyzes two contrasting cases to explore how ESD practices emerge in the second phase of teacher education. Focusing on seminar leaders’ narratives, the analysis reconstructs the implicit orientations and institutional arrangements that shape different ways of integrating—or disregarding—ESD in everyday teacher education practices. The study is guided by the following questions: Which ESD-related practices emerge from seminar leaders’ narratives in the context of the second phase of teacher education? Which orientations underlie seminar leaders’ practices concerning the (non-)integration of ESD?

3 Methodology

From a practice-theoretical perspective, institutional practices are shaped by implicit orientations that guide their enactment. To reconstruct these orientations underlying seminar leaders' practices, this study applies the documentary method (Bohnsack, 2010), which distinguishes between explicit communicative knowledge (everyday knowledge individuals can articulate and reflect upon) and tacit conjunctive knowledge (collectively shared orientations internalized through habitualized practice). By reconstructing these orientations, the analysis captures not only what actors say but how they implicitly structure their practices. Within this framework, macro-, meso-, and micro-level contexts illuminate how governance practices (e.g., policy steering), organizational practices (e.g., coordination routines), and professional practices (e.g., everyday seminar routines) intersect with seminar leaders' practical knowledge. This enables reconstruction of divergent ESD practice configurations within teacher education.

4 Research Design

Ten narrative, guideline-based expert interviews were conducted with seminar leaders at two seminar sites within one German federal state (5–27 years of experience, diverse school types and roles). For the case analysis, two contrasting cases from the same federal state, school type, and institution were purposefully selected following theoretical sampling principles (Nohl, 2010). Case 1 illustrates how ESD governance practices are accommodated within existing seminar routines due to the absence of institutional coordination practices; Case 2 demonstrates how meso-level institutional practices (collective strategy development, planning routines) reconfigure these governance practices to generate novel project-based professional practices. This identical macro-level governance configuration enables reconstruction of divergent practice configurations at meso- and micro-levels.

Participants provided informed consent; data anonymity was ensured through pseudonymization and restricted access. Narrative interviews were chosen because narratives follow inherent constraints (detail, closure, condensation) that reveal conjunctive knowledge structuring ESD practice configurations (Nohl, 2010).

For the analysis, the documentary method was applied, which distinguishes between communicative and conjunctive knowledge (Bohnsack, 2020), enabling reconstruction of practice-constituting orientations through *formulating interpretation* (thematic structuring of communicative knowledge) and *reflecting interpretation* (comparative sequence analysis revealing homologous expressions across narration, description, and argumentation). Multiple cases enable reflection on the researcher's positionality and provide comparative reference points for reconstructing shared orientations underlying divergent ESD practice configurations.

5 Results

The following case analyses first summarize practices at macro-, meso-, and micro-levels, followed by narrative excerpts and their reflective interpretation.

5.1 Case 1: Teacher Education as preparation for teaching

At the macro-level, ESD governance practices are materialized through federal curriculum requirements establishing ESD integration as a cross-cutting theme in teacher education. At the meso-level, ESD was addressed in staff meetings, but lacked shared institutional coordination practices. At the micro-level, ESD appear within existing seminar routines, e. g. during curriculum analysis as standard activity at the beginning of teacher training. Trainees may address it in self-designed sessions, and external actors conduct a single annual service-learning workshop introducing trainees to forms of civic engagement connecting school learning with societal issues.

In Case 1, the seminar leader frames his primary responsibility as ensuring that trainees “learn to teach” within a tightly scheduled programme, while ESD is described as “one topic among many” competing with other demands and potentially addressable in a single self-directed assignment.

He states: “And the profession is, after all, the core business. I stand in the school every day for five hours. in front of my classes. in my subjects. So, um, that’s the challenge right now. And I have to be completely honest, ESD is not the central challenge at the moment.”

The quote's linguistic structure reveals an orientation toward subject-specific classroom teaching as the profession's constitutive core practice. The use of the particle “after all” suggests that teaching is treated as a self-evident and unquestioned core of the profession, while the noun phrase “core business” condenses the idea that subject-specific classroom teaching represents the primary professional task on which other activities depend. The listing “every day, five hours, in front of my classes, in my subjects” constructs teaching as a routine, recurring and clearly focused activity. and the introductory phrase “I have to be completely honest” legitimizes the prioritisation of this core business as a socially acceptable standpoint rather than a position to be debated. The absence of any justification why ESD is not considered core business suggests that the speaker takes this position as generally familiar and not requiring further debate. In this way, the quote directly links the orientation towards the core business with the current definition of what the most important challenge in teacher education is.

This shows also in this quote: “Well, that’s how it is, you know, there really is very little time for, actually one has to say too, stuff to the left and right of it.”

The quote’s linguistic structure reveals an orientation toward everyday time constraints as the profession’s constitutive barrier. The use of the discourse marker “Well, that’s how it is” establishes a resigned consensus about the unalterable reality of the status quo, while the intensifier “really” underscores the factual inescapability of time scarcity as an objective condition. The fragmentary clause “there really is very little time for,” abruptly broken off, performs the very interruption it describes, evoking the speaker’s experiential frustration with insufficient space for elaboration. The reflexive

correction “actually one has to say too” introduces a normative counterpoint—implying that a more comprehensive approach ought to be acknowledged—yet remains incomplete, mirroring the systemic neglect it critiques. The spatial metaphor “stuff to the left and right of it” condenses the hierarchy of priorities, flanking elements like ESD as expendable sidelines, with the deictic “of it” anchoring this to an unspoken curricular mainstream.

Further sequences reinforce this orientation: the seminar leader notes that, given a very tight schedule, trainees must primarily “learn how to teach, write lesson plans and prepare for exams,” leaving little opportunity to devote multiple seminar sessions to ESD. If ESD were confined to a single self-directed assignment, he remarks that he “would probably have done enough justice to ESD idea in a certain way,” immediately distancing himself from this approach. These formulations present ESD as something that is in principle negotiable and reducible, whereas teaching as core business is not. Moreover, ESD-related practices are often shifted to external actors, such as a volunteer service-learning agency that provides a one-day event per cohort, “opening the school beyond its four walls” and exposing trainees to experiences not normally available in everyday school life. These external offerings remain supplementary practices – additional and time-limited rather than reconfiguring the seminar’s core professional routines.

Taken together, these examples reconstruct a conjunctive orientation in which subject-specific classroom teaching constitutes the primary practice configuration of the teaching profession. Teacher education is organized around preparing trainees for this core practice bundle, while ESD practices are accommodated alongside established seminar routines rather than reconfiguring the central professional practices. This practice configuration manifests across weakly coordinated macro-, meso-, and micro-level practices. In the absence of meso-level organizational practices, macro-level ESD requirements are accommodated within the seminar leader’s orientation toward subject teaching as the core practice configuration. Consequently, ESD materializes as supplementary practices that are integrated into – but do not reconfigure – established teacher education routines.

5.2 Case 2: Teacher Education as Praxis-induced attitude change

At the macro-level, ESD governance practices are articulated through the federal curriculum and national frameworks, which position ESD as a cross-cutting theme. Similar to Case 1, the seminar leader participates in institutional meetings addressing potential ESD anchor points. Unlike in Case 1, however, these discussions extend into collective strategy development: the seminar leader engages colleagues in a collaborative planning process that establishes shared organizational routines for integrating ESD. At the level of everyday seminar practices, ESD is taken up through project-based work, interdisciplinary collaboration, and collegial teamwork. Following introductory sessions, trainees design and implement interdisciplinary ESD projects in their training schools, supported by seminar leaders and school staff. These projects create opportunities for experiential engagement and reflection within the seminar context. Organizational

practices at the meso level—such as poster presentations and discussions in ESD working groups—feed back into seminar practices by incorporating trainee experiences and reflections. In this way, project outcomes are collectively discussed and used to refine subsequent seminar formats. Supporting materials such as planning templates and shared documentation further stabilize these practices and facilitate their circulation within the institution. Through this recursive interplay between seminar practices and organizational coordination, ESD becomes embedded in the ongoing development of project-based seminar routines.

Illustrating this, the seminar leader said: “uhm, actually I have no chance in four hours to change anything about such inner attitudes, mindsets, and beliefs. (.) and that’s why ESD for me, I say ‘now’ a softer form, to pick up these things, and especially to bring them into language through doing and acting. (2) in order to then initiate thinking processes and also processes of change.”

The word “actually” functions as a modal particle, signaling that the seminar leader does not expect to exert immediate control over trainees’ inner attitudes through a traditional seminar. By referring to “such inner attitudes, mindsets, and beliefs,” she highlights that ESD targets selected dispositions rather than all personal orientations. The doubling in “through doing and acting” emphasizes the importance of practical engagement as the medium for learning. The phrase “in order to initiate thinking processes and also processes of change” indicates a clear pedagogical intent: ESD is designed to stimulate both cognitive reflection and practical transformation. Overall, these linguistic cues reveal an underlying understanding in which ESD is approached as a gradual, experiential, and project-based approach to fostering reflection and change, rather than a tool for immediate behavioral correction.

This shows also in this quote, when the seminar leader speaks about what education should look like: “One hope is that, after all the understanding, learning, and (2) evaluating, assessing, and coming to terms with things, I’ll be able to figure out what my life would look like if I actually faced up to it.”

The enumerative escalation “understanding, learning, and (2) evaluating, assessing, and coming to terms with things” escalates from detached cognition (“understanding, learning”) through intensifying judgment (“evaluating, assessing”) to existential grappling (“coming to terms”). The marked pause (2) perform the rupture between detached cognition and existential transformation. The phrasal verbs “figure out” and “faced up to it” shift abruptly to embodied agency—“figure out” demands active problem-solving beyond passive reception, while “faced up to it” and “actually” (modal contrast) signals authentic confrontation with personal reality. The conditional visualization “what my life would look like” projects concrete behavioral transformation, not abstract reflection. “One hope is” frames this as normative aspiration rather than achieved reality, with “hope” softening the demand into professional vision.

The seminar leader interprets ESD as a stimulus capable of initiating thinking and reflection processes, indicating an orientation toward initiating reflection and potential changes in beliefs through practical engagement. Other sequences reinforce this orientation. The seminar leader contrasts traditional “course teaching” with “other forms of group teaching,” such as project work and open learning formats, noting that schools of the future “will not get along with course teaching alone” and that teachers must

therefore learn to design and reflect on such formats during their training. She further emphasizes the collaborative dimension of ESD projects, explaining that it is “very much in order, desired and also fruitful” to work in teams rather than “doing everything alone.” In this way, ESD serves not only as a thematic stimulus but also as a medium for practicing collegial collaboration and for questioning narrow, subject-bound notions of professional responsibility.

These examples reconstruct a conjunctive orientation toward practice-induced attitude change through iterative practice development. ESD appears as project-based experiential learning beyond subject routines. Strong meso-micro coupling is evident in integrated feedback loops between ESD projects, collegial exchange, and organizational routines.

6 Discussion and Reflection

This study demonstrates that seminar leaders’ conjunctive orientations constitute which practice bundles dominate under identical governance conditions: subject-teaching routines (Case 1) marginalize ESD as supplementary practice, while project-reflection routines (Case 2) integrate ESD as constitutive practice. Governance practices do not determine educational practices – rather, competing bundles selectively integrate or marginalize policy impulses. This extends teacher ESD studies (Heinze, 2022) from classroom to seminar leader level, showing that conjunctive knowledge at carrier level mediates policy translation more decisively than formal curricular mandates. While international research documents policy penetration limits through institutional filtering (Viennet & Pont, 2017), this study reveals the carrier-level mechanisms – seminar leaders’ conjunctive orientations – that enable or block translation under identical governance conditions (Hangartner, 2019; von Seggern & Singer-Brodowski, 2020).

Case 2’s project-based ESD integration might suggest project-based learning adoption – yet Espino-Díaz et al. (2025) found project-based learning enhances sustainability knowledge but has limited effects on curriculum integration or perceived professional relevance. These bundle misalignments exemplify Breidenstein’s (2021) practice interference concept. “To what extent do practices interfere with each other? To what extent do they fit together or complement one another?” (Breidenstein, 2021, p. 947). To what extent do competing routines reinforce or crowd out ESD? Case 1 couples ESD also to curriculum analysis (potentially discipline-bound), Case 2 to project-based Learning (which shows documented integration limits). Whether these bundle-specific integration patterns travel to classroom practice – amplifying or extinguishing ESD – remains empirically open. While this analysis focuses on teacher education’s second phase, future research must examine how these bundle-specific ESD practices travel across professionalization phases and transform in the transition to school classrooms.

The study has several methodological limitations. First, practices were reconstructed exclusively through narrative interviews with seminar leaders. While this approach is well suited to capturing orientations and reported routines (Nohl, 2010), interviews cannot fully capture situational meso-dynamics, such as staff interactions or material mediation, nor the broader multi-actor complexity of governance processes (Emerson et

al., 2011). Second, ethnographic triangulation could strengthen the analysis of practice interference and material dimensions, for example by examining how curricular documents shape ESD practices at the meso- and micro-levels. Finally, governance processes unfold through complex interactions between different actor groups and across temporal developments. A focus on seminar leaders' perspectives can therefore represent this complexity only partially. Trainee perspectives should be included in future research.

7 Conclusion

Identical ESD governance produces divergent teacher education practices through seminar leaders' conjunctive orientations constituting competing practice bundles. Teaching routines marginalize ESD as curriculum analysis; project routines partially enable it amid integration limits. Practice theory reveals: Policy translation depends not on formal mandates, but carrier-level practical knowledge. These bundle-specific integration patterns and their classroom travel warrant systematic future investigation across professionalization phases.

References

1. Ahenakew, C., Andreotti, V., Čajková, T., Stein, S., & Suša, R. (2022). From “education for sustainable development” to “education for the end of the world as we know it”. *Educational Philosophy and Theory*, 54(3), 274–287. <https://doi.org/10.1080/00131857.2021.1948270>
2. Álvarez-Castillo, J. L., Espino-Díaz, L., Fernández-Caminero, G., & Luque-González, R. (2025). Exploring the impact of project-based learning on sustainable development goals awareness and university students' growth. *European Journal of Educational Research*, 14(1), 283–300.
3. Barth, M., Büssing, A., Fischer, D., Hemmer, I., King, J., Lindau-Bank, D., & Rieckmann, M. (2022). Teacher education for sustainable development: A review of an emerging research field. *Journal of Teacher Education*, 73(5), 509–524. <https://doi.org/10.1177/00224871221105784>
4. Bianchi, G., Cabrera Giraldez, M., & Pisiotis, U. (2022). *GreenComp: The European sustainability competence framework* (JRC Working Papers JRC128040). Publications Office of the European Union. <https://doi.org/10.2760/13286>
5. Bohnsack, R. (2010). Documentary method and group discussions. In R. Bohnsack, N. Pfaff, & W. Weller (Eds.), *Qualitative analysis and documentary method in international educational research* (pp. 99–124). Barbara Budrich.
6. Bohnsack, R. (2020). *Professionalisierung in praxeologischer Perspektive: Zur Eigenlogik der Praxis in Lehramt, Sozialer Arbeit und Frühpädagogik*. Barbara Budrich.
7. Breidenstein, G. (2021). Interferierende Praktiken: Zum heuristischen Potenzial praxeologischer Unterrichtsforschung. *Zeitschrift für Erziehungswissenschaft*, 24(4), 933–953. <https://doi.org/10.1007/s11618-021-01039-2>
8. Brock, A., de Haan, G., Holst, J., & Singer-Brodowski, M. (2020). Monitoring progress of change: Implementation of education for sustainable development (ESD) within documents of the German education system. *Sustainability*, 12(10), Article 4306. <https://doi.org/10.3390/su12104306>

9. Donche, V., Sinakou, E., & Van Petegem, P. (2024). Teachers' profiles in education for sustainable development: Interests, instructional beliefs, and instructional practices. *Environmental Education Research*, 30(3), 397-418. <https://doi.org/10.1080/13504622.2023.2295286>
10. Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes* (2nd ed.). The University of Chicago Press.
11. Goller, A., & Rieckmann, M. (2022). What do we know about teacher educators' perceptions of education for sustainable development? A systematic literature review. *Journal of Teacher Education for Sustainability*, 24(1), 19-34. <https://doi.org/10.2478/jtes-2022-0003>
12. Hangartner, J. (2019). Doing governance – Eine praxistheoretische Perspektive auf Governance im Bildungswesen. In T. Brüsemeister & R. Langer (Eds.), *Handbuch Educational Governance Theorien* (pp. 309-326). Springer. https://doi.org/10.1007/978-3-658-22237-6_16
13. Heinze, F. (2022). *Bildung für nachhaltige Entwicklung als schulische Querschnittsaufgabe: Anforderungen an Lehrpersonen*. Barbara Budrich.
14. Nohl, A.-M. (2010). Narrative interview and documentary interpretation. In R. Bohnsack, N. Pfaff, & W. Weller (Eds.), *Qualitative analysis and documentary method in international educational research* (pp. 195-214). Barbara Budrich.
15. Pont, B., & Viennet, R. (2017). *Education policy implementation: A literature review and proposed framework* (OECD Education Working Papers No. 162). OECD Publishing. <https://doi.org/10.1787/fc467a64-en>
16. Reckwitz, A. (2003). Grundelemente einer Theorie sozialer Praktiken: Eine sozialtheoretische Perspektive. *Zeitschrift für Soziologie*, 32(4), 282-301. <https://doi.org/10.1515/zfsoz-2003-0401>
17. Singer-Brodowski, M., & von Seggern, J. (2020). Why context matters for educational policy – Analysing interactive practice in the governance of education for sustainable development in Germany. *Zeitschrift für internationale Bildungsforschung und Entwicklungspädagogik*, 43(4), 25-29. <https://doi.org/10.31244/zep.2020.04.05>

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