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Review

The Mentorship Paradox in Dental Education: Deep Understanding for a Better Professional Identity Formation—A Narrative Review

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Abstract

Background/Objectives: Mentorship is widely recognized as essential to professional identity formation, clinical competency, and faculty pipeline development in dental education. Despite this consensus, the conditions of modern academic dentistry—faculty burnout, role multiplicity, and escalating clinical production demands—have made sustained mentorship increasingly difficult to deliver. This review proposes a "Mentorship Paradox" as a conceptual framework connecting these conditions, differentiates mentorship from coaching as distinct developmental interventions, and examines the structural and methodological gaps in the literature that bear on this framework. **Methods**: This narrative review is based on a structured, documented search of PubMed/MEDLINE and ERIC (search date 19 September 2026) for peer-reviewed literature published 2005–2026, combining mentorship/coaching/advising terms with dental-, health-profession-, and higher-education terms. Records were deduplicated and screened against defined eligibility criteria by a single reviewer, and the authors then selected the sources used in the synthesis. No protocol was registered, and no formal risk-of-bias assessment or structured data extraction was performed. **Results:** Database searching identified 1404 records (PubMed $n = 1329$; ERIC $n = 75$); after removing 21 records outside the date range and 20 duplicates, 1363 records were screened by title and abstract, of which 792 were excluded and 571 were retained for abstract-level assessment, leaving 136 dental-education-specific records; the authors drew on this pool, together with background and adjacent-field sources, to select the 59 references cited in the narrative synthesis. Drawing on the literature identified to date, this review organizes existing findings around a proposed three-stage cycle—faculty emotional depletion, mentee pipeline deterrence, and vacancy solidification—that individual cross-sectional studies document in fragments but that has not yet been tested as a connected, longitudinal phenomenon. Four specific gaps are named: the absence of a dose–response metric defining the faculty-to-student ratio at which mentorship becomes difficult to sustain (the Dose–Response problem); the failure of workload models to account for the affective labor mentorship demands (the Invisible Load problem); the scarcity of longitudinal outcome studies identified in this search (the Longitudinal Void); and the field's reliance on satisfaction surveys that may measure comfort rather than developmental impact (the Satisfaction Trap). **Conclusions:** Dental schools cannot resolve the Mentorship Paradox by exhorting overburdened faculty to mentor more. Resolution requires institutional frameworks that

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treat mentor capacity as a finite, measurable resource alongside a shift toward longitudinal, outcome-validated research designs capable of testing whether mentorship in dental education produces the professional and academic outcomes the field assumes it does.

Keywords: academic dentistry; clinical training; coaching; dental education; dental faculty shortage; faculty burnout; higher education; mentorship; professional identity formation; student success workforce pipeline

1. Introduction

The landscape of dental education is currently navigating a period of profound transition, characterized by increasing clinical complexity, a diversifying student body, and an urgent focus on mental health. Central to this transition is the role of mentorship—a relationship traditionally viewed as the cornerstone of professional development in the health sciences. However, this review identifies a potential "Mentorship Paradox": while considerable literature supports mentorship as a contributor to clinical competency, psychological resilience, and professional identity, the structural realities of modern academic dentistry—marked by faculty burnout and clinical production pressures—may render such relationships difficult to sustain.

This narrative review examines the multifaceted nature of mentorship, beginning with its conceptual roots in general academia before narrowing the focus to its unique application within the dental clinical environment. It differentiates mentorship from the related but distinct concept of coaching, arguing that the conflation of these two interventions in the existing literature has obscured a critical developmental gap: dental faculty under production pressure default to coaching not by choice, but as a survival mechanism. The review then documents structural and methodological gaps in the literature that have prevented this dynamic from being examined as a connected phenomenon. Four specific gaps are identified: the absence of a "tipping point" metric for when clinical overload forecloses mentorship (the Dose–Response problem); the institutional invisibility of the affective labor mentorship requires (the Invisible Load problem); the scarcity of longitudinal outcome studies identified in this review's search (the Longitudinal Void); and the field's reliance on satisfaction surveys that may measure comfort rather than developmental impact (the Satisfaction Trap). Together, these gaps are proposed here as components of a self-perpetuating cycle in which faculty burnout may erode mentorship capacity, visible burnout may deter students from academic careers, and the resulting vacancy crisis may deepen the burden on the faculty who remain—a conceptual model whose evidentiary limits are discussed in Sections 9 and 10. Ultimately, this review argues that for mentorship to remain a viable tool in dental education, institutional frameworks must be restructured to treat the mentor's capacity as a finite and measurable resource—one that is currently being consumed faster than it can be replenished.

2. Materials and Methods

This is a narrative review informed by a systematic approach to literature searching. The guiding question was: what does the dental, health-profession, and higher-education literature report about the conditions that support or constrain sustained mentorship in dental education? The search was structured and documented. No protocol was registered or prepared in advance, screening was performed by a single reviewer, and no formal risk-of-bias assessment or structured data extraction was undertaken (see Section 10).

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Information sources and search strategy: PubMed/MEDLINE and ERIC were searched on 19 September 2026 for peer-reviewed literature published between 2005 and 2026. Two complementary searches were run in each database. A dental-specific search combined (mentor* OR coaching OR "professional identity formation") with ("dental education" OR "dental school" OR "dental faculty" OR "dental student*" OR dentistry). An adjacent-field search combined (mentor* OR coaching) with ("health professions education" OR "medical education" OR "nursing education"), further narrowed with (burnout OR "faculty workload" OR "professional identity" OR satisfaction OR longitudinal) to keep the adjacent-field yield proportionate to this review's scope. This combination of searches identified 1329 PubMed records (415 dental-specific; 914 adjacent-field) and 75 ERIC records (23 dental-specific; 52 adjacent-field), for 1404 records identified in total. PubMed/MEDLINE and ERIC were chosen as the principal biomedical and education databases; no additional databases were searched, which is acknowledged as a limitation in Section 10.

Eligibility criteria: Records were eligible if they substantively addressed mentorship, coaching, or advising—or their relationship to professional identity formation, burnout, workload, satisfaction, or longitudinal career outcomes—within dental education, or within health professions, medical, nursing, or higher education more broadly. Records in which mentorship/coaching was only incidental, records addressing an unrelated clinical or technical topic, and records outside the 2005–2026 publication window were excluded.

Selection process: Records identified from PubMed and ERIC were deduplicated by unique identifier (PMID for PubMed; OID for ERIC) and, across databases, by normalized title; this removed 20 duplicate records. A further 21 records outside the 2005–2026 date range were removed prior to screening. The remaining 1363 records were screened by title and abstract against the eligibility criteria above by a single reviewer; no second reviewer verified the screening, and because only one reviewer was involved, no procedure for resolving disagreements was needed or applied. A total of 792 records were excluded and 571 were retained for further assessment. Eligibility of these 571 records was judged at the abstract level rather than from systematically retrieved full texts: 32 were excluded as secondary literature (reviews, meta-analyses, or protocols), 6 as opinion/commentary with no original data, and 397 as addressing mentorship or coaching in adjacent health-profession fields rather than dentistry specifically, leaving 136 dental-education-specific records. Because this is a narrative review, these 136 records served as a pool of sources rather than a fixed set of "included studies": the authors selected, by judgment, the sources cited under each theme. The 59 references cited in this review comprise dental-education studies from this pool together with background and adjacent-field sources cited for conceptual context (for example, higher-education and nursing literature, graduate medical education studies, books, and institutional reports). Not all 136 pool records are individually cited, and no claim is made that the cited sources exhaust the relevant literature. No protocol was registered or made publicly available.

Synthesis approach: Sources were synthesized narratively and thematically rather than quantitatively. A meta-analysis was not appropriate because the cited literature is heterogeneous in design (qualitative, quantitative cross-sectional, descriptive, and conceptual work), setting, and outcome measures. Sources were grouped by theme, as reflected in the structure of Sections 3–8 (conceptual definitions of mentorship, measures of success, mentorship in higher education and in dental education, faculty burnout and workload, and methodological gaps), and findings were described and compared within each theme without weighting by study quality. Mentorship, coaching, advising, professional identity formation, burnout, workload, satisfaction, and career outcomes were the organizing topics of the search and the synthesis, not pre-specified outcomes. Data were not extracted into a structured form, no study-characteristics table was produced, and neither risk of bias nor

certainty of evidence was formally assessed; the authors read each source and summarized its relevant findings, and the Limitations section (Section 10) discusses the consequences of these choices.

3. Mentorship Definition & Conceptual Background in Academia

Mentorship has become an increasing component of higher education as institutions seek to support student development and success, academic retention, and professional preparation. In academic contexts, mentorship generally refers to a developmental relationship in which a more experienced individual provides guidance and knowledge to a less experienced mentee. These relationships may occur formally through institutional mentorship programs or informally through professional and academic interactions. Mentorship has been widely adopted across disciplines because it provides students with individualized academic guidance while also fostering psychosocial and professional growth [1,2].

Despite its widespread implementation, mentorship lacks a single universally accepted definition in the academic literature. Nuis et al. [3] conducted a systematic review of 106 studies examining mentoring in higher education and found substantial variation in how mentoring relationships were conceptualized. Some studies emphasized psychosocial and emotional support, whereas others focused on career development, academic guidance, or skill acquisition. The review also highlighted the lack of standardized metrics and operational definitions, which complicates comparisons across programs and disciplines. This inconsistency underscores the importance of clarifying the meaning of mentorship in a given context and provides a framework for evaluating outcomes in both general higher education and professional training programs. The authors concluded that the absence of conceptual clarity has led to inconsistent measurements of mentorship outcomes and difficulties comparing studies across contexts. Nevertheless, many definitions converge on the idea that mentorship is a developmental relationship in which a more experienced mentor provides academic, emotional, career, and psychosocial support to promote student growth and success.

Within higher education, mentoring relationships often serve multiple functions that extend beyond traditional instruction. Prior literature identifies several key mentoring functions, including providing emotional and psychological support, assisting mentees with academic and career goal setting, offering discipline-specific knowledge, and modeling professional behaviors within a field [1]. Empirical work further suggests that mentorship can influence both academic and psychosocial outcomes, particularly for students from historically underrepresented backgrounds; for example, appraisal and affirmational support from mentors has been linked to higher self-worth and reduced psychological distress among college students [4]. These functions highlight that mentorship operates as a multidimensional relationship rather than a single instructional activity. As a result, mentorship programs in universities may take several forms, including faculty–student mentorship, peer mentoring initiatives, and professional mentorship involving practitioners outside the academic institution.

Mentorship relationships are also understood to be mutually beneficial for both mentors and mentees. While mentees receive guidance, encouragement, and professional advice, mentors may simultaneously develop leadership skills, expand their professional networks, and gain personal satisfaction from supporting the development of others. Therefore, effective mentoring relationships depend on reciprocity, trust, and clearly aligned expectations between both participants [5]. To facilitate this alignment, many higher education mentoring programs intentionally match mentors and mentees based on shared interests, professional goals, or areas of expertise, with the aim of increasing relational quality and program effectiveness [2].

Taken together, the literature suggests that mentorship in academia is best understood as a complex and multifaceted developmental relationship rather than a single narrowly defined activity. Although definitions vary across studies, most conceptualizations emphasize the importance of guidance, psychosocial support, and professional development within mentor–mentee relationships. This conceptual foundation provides a useful framework for examining how mentorship functions within specific professional training environments, including healthcare and dental education, where mentoring may shape academic performance, clinical skill development, professional identity formation, and student well-being. Several recent accounts reinforce this conceptualization, describing mentoring relationships in dentistry and oral health care as varying by context, crisis conditions, and specialty [6–8].

4. Measures of Success in Academia

Much of the existing literature suggests that "success" is not a uniform metric. It is a fragmented concept viewed through two completely distinct lenses: the student standpoint and the institutional standpoint.

4.1. Success from the Student Standpoint

From the student perspective, success is defined by comprehensive professional enablement, pedagogical clarity, and resource accessibility. However, defining student success within a high-stakes clinical discipline like dentistry requires looking beyond a single dimension. For the dental student, success must be measured across multiple milestones: achieving competitive scores on board exams, the rapid and measurable refinement of clinical hand skills, navigating the curriculum efficiently to achieve faster graduation, and minimizing long-term financial debt. While traditional metrics often isolate these quantitative markers, modern dental students define holistic success as the synthesis of these skills into long-term career readiness and independent practice [9,10].

Generation Z students navigate a unique educational dichotomy; they explicitly prefer utilizing advanced digital advisory tools for routine data retrieval and institutional logistics, yet they still deeply value traditional learning methods when seeking personalized guidance, clinical mentorship, and professional identity development [9,10]. This dynamic requires mentors to operate not merely as mechanical signposts for graduation requirements, but as active educators who facilitate "integrative learning." Under this model, success is achieved when the advisor assists the student in synthesizing isolated classroom and clinical experiences into a cohesive, meaningful whole, thereby cultivating the critical thinking and cognitive autonomy necessary for independent practice [9]. According to Folsom et al. [10] in The New Advisor Guidebook: Mastering the Art of Academic Advising, managing this demographic shift requires intentional advisor literacy in student development theories, ensuring that the deployment of digital tools does not replace the relational micro-skills necessary to guide Generation Z students through complex professional transitions.

Furthermore, students measure the efficacy of an advisory relationship by its capacity to provide concrete, practical pathways into the professional marketplace. Key findings in current higher education literature indicate that effective academic advising and mentoring actively enhance entrepreneurial awareness and provide students with essential logistical information regarding their field. However, current student perspectives highlight a persistent, documented gap in connecting students with practical, real-world resources, such as business planning matrices and funding support channels. For the student learner, a successful advisory relationship must actively bridge this systemic deficit by implementing the comprehensive advisory strategies established in contemporary training frameworks [10]. The mentor must serve as a direct avenue for cross-disciplinary networking and tangible professional assets, transforming academic guidance from a passive, transactional checkpoint

into an active mechanism for career enablement and entrepreneurial readiness. Consistent with this student-centered framing, several additional studies describe dental and pre-health students identifying peer support, clinical mentoring, and career-pipeline mentoring as central to their sense of success [11–14].

4.2. Success from the Institutional Standpoint

For the university or school administration, success is measured through the lenses of structural viability, cohort progression, and systemic equity. Crucially, institutional success is vital to the institution's overarching mission to serve as a center for scholarship, learning, and creative endeavor [9]. At the operational level, administrative bodies evaluate the efficacy of an academic advising program by its direct, quantifiable contribution to student persistence, lower attrition rates, and steady graduation velocity [9]. From this perspective, high-quality advising and mentoring are not viewed merely as an auxiliary student service but as a primary strategic mechanism for maintaining institutional enrollment metrics and fiscal predictability. To secure these outcomes, modern administration requires a shift away from informal, "accidental" guidance models in favor of standardized, evidence-based practices. Consequently, it is an absolute requirement that advisors or mentors need formal training; an institution's advising success is heavily measured by whether its faculty have mastered and implemented the structured, evidence-based delivery strategies outlined by Drake et al. [15].

Administrative metrics assess this mastery across three essential training domains established in core advisory literature: the conceptual, the informational, and the relational [15]. The conceptual domain involves training to ensure that faculty view mentoring as a distinct form of teaching, moving beyond mechanical course-scheduling to implement advanced frameworks like Developmental Advising for holistic growth and Appreciative Advising to help students uncover professional strengths. The informational domain is when faculty achieve complete literacy regarding complex curricular requirements, legal boundaries such as student privacy mandates, clinical entrepreneurship, and postgraduate residency prerequisites [15]. Finally, the relational domain cultivates the high emotional intelligence, active listening skills, and cultural competence required to navigate diverse student backgrounds and build immediate psychological safety within restricted clinical and academic timeframes [15]. By mandating systematic training, the institution maintains its educational quality and ensures that mentors can effectively guide students through complex academic pathways.

Beyond routine operational metrics, contemporary institutional success demands a comprehensive framework that incorporates industry integration and cultural equity. Administrative success is defined by an institution's ability to actively expand mentoring programs, enhance collaborative networks between universities and external industries, and leverage modern technology to improve overall advisory services. Furthermore, forward-thinking institutions measure success by their capacity to implement gender-influenced and culturally integrated advisory practices. These specialized frameworks are vital for supporting underrepresented student groups and ensuring equitable access as students navigate competitive, high-stakes pathways, such as clinical entrepreneurship and research residencies [16]. By aligning technological efficiency with culturally inclusive support, the institution ultimately secures its long-term viability and fulfills its broader societal mandate. From the institutional perspective, additional dental-education studies similarly frame mentoring and supervision as levers for faculty development, clinical service delivery, and student recruitment and retention [17–20].

5. Mentorship in Higher Education

In the broader landscape of higher education, mentorship is recognized as a critical determinant of student persistence and long-term academic success. Empirical research consistently demonstrates that students who engage in formal or informal mentoring relationships exhibit significantly higher-Grade Point Averages (GPAs) and retention rates compared to their non-mentored peers. For example, longitudinal data suggest that "at-risk" undergraduate Mechanical Engineering students at a Caribbean university participating in proactive mentoring programs can see GPA improvements of up to 35%, as the relationship helps them navigate the transition to the rigorous academic demands of university life [21]. By providing a structured framework for goal setting and academic accountability, mentorship serves as a bridge between institutional resources and individual achievement, ensuring that students remain on track toward degree completion. Recent systematic reviews further confirm that formal mentoring programs specifically targeting first-year students are among the most effective interventions for reducing early departure rates, as they foster the "academic involvement" necessary for institutional commitment [22].

Beyond quantitative academic metrics, the primary value of mentorship lies in its psychosocial and developmental impact, particularly for students from historically underrepresented backgrounds. Mentoring provides students with a vital sense of "belongingness"—a psychological state where the student feels personally accepted, respected, and supported by the campus community. This is especially crucial for first-generation students, for whom a mentor acts as a cultural navigator, breaking down institutional barriers and providing the "social capital" necessary to access professional networks and postgraduate opportunities [23,24]. By validating a student's academic identity, mentors help mitigate the effects of "imposter syndrome" and psychological distress, fostering a resilient mindset that is vital for navigating the complexities of higher education. This "integral mentoring" approach moves beyond mere content delivery to address the holistic well-being of the student, which has been linked to increased intrapersonal competency and long-term flourishing [25].

Finally, contemporary literature highlights a shift toward reciprocal and peer-based mentoring models as effective alternatives to traditional top-down hierarchies. Unlike the traditional faculty-student dyad, peer mentoring utilizes "near-peer" relationships where senior students provide junior students with both emotional support and practical academic advice. This model is particularly effective for reducing academic anxiety and preventing student dropout, as mentees often feel more comfortable disclosing vulnerabilities and clinical fears to a peer who has recently navigated similar challenges [26]. As institutions move toward a holistic "mentoring culture," these peer-driven initiatives are increasingly viewed as indispensable tools for promoting student engagement, self-regulated learning, and overall well-being [27].

Dental-specific evidence supports the reciprocal nature of these peer and near-peer models. In the Penntorship program, dental students at University of Pennsylvania, School of Dental Medicine, mentored local high school students. They reported gains in communication skills and a stronger sense of community connection over the course of the relationship, demonstrating that mentoring benefits often flow in both directions rather than from mentor to mentee alone [28]. This reciprocal, peer-oriented pattern is echoed elsewhere in the dental higher-education literature, including near-peer mentoring initiatives, student-perceived pairing benefits, and broader discussions of mentoring's place in academic career structures [29–31].

6. Differentiating Mentorship from Coaching in Dentistry

A critical prerequisite for evaluating the "Mentorship Paradox" is the clear conceptual delineation between mentorship and coaching. While these terms are frequently used

interchangeably in dental curricula, the academic literature establishes them as distinct developmental interventions with diverging goals, durations, and relational dynamics. Within the context of professional training, failing to distinguish between the two can lead to "role confusion" for faculty and "expectational misalignment" for students, ultimately diluting the effectiveness of the developmental relationship [5].

In the dental clinical environment, coaching is primarily task-oriented and performance-driven. It is characterized by a "short-term" focus on the immediate acquisition of specific technical skills or the remediation of clinical deficiencies, such as mastering the ergonomics of a Class II preparation or refining a crown margin. A coach functions as a "subject matter expert" who provides direct, corrective feedback to improve a mentee's proficiency in a pre-defined area. This relationship is typically hierarchical and transactional; once the specific skill is mastered or the competency benchmark is met, the coaching intervention often concludes [5]. While coaching is vital for student success in dental school—ensuring patient safety and technical accuracy—it does not inherently address the student's broader professional trajectory or holistic well-being. Empirical reviews highlight that coaching is an external intervention designed to reach a specific metric, whereas mentoring is an internal developmental process [3].

According to Brooks and Caton-Hughes [32], coaching in dental education relies heavily on a structured, instruction-led paradigm. In this mode, the educator acts primarily as an assessor and instructor, utilizing directive communication styles to correct immediate clinical vulnerabilities. This methodology is heavily anchored in performative metrics, where the primary objective is the fast-paced delivery of predictable, safe clinical throughput. Brooks and Caton-Hughes [32] emphasize that while this style of coaching is mandatory for foundational skill acquisition at the chairside, it inherently operates on a deficit model—focusing almost exclusively on fixing what the student is doing wrong in that exact diagnostic moment. Because the dialogue is dominated by the instructor's expertise, coaching lacks the collaborative space needed for the student to internalize complex problem-solving frameworks independently.

Furthermore, Brooks and Caton-Hughes [32] highlight that coaching functions within a distinct power dynamic that can inadvertently stunt a student's long-term autonomy if left unmitigated. Because the clinical coach is tasked with immediate evaluation and quality control, the conversation is necessarily bounded by the structures of the procedural clock. This time-bound pressure minimizes the opportunity for broader metacognitive development. The authors note that when an educational environment becomes oversaturated with coaching at the expense of mentoring, it creates a rigid dependency framework. Students learn to rely passively on external validation and immediate faculty intervention for every marginal adjustment, rather than developing the internal, self-regulated monitoring systems required for isolated general practice.

In contrast, despite its various meanings, mentorship is viewed more as a relationship-oriented, long-term developmental journey. While it encompasses technical guidance, its primary aim is the holistic growth of the mentee, including their professional identity formation and psychosocial resilience. Unlike the task-specific nature of coaching, mentorship is an "open-ended" partnership rooted in mutual trust and reciprocity [2]. A mentor serves as a "guide" rather than just a "trainer" or "coach," helping the student navigate the ethical complexities of clinical practice and the emotional toll of the profession. Mentorship is the primary vehicle through which a student internalizes the values of the dental profession—moving beyond simply doing the work of a dentist to becoming a member of the healthcare community. Furthermore, mentorship often involves "sponsorship," where the mentor uses their own social capital to open doors for the mentee's future career—a dimension entirely absents from traditional coaching models [23].

The intersection of these two concepts is where the most effective dental education occurs. However, a significant gap in the literature suggests a "coaching trap": because dental faculty are under extreme clinical production pressure, they are often forced to retreat into a coaching-only mode. In this scenario, the faculty member provides the technical correction needed to finish the procedure but lacks the "protected time" to engage in the reflective dialogue that constitutes true mentorship [32]. This shift creates a significant developmental risk: students may become technically proficient through coaching but remain developmentally stunted in their professional identity and ethical leadership due to a lack of true mentorship.

The terminological conflation is not merely theoretical. Leibow et al. [33] describe a hands-on faculty intervention designed to improve clinical preparedness in endodontics under the heading of "mentorship," despite its task-specific, skill-acquisition focus more closely resembling the "coaching" model described above. This overlap illustrates the very "role confusion" this section identifies: without a shared operational definition, it remains difficult to determine whether published "mentorship" interventions are building durable professional identity or simply delivering well-intentioned "coaching" under a different, misleading name. Several dentistry-specific sources draw a similar distinction between mentoring and coaching, or examine coaching-style interventions directly, reinforcing that the two are related but conceptually separable activities [34–37]. Table 1 summarizes the distinctions between coaching and mentorship across seven dimensions relevant to dental education.

Table 1. Coaching and mentorship compared across seven dimensions relevant to dental education (D1–D4 = first through fourth year of dental school). Statements in the "Dental Education Implication" column represent the authors' proposed conceptual implications rather than directly demonstrated empirical findings, unless a specific citation is provided. Sources: Refs. [2,3,5,32].

Dimension	Coaching	Mentorship	Dental Education Implication
Time Horizon	Short-term; ends when skill is acquired or competency is met	Long-term; an open-ended developmental relationship	Students who receive only coaching lack sustained professional guidance across the full D1–D4 trajectory
Primary Goal	Technical skill acquisition or remediation of clinical deficiency	Holistic professional identity formation (PIF) and psychosocial resilience	Coaching is oriented toward producing technically competent graduates; mentorship is oriented toward broader academic and professional development, including future educators and academicians—a conceptual distinction rather than a demonstrated causal outcome
Relational Dynamic	Hierarchical and transactional; faculty as assessor and expert	Reciprocal; built on mutual trust, shared goals, and sponsorship	Production pressure forces faculty into the coaching posture even when they intend to mentor
Communication Style	Directive; corrective feedback targeting immediate clinical error	Reflective; "Thinking Space" that surfaces metacognitive awareness	The procedural clock forecloses reflective dialogue—coaching fills the void by default
Scope	Narrow; targets a pre-defined skill or procedure	Broad; encompasses career navigation, ethical reasoning, and well-being	Coaching alone cannot address the psychosocial stressors documented across dental school cohorts

Table 1. *Cont.*

Dimension	Coaching	Mentorship	Dental Education Implication
Autonomy Effect	Risk of dependency culture if supplemented; student awaits external validation	Builds self-regulated learning; prepares for isolated general practice	Students who receive predominantly coaching rather than mentorship are hypothesized to be at greater risk of difficulty in unsupervised private practice without internalized decision-making frameworks; this has not been directly tested in dental education
Emotional Labor Required	Low; expertise-based, not affectively intensive	High; demands emotional intelligence, active listening, and trust cultivation over time	The "Invisible Load"—affective labor is the resource most depleted by burnout, yet no workload model accounts for it
Measures in Literature	Clinical competency scores, procedure completion rates	Predominantly satisfaction surveys—subject to the Satisfaction Trap	Neither coaching nor mentorship has a validated longitudinal outcome instrument in dental education

7. Mentorship in Dental Education

Mentorship within dental education is distinct from general academic mentoring due to the high-stakes, clinical nature of the discipline. In this context, the relationship often functions through a "master–apprentice" model, where faculty members provide real-time, chairside guidance that directly impacts patient care and student clinical competency. Unlike general higher education, where mentoring might focus on extracurricular or broad career advice, dental mentorship is an essential vehicle for professional identity formation. This is the transformative process by which a student internalizes the ethics, values, and responsibilities of a healthcare provider [2].

Brooks and Caton-Hughes [32] argue that for mentorship to be effective within the dental clinic, the mentor must provide what they term a "Thinking Space." In the high-pressure environment of dental school, students are often forced into a "doing" mindset, where the focus is entirely on procedural completion and technical accuracy. A mentor's primary role is to disrupt this cycle by encouraging "reflective practice"—allowing the student to step back from the patient chair and analyze their clinical decision-making. However, the authors note that creating this space is increasingly difficult in modern dentistry, where the physical constraints of the dental profession, with the daily clinical challenges, often prioritize clinical throughput over developmental dialogue and guidance.

Additionally, Brooks and Caton-Hughes emphasize that mentorship should not be viewed as a remedial tool for struggling students, but as a longitudinal continuum that extends from dental school training into professional practice. They describe the "Mentoring Cycle," which moves from establishing rapport to setting clear, student-led goals. This shift toward a "student-led" model is crucial in dental education because it fosters autonomy. When faculty members default to a directive coaching style, they may inadvertently create a "dependency culture" where the student relies on the instructor for every clinical judgment. True mentorship, as defined by Brooks and Caton-Hughes, aims to transition the student toward "self-regulated learning," preparing them for the isolated environment of general practice.

In order for clinical mentorship to be successful, Brook and Caton-Hughes highlight the importance of Emotional Intelligence (EI) from the faculty member (mentor). While coaching requires technical expertise, mentoring requires the ability to listen, build trust, and manage the "affective," or emotional, domain of learning. Dental school is a period of intense

psychosocial stress; the authors argue that a mentor who ignores the emotional state of the student—focusing only on the quality of a prosthetic tooth preparation or an impression—is failing in their developmental role. The necessity of EI in mentorship is further supported by Victoroff and Hogan [38], whose research identifies "interpersonal qualities" as the most critical characteristic of effective clinical role models. They found that the most impactful mentors demonstrated a "sincere interest" in their students' personal and professional trajectory. By integrating EI into clinical teaching, mentors can help students develop the "soft skills" and personality resilience necessary to handle the inevitable stressors of a clinical career.

A documented structural crisis regarding faculty recruitment and retention currently hinders the implementation of robust mentorship programs in dental education. According to the American Dental Education Association (ADEA) Annual Faculty Vacancy Survey, dental schools continue to face a significant number of unfilled positions, with vacancies often exceeding 600 full-time equivalent positions nationwide [39]. These vacancies are primarily driven by the widening income gap between private practice and academia, as well as the increasing clinical production demands placed on existing faculty. This shortage creates a "mentorship desert", where the remaining educators are stretched thin, resulting in a low faculty-to-student ratio (i.e., fewer faculty available per student).

The consequences of this "desert" extend beyond clinical training and into the intellectual pipeline of the profession. Research by Mekled et al. [40] demonstrates that the availability of a dedicated mentor is the primary predictor of a dental student's interest in scholarly activity and their eventual pursuit of an academic career. Their study indicates that students who lack consistent mentorship are significantly less likely to engage in research or participate in the extracurricular academic projects that define a scholarly professional identity. Consequently, the current vacancy crisis identified by the ADEA creates a self-perpetuating cycle: the lack of faculty mentors prevents students from entering academia, which further exacerbates the faculty shortage and deepens the mentorship gap for future generations [39,40].

Beyond vacancy data, a small but growing body of research has begun to document burnout directly among dental faculty, rather than inferring it solely from unfilled positions. Using the Maslach Burnout Inventory, Henry et al. [41] found meaningful levels of emotional exhaustion among early-career U.S. dental school faculty, linking workload and work–life conflict directly to burnout risk. International survey data corroborate this pattern: Bhatia et al. [42] report that dental educators across multiple European countries describe time pressure, productivity demands, and difficulty accessing well-being support as primary drivers of occupational stress. Ahmad et al. [43] suggested a structural explanation for this strain: because dental academics are simultaneously expected to function as clinicians, researchers, administrators and educators, this role multiplicity itself produces identity conflict and contributes to attrition from the academic workforce. Together, this literature establishes that the burnout this review treats as the engine of the "Mentorship Paradox" is documented directly among practicing dental faculty, not simply inferred from the ADEA's vacancy figures.

This pipeline concern is not unique to general dentistry. Young et al. [44] demonstrate that mentorship shapes career outcomes at every stage of the academic oral and maxillofacial surgeon–scientist pathway, suggesting that the erosion of mentorship documented above extends into specialized academic tracks as well. A parallel pattern emerges in research mentorship specifically: Nelson et al. [45] found that disruptions to dental student research mentorship during the COVID-19 pandemic directly undermined students' scholarly engagement, reinforcing Mekled et al.'s [40] findings that consistent mentor availability is the primary predictor of interest in an academic or research career. This body of concern is

echoed by additional dental-education sources describing strategies for building a mentoring culture, faculty recruitment and retention pressures, and the erosion of the clinical teacher–scholar role [46–49].

8. Gaps in the Literature

To understand the current gaps in the literature, one must view the "Mentorship Paradox" as a self-perpetuating cycle. It is not a series of isolated problems, but a downward spiral where institutional burnout and the decline of mentorship feed into one another. This vicious loop functions through three distinct stages of decay that the current body of research recognizes individually, but fails to connect as a single, longitudinal phenomenon, as illustrated in Figure 1.

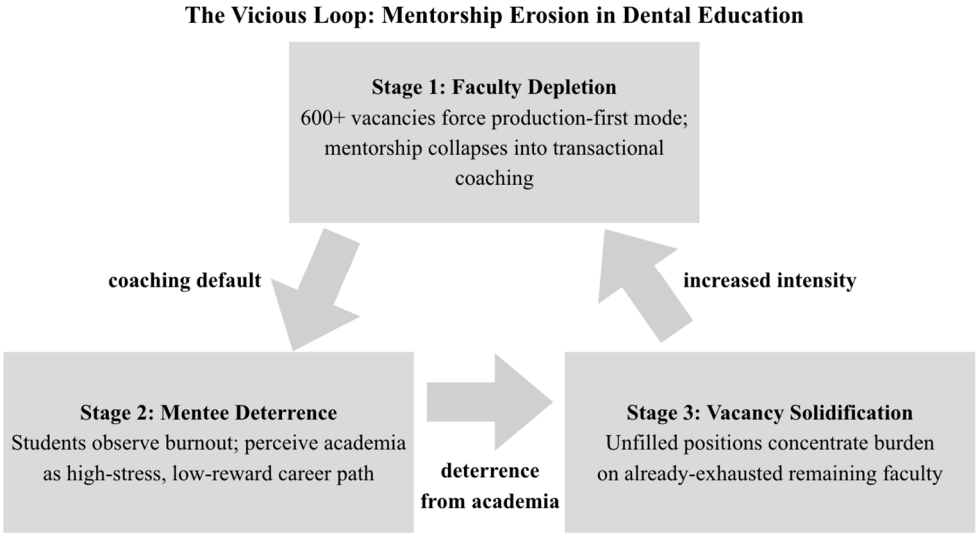

Figure 1. Proposed three-stage cycle of mentorship erosion in dental education (faculty emotional depletion, mentee deterrence, and vacancy solidification), synthesized by the authors from cross-sectional evidence; the proposed sequence itself has not been tested longitudinally (see Section 10, Limitations). Sources: Refs. [32,39–41].

The closest related work we identified, Young et al. [44], confirms that mentorship is recognized as essential at every stage of the academic oral and maxillofacial surgeon–scientist pathway, but does not investigate the structural and burnout-related forces that determine whether such mentorship can actually be sustained. This suggests that the gap addressed by this review is not an absence of interest in dental mentorship broadly, but a specific lack of work connecting mentorship erosion to its institutional root causes.

The first stage of this cycle involves the emotional and cognitive labor of faculty. Mentorship is not a passive activity; as Brooks and Caton-Hughes [32] suggest, it requires the intentional creation of a "Thinking Space." This space is built using "emotional currency"—the faculty member's ability to offer empathy, active listening, and reflective patience. However, when a school faces the 600+ vacancies reported by the ADEA [39], the remaining faculty are forced into a "production-first" survival mode. The gap in the literature here is the lack of a "tipping point" metric: at what specific level of clinical volume does a faculty member lose the energy to mentor, effectively forcing them to collapse and default to transactional "coaching" to survive the day?

As faculty retreat into coaching-only mode to conserve energy, the second stage of the cycle begins: the deterrence of the mentee. Mentorship is the primary vehicle for professional identity formation. When students only observe faculty who are rushed or irritable, they experience a form of vicarious burnout. They begin to perceive academic

dentistry not as a prestigious scholarly calling, but as a site of high stress and low fulfillment. This directly fuels the findings of Mekled et al. [40], where students who lack visible, thriving mentors are significantly less likely to consider an academic career. The literature identifies this lack of interest but does not investigate it as a "cultural repulsion" caused by the visible burnout of the current workforce.

The final stage is the structural solidification of the "Mentorship Desert." Because students are deterred from entering the pipeline, the vacancies remain unfilled, and the income gap between private practice and academia becomes even more daunting without a mentor to advocate for the "hidden rewards" of teaching. This places the burden of the 600+ vacancies back onto the shoulders of the original, already-exhausted faculty. This returns the cycle to Stage 1, but with increased intensity. Current research provides cross-sectional snapshots of these stages, but the most critical gap is the longitudinal evidence needed to prove that this feedback loop is the primary driver of the crisis in dental education.

8.1. Structural Gaps: The "Dose–Response" and the Logistical Threshold Problems

The first major structural gap in the literature is the absence of a "Dose–Response" metric for clinical mentorship. In medicine, "dose–response" typically refers to the relationship between the amount of a treatment and its effect on a patient. In dental education, there is a lack of an equivalent understanding: at what specific student-to-faculty ratio does mentorship cease to be effective and revert to coaching?

While the ADEA [39] Faculty Vacancy Survey provides the raw data—identifying over 600 unfilled positions nationwide—the literature fails to map these vacancies to student outcomes. As vacancies increase, the "dose" of mentorship per student decreases. However, there is a lack of empirical research defining the "Logistical Threshold"—the maximum number of students a single faculty member can oversee while still maintaining the "Thinking Space" and Emotional Intelligence necessary for mentorship.

This dose–response relationship has already been empirically tested in an adjacent clinical training field—nursing—yet no equivalent study exists in dental education. Gusar et al. [50] used a validated Mentoring Support Quality Evaluation Questionnaire to compare mentoring support quality under individual versus group mentoring models during nursing clinical training. Their quasi-experimental design found that students in individual mentoring relationships rated overall mentoring support quality significantly higher than those in group configurations ($p = 0.021$), with statistically meaningful differences emerging across subscales measuring communication quality, professional guidance, and psychosocial support. This finding is not merely analogous to the dental context—it is a direct empirical demonstration that the "dose" of individualized mentoring attention is a measurable determinant of perceived mentoring quality in a high-stakes, procedurally intensive clinical environment. The implication for dental education is evident: if nursing has operationalized this relationship and found it significant, the absence of an equivalent study in dental schools is not a minor omission but a foundational methodological gap. Without a dental-specific "Logistical Threshold" study, administrators cannot make evidence-based decisions about safe faculty-to-student ratios, and the 600+ vacancies reported by the ADEA [39] remain an abstract number rather than a quantified threat to mentorship quality.

This gap is further compounded by the "Invisible Load" problem. The existing literature on faculty workload in dental education tends to quantify burden in terms of credit hours taught, clinical production units completed, or administrative committees served [43]. What it systematically fails to capture is the affective and relational labor that genuine mentorship demands—the time spent in reflective dialogue, in processing a student's psychosocial distress, or in the deliberate cultivation of trust over successive clinical

encounters. Brooks and Caton-Hughes [32] identify emotional currency as the essential raw material of mentorship, yet no workload model in the dental education literature formally accounts for its expenditure. As a result, institutional scheduling systems treat a faculty member who has spent forty minutes guiding a student through a crisis of professional identity as indistinguishable from one who spent those same forty minutes correcting a crown margin. The former has made a significant withdrawal from their emotional reserve; the existing literature has no instrument to measure that withdrawal, no threshold at which it triggers concern, and no intervention protocol for when it is depleted. Related dental and orthodontic sources gesture toward this same capacity problem without resolving it, discussing mentoring workload and time-availability constraints in general terms rather than as a measurable ratio [51,52].

8.2. Methodological Gaps: The Longitudinal Void and the Satisfaction Trap

Beyond the structural questions of ratio and workload, the literature on dental mentorship contains two deeply intertwined methodological failures that together prevent the field from building a durable evidence base. These are the Longitudinal Void—the near-total absence of long-term, outcome-tracking studies—and the Satisfaction Trap—the field's pervasive overreliance on subjective, cross-sectional perception surveys as a proxy for mentorship effectiveness. Individually, each represents a significant gap; in combination, they create research that is rich in description but almost entirely unable to demonstrate causation.

8.2.1. The Longitudinal Void

The most consequential methodological absence in dental mentorship research is the lack of longitudinal studies that follow students from their initial mentoring relationship through graduation, early career practice, and eventual career trajectory. The existing body of research is composed almost entirely of cross-sectional snapshots—surveys administered at a single point in time, capturing how students feel about their mentoring experience during dental school but failing to determine whether that experience produced durable, measurable changes in clinical competency or professional identity. This is not a minor limitation: it fundamentally prevents the field from answering its most important question, which is whether mentorship in dental school actually makes a difference in the kind of professional a student becomes.

This gap is not unique to dentistry. Leong et al. [53] conducted a systematic review of mentoring relationships in health profession education broadly and found that the overwhelming majority of published studies relied on single-time-point data collection—those tracking mentorship outcomes across more than one year—representing a small fraction of the available evidence. The review concluded that without longitudinal data, it is impossible to differentiate between the short-term motivational effects of a positive mentoring relationship and the long-term developmental outcomes that justify the institutional investment mentorship programs require. This finding is directly applicable to dental education, where the consequences of the gap are amplified by the profession's high attrition risk, the documented faculty shortage, and the self-perpetuating pipeline problem identified by Mekled et al. [40]. If the field cannot demonstrate through longitudinal evidence that mentorship converts students into future faculty, it has no empirical basis for demanding that overburdened existing faculty prioritize mentoring activities over clinical production.

The absence of longitudinal data also prevents any meaningful analysis of the Mentorship Paradox as a temporal phenomenon. The vicious loop described in the preceding section is, by definition, a process that unfolds over time—the erosion of mentorship capacity, the deterrence of future faculty candidates, the solidification of the "Mentorship Desert." Cross-sectional studies can document each stage independently, but they cannot

demonstrate the causal sequence that connects them. A longitudinal design tracking both faculty burnout indicators and mentee career intentions over the course of a dental school cohort would be the minimum methodological standard required to test whether the loop this review proposes operates as described. No such study was identified in the literature search reported in Section 2.

8.2.2. The Satisfaction Trap

The second methodological gap is subtler but equally damaging to the integrity of the literature. The dominant instrument in dental mentorship research is the student satisfaction survey—a self-report measure asking mentees to rate the quality, frequency, or perceived helpfulness of their mentoring relationships. While such surveys are logistically convenient and administratively appealing, they function as a systematic proxy for a construct they cannot directly measure actual mentorship quality and its developmental impact.

The core problem is that satisfaction and effectiveness are not equivalent, and in clinical education specifically, they may be inversely related. A student who receives challenging, uncomfortable reflective feedback from a mentor who pushes them toward professional identity formation may rate that relationship less favorably in a satisfaction survey than a student whose mentor is warm but primarily provides technical coaching and procedural reassurance. This pattern is confirmed at scale by Abdelmannan et al. [54], whose scoping review of 94 mentorship studies in Graduate Medical Education (GME) found that evaluation approaches were almost exclusively non-validated and perception-based—only one of the 94 included studies used a psychometrically validated outcome instrument, and zero employed randomized controlled designs. The review concluded that while effectiveness was frequently claimed across the literature, methodological rigor was largely absent, with programs defaulting to self-report surveys assessing perceived gains in confidence, career direction, and satisfaction rather than externally assessed or performance-based outcomes. Dental education reflects this same pattern. This finding suggests that the literature built on satisfaction surveys may be systematically measuring students' comfort with their mentors rather than the developmental potency of the relationship—a distinction the "Mentorship Paradox" framework makes especially consequential.

This methodological limitation is reinforced by a social desirability problem endemic to survey instruments administered within the institutional context. When dental students are asked to evaluate their faculty mentors through a program survey, they are aware that their responses may carry professional consequences. The faculty member being evaluated holds authority over clinical-grade assignments, competency signoffs, and residency recommendation letters. Under these conditions, even anonymized satisfaction surveys are vulnerable to systematic upward bias, producing inflated scores that the institution interprets as program effectiveness. The result is a body of literature that consistently reports high student satisfaction with mentorship programs while simultaneously documenting the structural deterioration—burnout, vacancies, coaching-default behavior—that this review identifies as evidence of a paradox. These two findings are not contradictory if one accepts that satisfaction surveys are measuring something other than mentorship quality; they become deeply problematic, however, if administrators use those satisfaction scores as evidence that existing mentorship programs are functioning well and therefore do not require structural intervention. A small number of dental and biomedical mentoring studies do include longer follow-up windows or self-report satisfaction/stress outcomes, illustrating what such designs could look like even as they remain the exception rather than the rule [55–59].

Taken together, the Longitudinal Void and the Satisfaction Trap describe research that has consistently asked the wrong questions with the wrong instruments over the wrong

timeframe. The field has produced a substantial body of work demonstrating that dental students value mentorship, that they report positive feelings toward mentoring relationships, and that the absence of mentorship is associated with reduced research interest and a lower likelihood of pursuing academic careers [40,45]. What it has not produced is a methodologically rigorous, longitudinally designed, outcome-validated study capable of demonstrating the specific mechanisms through which mentorship shapes professional development—or the specific conditions under which faculty burnout and structural overload cause those mechanisms to fail. Until such research exists, the "Mentorship Paradox" will remain a compelling and well-supported theoretical framework rather than a proven empirical phenomenon. The conclusion that follows argues that resolving this gap is not merely an academic priority but an institutional survival imperative for dental education. Table 2 summarizes the four gaps discussed in this section, contrasting what the existing literature currently addresses with what remains missing.

Table 2. Four gaps in the dental mentorship literature identified by this review, contrasted with what the existing literature currently addresses and what remains missing. Sources: Refs. [39–41,43,50,53,54].

Gap	Type	What the Literature Currently Does	What is Missing	Dental Education Consequence
Dose–Response Problem	Structural	ADEA [39] reports 600+ vacancies; Gusar et al. [50] demonstrate individual mentoring outperforms group mentoring in nursing school	No dental-specific study maps vacancy rates to mentorship quality or defines the faculty-to-student ratio at which mentorship ceases to be possible	Administrators cannot make evidence-based staffing decisions; the vacancy number remains abstract rather than actionable
Invisible Load Problem	Structural	Ahmad et al. [43] document role multiplicity; Henry et al. [41] measure burnout via Maslach Burnout Inventory (MBI)	No workload model in dental education formally accounts for the affective and relational labor that genuine mentorship demands	Scheduling systems treat forty minutes of identity-crisis dialogue identically to forty minutes of crown-margin correction; emotional reserves deplete invisibly
Longitudinal Void	Methodological	Cross-sectional surveys capture student perceptions at a single time point; Leong et al. [53] confirm this pattern holds across health professions education	No study follows a dental cohort from initial mentoring relationship through graduation, career choice, and eventual faculty entry or non-entry	The field cannot demonstrate that mentorship converts students into future faculty—and therefore has no empirical basis for demanding that overburdened faculty prioritize it
Satisfaction Trap	Methodological	Student satisfaction surveys dominate the dental mentorship outcome literature; programs consistently report high satisfaction scores	Abdelmannan et al. [54] show satisfaction does not reliably predict clinical performance; social desirability bias inflates scores when evaluators control grades and residency letters	Institutions interpret high satisfaction as program effectiveness and forgo structural reform—while burnout, vacancies, and coaching-default behavior simultaneously worsen

9. Discussion

The central argument of this review is not that mentorship fails in dental education—the evidence that it is valued and beneficial is consistent across decades of scholarship. Rather, the concern is structural and methodological: a field that depends on mentorship for the professional formation of its future practitioners appears, based on the literature identified through the search reported in Section 2, to be operating under institutional pressures that make sustained mentorship increasingly difficult. The "Mentorship Paradox" is proposed here as a conceptual framework—not an empirically established, self-perpetuating crisis—that connects findings the existing literature has so far documented only in fragments.

This review has attempted that connection. Drawing on evidence from dental education, adjacent clinical training fields, and higher education broadly, it traces a proposed three-stage cycle: the emotional depletion of faculty whose mentorship capacity is strained by production demands and role multiplicity; reduced student interest in academic careers among students who observe that strain; and a vacancy landscape that concentrates further pressure onto the faculty who remain. The individual components of this cycle are each supported by cross-sectional or single-timepoint evidence cited throughout this review; the sequence connecting them, however, has not been tested longitudinally and should be read as the authors' theoretical synthesis rather than a demonstrated causal pathway.

The four gaps identified in Section 8—the Dose–Response problem, the Invisible Load problem, the Longitudinal Void, and the Satisfaction Trap—are not independent limitations of the literature; they may help explain why the proposed cycle has been difficult to detect empirically. When institutional workload models do not account for the affective labor mentorship requires, that labor's depletion is not visible to administrators. When outcome measures rely primarily on satisfaction surveys, which the literature cited in Section 8.2.2 suggests may be vulnerable to social desirability bias, program effectiveness can appear stable even alongside structural strain. And without longitudinal data connecting mentoring experience to later career outcomes, there is limited empirical basis for the institutional claims this review makes about the cycle's self-reinforcing nature—a limitation addressed directly in Section 10.

Several practical implications follow, nonetheless. First, dental schools could consider treating mentors' emotional and relational capacity as a resource worth tracking, rather than an unmeasured byproduct of faculty appointment, by developing workload models that account for affective labor alongside clinical production units and credit hours. Second, mentorship program evaluation could supplement—not necessarily replace—student satisfaction as an outcome metric; Abdelmannan et al.'s [54] scoping review of 94 Graduate Medical Education mentorship studies found that only one used a validated outcome instrument, suggesting room for more rigorous, less exclusively perception-based evaluation designs in dental education as well. Third, dental education may benefit from methodological models already piloted in adjacent fields: Gusar et al.'s [50] quasi-experimental comparison of individual versus group mentoring quality in nursing clinical training offers one template for the kind of dental-specific study this review argues is currently missing.

10. Limitations

This review has several limitations. First, much of the evidence supporting the proposed "Mentorship Paradox" cycle is cross-sectional, associative, or drawn from adjacent fields such as nursing and medical education rather than dentistry directly; the transferability of these findings to dental education specifically has not been empirically tested and should be treated as a hypothesis for future research rather than an established finding. Second, the review is restricted to English-language sources, which may exclude relevant literature published in other languages. Third, because the "Mentorship Paradox", the

Dose–Response problem, and the Invisible Load problem are conceptual constructs proposed by the authors rather than previously validated measures, they should be understood as a framework for empirical testing rather than as demonstrated phenomena. Fourth, title and abstract screening of the 1363 deduplicated records, and the subsequent narrowing of the eligible evidence base to dental-education-specific studies, were each conducted by a single reviewer without independent duplicate verification or a second reviewer to resolve disagreements, which may have introduced selection error or bias in the records retained; eligibility at initial stages was also judged at the abstract level rather than from full texts. Fifth, although professional identity formation is central to this review's framing, most of the evidence cited concerns burnout, workload, satisfaction, and career/vacancy outcomes rather than directly measured professional identity formation; the link between mentorship and professional identity formation specifically should therefore be read as an inference drawn from adjacent outcomes rather than a directly demonstrated finding. Sixth, this is a narrative review informed by a structured search rather than a systematic review: no protocol was registered or prepared in advance, no formal risk-of-bias or methodological-quality appraisal and no assessment of the certainty of evidence were performed, no structured data-extraction or study-characteristics table was produced, and the 59 cited sources were selected by the authors' judgment rather than by pre-specified inclusion rules. The findings should therefore be read as an interpretive synthesis; the review does not claim to have captured all relevant literature or to weigh the evidence by study quality. Seventh, the search covered only two databases (PubMed/MEDLINE and ERIC), and no databases covering behavioral sciences or other education literature were searched.

11. Future Perspectives

This review highlights two priorities for future dental-specific research. The first is a longitudinal cohort study tracking dental students from their first year through at least five years of post-graduation practice, capturing both the nature of their mentoring relationships and their subsequent career decisions, including whether an academic career path was considered and why it was or was not pursued. Such a study would allow the three-stage cycle proposed in Section 8 to be tested as a causal sequence rather than assumed from cross-sectional associations. The second priority is a mixed-methods investigation of the proposed "Logistical Threshold"—the clinical volume and faculty-to-student ratio at which capacity for mentorship, as distinct from coaching, becomes difficult to sustain. Even a single-institution study using diary methods, validated burnout inventories, and mentoring-activity logs could provide an initial empirical estimate against which the Dose–Response and Invisible Load problems identified in Section 8.1 could be tested. Pursuing these two lines of inquiry would allow the field to move from the conceptual framework proposed here toward empirically grounded guidance for dental education administrators.

12. Conclusions

Dental education depends on mentorship to form the professional identity of its future practitioners, yet the conditions described throughout this review—faculty burnout, production pressure, and a persistent vacancy crisis—may make that mentorship increasingly difficult to sustain. Drawing on a structured literature search of PubMed and ERIC, this review proposes the "Mentorship Paradox" as a conceptual framework connecting these conditions, identifies four gaps that have so far kept the pattern from being tested longitudinally, and argues that resolving it will require institutional frameworks that treat mentor capacity as a measurable resource alongside a shift toward longitudinal, outcome-validated research. The Mentorship Paradox remains a plausible and well-motivated hypothesis

rather than a proven empirical phenomenon—one this review hopes will prompt the kind of dental-specific investigation described in Section 11.

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