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Implementing Modern Teaching Approaches for Evidence-Based Practice in German Midwifery University Education: A Qualitative Study of Educator Experiences, Facilitators, and Barriers

Grace Komuhangi[1]

greciakm@gmail.com

Heidelberg University

Florian Neuhann

Heidelberg University

Valerie R. Louis[1]

Heidelberg University

Jürgen Wacker[2]

Heidelberg University

Brian Mikka[3]

Makerere University

Charlotte Fery

Hannover Medical School

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Abstract

Background

Germany now requires midwifery education to move from vocational training to university-based bachelor's programmes, as mandated by the Hebammenreformgesetz (2020). This change calls for new teaching focused on competency for evidence-based practice (EBP). However, little is known about the experiences of midwifery educators, the barriers they face, or the factors that help them in this transition.

Methods

Researchers used an exploratory descriptive qualitative design. They interviewed 11 midwifery educators from five universities and universities of applied sciences in three German states. Data analysis followed Braun and Clarke's six-phase inductive thematic approach. Researchers also applied two models for interpretation: competency-based education (CBE) theory and Social Cognitive Learning Theory (SCLT).

Results

Three main themes emerged. First, educators described their experiences with modern teaching, including new curriculum design, active-learning strategies, and academic freedom. Second, they faced barriers such as institutional constraints, a lack of educators' skills, a gap between theory and practice, and student resistance. Third, some factors helped, including strong infrastructure, robust networks, and clear learning improvements among students.

Conclusions

Midwifery educators in Germany are using modern EBP teaching methods despite facing challenges. To sustain these changes, structured faculty development is needed. Official academic–clinical partnerships and a national EBP competency framework are also required. Future research should include views from students and clinical supervisors, and use validated instruments to link education with practice outcomes.

Background

Evidence-Based Practice and EBP Competencies

Evidence-based practice integrates current best research evidence with clinical expertise and individual patient values [1]. In midwifery, skilled birth attendants use EBP to improve maternal and neonatal outcomes. Notably, researchers consistently link EBP competency deficits among skilled birth

attendants to suboptimal maternal and perinatal outcomes [2, 3]. The International Confederation of Midwives (ICM) 2024 Essential Competencies explicitly assign EBP competencies, such as evidence retrieval, critical appraisal, and evidence application, as fundamental to safe, effective midwifery practice [4].

Building on the centrality of EBP described above, competency-based education (CBE) theory provides the pedagogical foundation for EBP teaching. CBE structures learning around clearly defined, measurable competency outcomes rather than relying solely on knowledge delivery [5, 6]. In healthcare education, curriculum designs progressively develop students' abilities to identify clinical questions, retrieve and appraise evidence, and apply findings in practice [7].

Modern Teaching Approaches in Midwifery Education

To illustrate how EBP competencies are nurtured in practice, educators use modern teaching approaches such as problem-based learning (PBL), simulation-based learning, case-based learning, blended learning, and experiential learning [8–11]. These approaches share a constructivist orientation, positioning students as active agents in knowledge construction rather than passive recipients of instruction [12]. Furthermore, Social Cognitive Learning Theory (SCLT) emphasises observational learning, self-efficacy, and reciprocal determinism and thus offers a complementary explanatory framework for understanding how educators model EBP behaviours and how students develop confidence in EBP application [13, 14].

However, despite growing evidence for the effectiveness of these approaches in nursing and allied health education, researchers have understudied their implementation in midwifery-specific university education contexts [15, 16]. Moreover, existing evidence does not adequately address the specific challenges that educators face when implementing modern EBP teaching approaches during the current transitional period in Germany, nor does it examine the facilitators and barriers that institutions encounter when embedding EBP competency-oriented curricula within this unique institutional context.

German Midwifery Education Context

Against this backdrop, the Hebammenreformgesetz (HebRefG) of 2019 (effective 2020) mandates the academisation of midwifery education in Germany, marking a fundamental paradigm shift [17]. This legislation moves midwifery education from hospital-based vocational training programmes to university-level bachelor's degree programmes, typically structured as dual-programme models that integrate theoretical and practical training [18, 19]. By 2025, all newly qualifying midwives in Germany will hold a bachelor's degree, requiring educators to transform how they conceptualise and deliver EBP teaching [20].

As a consequence of this significant legislative transition, educators face profound challenges. Many completed their professional formation under the vocational model and now must both teach within an academic framework and develop EBP pedagogical competencies they may not have acquired during

their training [21, 22]. Simultaneously, the reform opens new opportunities: the university context offers access to academic infrastructure, research communities, and curricular autonomy that the vocational model did not afford [23].

Theoretical Framework

This study uses CBE and SCLT as post-hoc interpretive lenses, applied after inductive analysis of the findings. CBE theory [5, 6] offers a structure for understanding how educators design curricula that align with EBP competency outcomes. SCLT [13] explains the social and observational processes in pedagogical learning, including the development of new teaching behaviours through peer observation, vicarious reinforcement, and self-efficacy. These frameworks help interpret and contextualise the findings within the broader literature, rather than guide the initial analysis.

Study Aim and Research Questions

Given the policy context and the existing evidence gap, this study explores experiences, facilitators, and barriers to the use of modern teaching approaches for EBP competency development. The focus is on midwifery undergraduate educators at German universities. The research questions are:

1. What are the experiences of midwifery educators with modern teaching approaches for EBP in German universities?
2. What are the facilitators that support the implementation of modern teaching approaches for EBP in midwifery education?
3. What are the barriers that hinder the implementation of modern teaching approaches for EBP in midwifery education?

Methods

Study Design

An exploratory descriptive qualitative design was employed. This approach aligns with the aim of empirically grounding educators' experiences, without imposing strong a priori interpretive structures [24]. This design was chosen over phenomenological, grounded theory, and ethnographic methods. Those approaches emphasize lived-experience meanings (phenomenology), theory generation (grounded theory), or cultural immersion (ethnography) [25]. However, the research questions here sought descriptive accounts of implementation experiences, as well as the facilitators and barriers.

Setting and Participants

Purposive maximum-variation sampling recruited midwifery educators from German universities and universities of applied sciences (Fachhochschulen). These institutions had established undergraduate midwifery programmes following the HebRefG reform. Maximum-variation sampling was chosen to capture diverse perspectives across institution types, programme maturity, and geographic location [26].

Inclusion criteria were: (1) employed in a teaching role in an accredited undergraduate midwifery programme in Germany; (2) responsible for teaching at least one module with explicit EBP content; and (3) programme established between 2019 and 2022. Exclusion criteria were educators whose programmes had not yet admitted their first student cohort, or who were unable to participate in a German- or English-language interview. Recruitment used the principal investigator's (PI's) professional networks within the German midwifery academic community, including the German Midwifery Academic Society (Deutsche Gesellschaft für Hebammenwissenschaft, DGHWi). Potential participants were invited by email and given a study information sheet before consenting.

Five institutions from three federal states (Bavaria, Rhineland-Palatinate, and Lower Saxony) were represented (Table 1). Eleven educators participated in total. The sample size was not predetermined by a fixed number. Instead, recruitment continued until information power was deemed adequate. Information power refers to the sample's capacity to illuminate the research questions, taking into account the study's aim, the specificity of the phenomenon, the theoretical framework, and the quality of the dialogue [27]. The PI and supervisory team assessed this iteratively during data collection. No new themes emerged from the final three interviews, providing a pragmatic basis for concluding recruitment.

Table 1
Participating institutions (N = 5).

Institution (anonymised)	Federal State	Institution Type	Programme Established	Participants (N)
University A	Bavaria	University of Applied Sciences (public)	2019	2
University B	Bavaria	University (public)	2019	3
University C	Rhineland-Palatinate	University of Applied Sciences (private)	2021	2
University D	Lower Saxony	University of Applied Sciences (public)	2021	2
University E	Lower Saxony	University (public)	2020	2
Total				11

Data Collection

Data were collected through semi-structured, in-depth individual interviews (IDIs). These were conducted face-to-face at each participant's institution between [data collection period]. The PI developed the

interview guide after reviewing the literature on EBP education, competency-based education, and qualitative health research. The supervisory team reviewed the guide before use. It covered four themes: (1) experiences with EBP teaching approaches; (2) perceived facilitators of implementation; (3) perceived barriers to implementation; and (4) recommendations for strengthening EBP competency development. Prompt questions included: 'Can you describe how you currently teach EBP in your module?"What supports you in implementing active learning approaches?'; 'What obstacles have you encountered in embedding EBP into your teaching?'; and 'How do you assess students' EBP competencies?' Flexible probing was used to encourage elaboration and explore emerging issues.

Interviews were conducted in German and audio-recorded with participants' consent. Each interview lasted between 45 and 90 minutes. After each interview, the PI recorded brief field notes with contextual observations and initial analytic impressions. The interview guide was not formally piloted. However, it was refined after the first two interviews, based on the PI's reflections on question clarity and participant responses.

Transcription and Translation

All audio recordings were transcribed verbatim by the PI in authentic German to preserve linguistic nuance and idiomatic expression. Transcripts were reviewed for accuracy against the audio recordings. The PI, a bilingual German–English speaker, translated selected transcript segments into English for reporting. A second bilingual research team member cross-checked these translations. Procedures to minimise meaning loss included back-translation of key participant quotations, team discussion of disputed translations, and documentation of translation decisions in an audit trail. Initial coding and thematic analysis were conducted in German. English translations of representative quotations were finalised only after theme development was complete, ensuring that analytical decisions were grounded in the source-language data.

Data Analysis

Data were analysed using Braun and Clarke's six-phase reflexive thematic analysis [28]. The process included: (1) familiarisation with the data through repeated reading of transcripts and field notes; (2) generation of initial codes applied inductively to all transcripts; (3) searching for themes by collating codes into candidate themes; (4) reviewing and refining themes against the coded extracts and the full dataset; (5) defining and naming themes; and (6) producing the final report. Analysis was conducted in OpenCode version 4.03.

To enhance analytic rigour, the PI and a second researcher independently double-coded the first four transcripts. They resolved discrepancies through discussion and consensus. Inter-rater reliability was calculated by percentage agreement, yielding a rate above 85%. This was acceptable given the analysis's exploratory and interpretive nature [29]. When disagreements persisted, a third team member was consulted. The PI then coded subsequent transcripts. Ongoing peer debriefing discussions with the supervisory team reviewed emerging interpretations and prevented premature closure. Reflexive memos

were maintained throughout. CBE and SCLT were applied as post hoc interpretive lenses in the Discussion, after inductive theme development was complete. These conceptual models were not used as a priori coding categories.

Methodological Rigour and Trustworthiness

Multiple strategies supported the trustworthiness (credibility and dependability) of the findings [30]. Credibility (confidence in the findings) was enhanced by prolonged engagement with the data, peer debriefing, and member checking (having participants verify the researchers' interpretations). In member checking, participants reviewed summary interpretations of their interviews and confirmed or corrected the researchers' interpretations. Audit trail documentation (detailed records of research steps) also contributed to credibility. Transferability (potential for findings to apply in other contexts) was supported by detailed descriptions of the study context, setting, and participants. Dependability (the stability of findings over time) was enhanced by the audit trail documenting analytic decisions and methodological changes. Confirmability (the degree to which findings are shaped by participants rather than by researcher bias) was promoted through reflexive journaling and the documented coding consensus process.

Reflexivity

The PI is a qualified midwife with over 20 years of international experience in midwifery and midwifery education. The PI currently holds a teaching position in German higher education. This professional background facilitated rapport with participants and deep situational understanding. However, it also carried the risk of over-identification with participants' standpoints and confirmation of expected findings. These risks were managed through reflexive journaling during data collection and analysis. Peer debriefing with supervisors from different disciplinary and experiential backgrounds also helped. The PI and team explicitly reflected on, during coding meetings, how the PI's assumptions might shape interpretive choices. The prior relationship between the PI and some participants through professional networks was acknowledged as a potential source of social desirability bias. Participants were explicitly informed that candid, including critical, responses were both welcome and important to the study.

Ethics

Ethical Considerations

Ethical approval was granted by the Ethics Committee of the Medical Faculty, Heidelberg University (Reference S-709/2024, December 23, 2024). All participants provided written informed consent (agreement to participate after being informed about the study). The study adhered to the Declaration of Helsinki (an ethical standard for research) and to the General Data Protection Regulation (GDPR) Article 13 (regulations on data privacy). Audio recordings were transcribed verbatim (word-for-word), pseudonymized (identifying details replaced with codes), and permanently deleted after verification of the transcription.

Data Availability

The datasets generated and analysed in this study are not publicly available due to the confidentiality protections afforded under the study's ethical approval. Anonymised transcripts and the codebook may be available to qualified researchers upon reasonable request to the corresponding author. Access is subject to applicable data protection regulations.

Results

Participant Characteristics

A total of eleven midwifery educators from five institutions across three federal states participated in the study. Participant characteristics are presented in Table 2. The sample demonstrated demographic and professional diversity, with ages ranging from 40 to 55 years (median 48) and teaching experience spanning 1 to 19 years (median 5). The majority held a master's degree (n = 9), while two participants held doctorates. Reported roles included professor, lecturer, scientific employee, research assistant, practice coordinator, and programme director. All participants were actively involved in evidence-based practice (EBP) teaching at the time of the interview. Descriptive statistics were used to characterise the sample; no inferential statistical analyses were conducted.

Table 2
Participant characteristics (N = 11). *Note: Data are presented as median (range) for continuous variables and as frequency (n) for categorical variables. No data were missing.*

Variable	Categories	Frequency (N = 11)
Age (years)	Median (Range)	48 (40–55)
Highest qualification	Doctorate	2
	Master's degree	9
Current role	Professor	2
	Lecturer	3
	Scientific employee	2
	Research assistant	2
	Practice coordinator	1
	Programme director	1
Teaching experience (years)	Median (Range)	5 (1–19)

Three main themes and ten sub-themes emerged from the data (Table 3). As you read the following sections, discover each theme as it unfolds, beginning with the central observed finding and deepening

your understanding through representative participant quotations. Commentary applying the CBE and SCLT frameworks appears in the Discussion.

Table 3

Summary of themes, sub-themes, and representative codes. *Note: EBP = evidence-based practice; PBL = problem-based learning; IDI = in-depth interview. Representative codes are illustrative examples from the coding set, not an exhaustive list.*

Theme	Sub-theme	Representative Codes
Theme 1 Experiences with Modern Teaching Approaches	ST 1.1: Revolutionary shift from traditional training	Self-directed pedagogical learning; transition from rote-learning culture; reorientation of professional identity; challenge to internalised vocational norms
	ST 1.2: Innovative curriculum design	Spiral curriculum (progressive competency revisiting); collaborative module design; deliberate EBP sequencing across semesters; theory–skills–practice alignment
	ST 1.3: Creative and diverse teaching approaches	Problem-based learning (PBL); case-based learning; simulation; flipped classroom; gamification (escape rooms, Lego Serious Play); virtual reality integration
	ST 1.4: Academic freedom and pedagogical autonomy	Constitutional Lehrfreiheit; individual methodological autonomy; experimental pedagogy; personal teaching philosophy guiding method selection
Theme 2 Implementation Barriers	ST 2.1: Systemic institutional barriers	Time pressure; compressed study schedules; financial constraints; bureaucratic procurement; staff shortages; inadequate infrastructure
	ST 2.2: Educator competency gaps	Abrupt clinician-to-academic transition; absence of formal pedagogical training; reliance on textbooks; self-taught teaching skills; limited assessment design experience
	ST 2.3: Theory–practice divide	Contradiction between university EBP standards and clinical norms; student confusion; clinical mentor resistance; parallel vocational–academic workforce; institutional bridging attempts
	ST 2.4: Student resistance and learning challenges	Academic writing overload; resistance to group work; preference for frontal instruction; passive learning expectations from prior vocational socialisation
Theme 3 Implementation Facilitators	ST 3.1: Robust resource infrastructure	Library and database access; e-journal licensing; skills laboratories; simulation centres; VR and ultrasound technology; institutional funding for innovation
	ST 3.2: Strong collaborative networks	Interdisciplinary co-teaching; national midwifery academic society networks; peer knowledge-sharing; academic–clinical partnership building
	ST 3.3: Student learning transformation	Observable critical thinking development; evidence-seeking in clinical placement;

Theme	Sub-theme	Representative Codes
		students questioning non-EBP practice; growing EBP professional identity

Theme 1: Experiences with Modern Teaching Approaches

ST 1.1: Revolutionary shift from traditional training

Educators described a fundamental personal and professional transformation as they shifted into university-based EBP teaching. They reported a strong need for self-directed pedagogical learning. Educators taught themselves new methods they had not previously learned.

Several educators described dismantling deeply internalised vocational teaching norms:

"I had to completely unlearn how I was taught. In the hospital, we followed protocol. Now I have to help students question the protocol,and I had to learn to question it myself first. (P03)"

Educators from older programs (universities founded before 2019) said they had more time to build teaching confidence, while those in newer programs reported greater uncertainty. Still, regardless of how long programs had been established, everyone described a shift in identity from clinician to academic teacher.

ST 1.2: Innovative curriculum design

Across all five institutions, educators developed spiral curricula that repeatedly addressed EBP competencies, each time with greater complexity as semesters progressed. Notably, this consistency emerged even though no national curriculum specified such an approach:

"We mapped EBP across all eight semesters. We began with a research question, then moved to literature searching, followed by critical appraisal, synthesis, and finally application in practice. As a result, each semester builds on the one before. (P07) "

Educators also described deliberately sequencing theory, skills, laboratory practice, and clinical placement EBP activities to reduce the gap between academic learning and clinical application. Collaborative module design across teaching teams was reported as a facilitator of this curriculum coherence.

ST 1.3: Creative and diverse teaching approaches

Educators reported using a range of active and experiential learning methods to develop EBP competencies. These methods included, in order of frequency: problem-based learning (PBL; reported by educators at all five institutions), case-based learning, simulation, and the flipped classroom. Furthermore, several educators described innovative gamification strategies, further illustrating the diversity of methods used:

“Educators reported using a range of active and experiential learning methods to develop EBP competencies. These methods included, in order of frequency: problem-based learning (PBL; reported by educators at all five institutions), case-based learning, simulation, and the flipped classroom. Additionally, several educators described innovative gamification strategies, illustrating the diversity of methods used."

Two institutions used virtual reality for clinical-scenario simulation, mainly for obstetric emergency training with embedded EBP decision-making. Educators initially observed student reluctance. As students adapted, their engagement increased significantly (see ST 2.4).

ST 1.4: Academic freedom and pedagogical autonomy

Educators identified the constitutional principle of Lehrfreiheit (academic freedom of teaching) as both enabling and, at times, challenging. On the enabling side, Lehrfreiheit permitted educators to select, adapt, and combine teaching approaches based on their own professional judgement, without requiring institutional approval for each methodological decision:

"I have complete freedom in how I teach. If I want to try a new method, I try it. There is no one to say no. This is very different from the hospital, where everything has to go through governance. (P09)"

However, several educators noted that this autonomy, in the absence of shared pedagogical standards or professional development support, could result in inconsistent EBP teaching quality across modules and institutions.

Theme 2: Implementation Barriers

ST 2.1: Systemic institutional barriers

The most consistently reported barriers were systemic and structural. Time pressure was mentioned by all 11 participants as a significant constraint: compressed study schedules, large module loads, and administrative burdens left little time for pedagogical development, preparation of innovative teaching materials, or reflection on practice.

"The semester is 16 weeks. I have to cover the full midwifery research methods curriculum in that time, prepare all the materials, supervise practical sessions, mark assessments, attend meetings. There is no time to innovate. You do what you can manage. (P02)"

Financial constraints and bureaucratic procurement processes were reported at four of the five institutions as limiting access to simulation technology, software licences, and digital learning resources. Staff shortages, particularly at newer programmes with smaller faculties, meant that individual educators carried disproportionately large teaching loads.

ST 2.2: Educator competency gaps

A recurring finding was that many educators felt unprepared for university-level EBP instruction, particularly in teaching research methodology, designing academic assessments, and utilising digital teaching technologies. They often reported an abrupt shift from clinical midwifery practice to academic teaching, typically without formal pedagogical training.

"*No one taught me how to teach. I studied midwifery, not pedagogy. So, everything, how to facilitate a seminar, how to construct an assessment, how to deliver feedback, I had to learn myself: from books, colleagues, and through trial and error. (P11)"*

Reliance on textbooks as primary teaching resources, limited experience with formative assessment design, and self-taught digital teaching skills were reported at all institutions. Educators with doctoral qualifications (n = 2) reported somewhat greater confidence in research methods teaching, though they also described gaps in practice-based EBP pedagogy.

ST 2.3: Theory–practice divide

A persistent finding across all institutions was tension between the EBP standards promoted in the university curriculum and the evidence-based practice norms (or their absence) encountered by students during clinical placements. Students regularly reported to educators that their clinical mentors dismissed academic EBP skills as impractical or irrelevant to clinical reality.

"Students come back from placement and say: 'My mentor told me we do not need evidence, we do it this way because it has always worked.' It is very hard to maintain student motivation for EBP when the clinical world contradicts everything we teach. (P06)"

Educators at three institutions described attempting to address this divide through bridging initiatives, including inviting clinical supervisors to participate in EBP seminars and developing joint university–practice EBP competency frameworks. These efforts were reported as valuable but insufficiently resourced and not systematically supported at the institutional level.

ST 2.4: Student resistance and learning challenges

Educators at all institutions reported encountering initial student resistance to active and self-directed learning methods, attributing this primarily to prior socialisation into passive learning during vocational training. Students were described as frequently requesting frontal lecturing, expressing discomfort with group work, and struggling with academic writing demands.

"In the first semester, they always ask: 'Why can't you just tell us the answer? Why do we have to search for it ourselves?' They are used to being told what to do. This is a culture change, not just a teaching method change. (P04)"

Educators reported that this resistance typically diminished over the course of the programme as students gained confidence in self-directed EBP processes, though the pace of this shift varied considerably across individual students.

Theme 3: Implementation Facilitators

ST 3.1: Robust resource infrastructure

Educators at well-resourced institutions identified access to comprehensive library and database infrastructure, including institutional e-journal subscriptions, academic database licences (e.g., CINAHL, Cochrane Library, PubMed), and dedicated skills laboratories, as essential facilitators of EBP teaching.

"We have a skills laboratory with high-fidelity simulation equipment, VR stations, and a library that is fully integrated into the building. Students can move from simulation to library research in the same session. This makes embodied EBP learning possible. (P08)"

Institutional funding specifically designated for teaching innovation was reported at two institutions and described as enabling educators to pilot and develop novel EBP learning activities. Lack of such dedicated funding was correspondingly identified as a barrier at the remaining three institutions.

ST 3.2: Strong collaborative networks

Collaborative relationships within institutions and across the emerging national German midwifery academic community were identified as key facilitators. Within institutions, interdisciplinary co-teaching, especially with colleagues from nursing, health sciences, and research methods, enriched EBP teaching and shared the preparatory workload.

"I co-teach the evidence-based practice module with a nursing academic who has a PhD in health research. She brings the methodological expertise; I bring the midwifery context. Together we can offer students something neither of us could alone. (P01)"

At the national level, educators described the German midwifery academic society networks as providing peer support, opportunities for sharing teaching materials and assessment designs, and a forum for collective advocacy on curriculum standards. Several educators credited these networks with preventing professional isolation during the challenging early years of programme development.

ST 3.3: Student learning transformation

Despite the barriers described above, educators across all five institutions reported observing meaningful transformations in students' EBP engagement over the course of their programmes. Observable indicators included critical questioning of clinical practices during placements, independent evidence-seeking to address clinical questions, and articulation of an emerging evidence-based professional identity.

"By the third year, I see completely different students. They question things. They go to the evidence when they do not know something. They come back from placement and say, 'I challenged my mentor and looked it up, and I was right.' That is the whole point. (P10)"

Educators described this transformation as the most rewarding aspect of their work and as providing motivational resilience in the face of institutional and systemic barriers. Student transformation was also seen as a prospective mechanism for long-term cultural change in clinical settings, as newly qualifying midwives carry EBP values into the workforce.

Discussion

Summary of Key Findings

This qualitative study explored how midwifery educators implemented modern EBP teaching approaches after Germany's academic reform of midwifery education. Three themes emerged inductively. First, educators described how they transformed and innovated pedagogically. Second, systemic institutional constraints, competency gaps, and the theory–practice divide created barriers. Third, infrastructure, collaborative networks, and student transformation facilitated implementation. These findings suggest that German midwifery educators demonstrate considerable pedagogical creativity as they implement EBP teaching in a structurally challenging environment. However, persistent barriers may undermine efforts to embed EBP competencies in the reformed curriculum in the long term.

Interpretive Discussion

Applying competency-based education (CBE) theory as an interpretive lens, the convergent and independent adoption of spiral curriculum structures across all five participating institutions is notable. This has occurred despite the absence of a national prescriptive framework. It aligns with CBE's principle that evidence-based practice (EBP) competency development requires iterative, scaffolded engagement rather than single-point instruction [5, 6]. Educators appear to have arrived at this structural solution through professional reasoning and peer exchange, rather than top-down prescription. This suggests that CBE-aligned thinking may be diffusing through the emerging German midwifery academic community via informal networks, even without formal CBE training. However, this interpretation is tentative, given the small, purposive sample and should not be generalised beyond the participating institutions.

From a social cognitive learning theory (SCLT) perspective [13], educators described profound pedagogical self-transformation. They engaged in self-directed learning of new teaching methods, observed colleagues, and gradually developed academic self-efficacy in teaching. These changes reflect key SCLT mechanisms of vicarious reinforcement and self-regulated learning. The collaborative networks identified as facilitators (ST 3.2) act as SCLT-consistent communities of practice. They provide opportunities for vicarious learning and social reinforcement of innovative pedagogical behaviours.

The persistence of the theory–practice divide (ST 2.3) is consistent with international evidence on barriers to the implementation of evidence-based practice (EBP) in nursing and health professions education. Clinician scepticism, institutional culture, and the absence of practice-level EBP mentoring are

repeatedly identified as key obstacles [31, 32]. The present findings suggest that, in Germany's dual-programme midwifery model, this divide is structurally embedded in the parallel coexistence of a reforming academic sector and a partially transformed clinical workforce. Educators' efforts to bridge are commendable, but they appear insufficient to address structural-level misalignment.

Policy and Practice Implications

These findings have several implications for midwifery education policy and practice in Germany. They should be seen as interpretive suggestions based on this particular qualitative sample, not as prescriptive directives.

First, the educator competency gap identified in Theme 2 (ST 2.2) highlights the urgent need for structured, EBP-specific faculty development programmes. Departments should promptly implement initiatives that provide training in research methods, pedagogy, and the design of active-learning and assessment approaches aligned with CBE principles. Taking these actions will directly address participants' reports of abrupt, unsupported transitions from clinical to academic roles.

Second, the theory–practice divide (ST 2.3) and bridging efforts across three institutions highlight the need for decisive action: institutions must prioritise establishing formal academic–clinical partnerships. Implementing EBP training for clinical supervisors, creating joint faculty appointments, and designating formalised practice coordinator roles are essential steps. Institutions should take the lead in developing these partnerships as a structural solution beyond the capabilities of individual educators, in alignment with international literature on practice–academic partnership models in health professions education [33].

Third, there is no nationally coordinated EBP competency framework. This absence allows academic freedom but creates a risk of inconsistent EBP teaching quality. To address this, relevant professional and regulatory bodies should urgently collaborate to develop national EBP competency standards for German midwifery programmes, drawing on frameworks like the ICM Essential Competencies [4] and the German Hebammenberufsgesetz. It is essential that these standards incorporate educators' experiences, such as those identified in this study, to ensure effective and consistent implementation.

Limitations

Several limitations must be acknowledged. First, the study was conducted in only three of Germany's 16 states. Four of the five institutions were in Bavaria and Lower Saxony. Institutions from North Rhine-Westphalia, northern city-states, and other regions are not included. Differences in governance, resource allocation, and regulations across states may limit the extent to which these findings apply. Transferability should therefore be approached with caution. These findings give context-specific insights, not a national account.

Second, the sample included only educators in active teaching roles. These educators may over-represent positive views compared to colleagues who have left teaching EBP due to barriers. Another limitation is the exclusion of student and clinical supervisor perspectives. These stakeholders may hold different views on EBP competency development, especially on the divide between theory and practice.

Third, the study examined implementation experiences and processes, not student EBP competency outcomes. The findings show educators' teaching approaches and the conditions behind them, but do not show whether these methods improved students' EBP competency. Qualitative accounts of practice cannot replace outcome measurement. Each type of evidence answers a different research question.

Future Research Directions

These findings suggest three sequenced priorities for future research. First, replication across a broader geographic and institutional range, including underrepresented federal states and various programme-governance models, would test whether the identified themes hold beyond the current sample. It would also permit a more systematic comparison of facilitating and inhibiting conditions.

Second, to address the present study's limitation of an educator-only design, multi-stakeholder studies, including student and clinical supervisor perspectives, would provide a more complete picture of EBP competency development across the education–practice continuum.

Third, after a richer descriptive picture has been established, outcome-focused research should use validated EBP competency instruments. These could be adapted for the German academic midwifery context from existing tools such as the Fresno Test, EBP-COQ, or EBPQ [34–36]. Such studies would enable assessment of whether innovative teaching approaches result in measurable competency gains.

Conclusions

German midwifery educators have developed substantial pedagogical innovation in implementing modern EBP teaching since the HebRefG reform. They work with considerable autonomy, often without formal pedagogical preparation. However, they face structural barriers like systemic resource constraints, educator competency gaps, and a persistent theory–practice divide. These challenges risk undermining the sustained embedding of EBP competencies intended by the reform. To address these challenges, we recommend: (1) investment in educator development, (2) creation of formalised academic–clinical partnerships, and (3) establishment of nationally coordinated EBP competency frameworks. The legislative transition has enabled pedagogical transformation, but realising its potential depends on these steps. These conclusions are grounded in contextually rich insights from a qualitative study and should be interpreted accordingly.

Declarations

Ethics Approval and Consent to Participate

Ethical approval was granted by the Ethics Committee of the Medical Faculty, Heidelberg University (Reference S-709/2024, December 23, 2024). All participants provided written informed consent. The study adhered to the Declaration of Helsinki and General Data Protection Regulation (GDPR) Article 13. Audio recordings were transcribed verbatim, pseudonymized, and permanently deleted after transcription verification.

Consent for Publication

Not applicable. No individual participant data that could identify participants are presented.

Competing Interests

The authors declare that they have no competing interests.

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Author Contribution

G.K. conceptualised the study, developed the interview guide, recruited participants, conducted all data collection (semi-structured in-depth interviews), led primary data analysis, including initial coding and theme development, coordinated bilingual transcript translation, performed member checking, maintained the audit trail, and wrote the original draft manuscript. G.K. also revised the manuscript in response to reviewer feedback and prepared the final version for submission. B.M. contributed to data analysis by independently coding the first four transcripts and resolving discrepancies in consensus meetings with G.K. V.R.L. supervised study design, data analysis, and interpretation, contributed to bilingual translation cross-checking, and critically reviewed and edited the manuscript. F.N. provided methodological guidance, contributed to bilingual translation cross-checking, and critically reviewed and edited the manuscript. J.W. supervised the study within the academic host institution, provided methodological and disciplinary guidance on the midwifery education context, and critically reviewed the manuscript. C.F. contributed to methodological guidance and critically reviewed the manuscript. All authors read and approved the final manuscript.

Data Availability

Anonymised data can be requested from the corresponding author for reasonable inquiries by submitting a written request specifying your research purpose and data requirements. The

corresponding author will review requests in accordance with ethics guidelines and respond with further instructions if access is granted.

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