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Interdirectional Mentoring in an Individual Interdisciplinary PhD Program: The Symbiotic Relationship Between the Student and the Committee

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ABSTRACT

The mentoring relationship between a PhD (Doctor of Philosophy) student and their advisory committee is paramount in the student's academic and professional journey. Mentorship is an essential element in the Individual Interdisciplinary PhD (IIP), where navigating the blurred but often complex lines of disciplinary boundaries is expected, if not essential. This analysis describes how mentoring has evolved from the top-down approach to a co-constructed paradigm within the context of the IIP. This study examines how roles, responsibilities, attitudes, and the transfer of knowledge shape relationships and foster camaraderie, intellectual growth, innovative initiatives, and professional development, ultimately producing rich dialogue and scholarship. The study suggests best practices for optimal mentoring in interdisciplinary research settings and provides examples of application in public health and healthcare studies.

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Mentorship is a critical ingredient in the pursuit of a doctorate, particularly in the Individual Interdisciplinary PhD (IIP), where students and committee members alike navigate various lines and boundaries of multiple disciplines that are often murky at best. We often characterize traditional discipline-specific programs as those in which the student is mentored by their advisor, guiding research with discipline-specific knowledge. The IIP, however, requires a more refined approach that involves a mutually beneficial mentoring relationship [1]. Hierarchical lines become less visible in that the student and teacher roles are often reversed.

Interdirectional mentoring describes a relationship between the student and their committee members and how the partnership contributes to each other's intellectual growth, creating constructive collaboration, rich dialogue, and scholarship rather than discord. The relationship is both symbiotic and synergistic. The relationship is symbiotic because it is a long-term partnership that benefits both the student and committee members, and synergistic in that collaborative, interdisciplinary efforts are more robust than a single disciplinary perspective. The student's IIP committee members, often composed of faculty or advisors from diverse disciplines or fields, encourage and support the student in guiding the integration of these disciplines.

The student benefits from the knowledge and expertise provided by committee members, and the committee collectively is rewarded by the student's ingenuity in fitting a square peg into a round hole as they bridge interdisciplinary knowledge gaps. The new dynamic creates an archetype fostering collaboration, co-learning, and

interdisciplinary integration. Rather than using the customary bi-directional terminology to describe the back-and-forth movement of information, we use interdirectional to illustrate how all parties are involved in shaping and nurturing the mentoring relationship in IIPs. This analysis examines the dynamics of mentoring and their impact on research and professional development.

Structure of the Individual Interdisciplinary PhD

The IIP is structured to enable students to pursue research and education that spans multiple disciplines, addresses complex issues or societal challenges, and incorporates theories and frameworks from diverse areas of study [2]. The student-driven approach (or student-driven learning) is the concept that the student determines areas of focus and pursues education and projects that support their interests [3]. This approach is fundamental in the IIP, as the students are empowered to lead the charge in shaping their curriculum and research. In contrast to traditional academic programs which are often grounded in a single discipline and driven by faculty, IIP enables students to design and customize their program, allowing them to explore their unique perspectives and develop interests [1].

The student's advisory committee is instrumental in the IIP program, recognizing that the opportunity exists to gather experts from diverse fields or disciplines to build a prosperous and more holistic support system. The committee's responsibilities extend beyond the traditional advisory roles, as combining diverse disciplines requires careful navigation and impartiality. By taking a collaborative and unified approach, students and committee members foster trusting relationships and promote efforts that drive dynamic research. The committee's willingness to share knowledge and resources, and provide mentorship to the student, is a testament to the paradigm shift of the IIP's engaging nature,

it offers mentorship to the student and integrates insights into the research framework [4].

The criteria generally require that the program of study include two or more disciplines, with one or more offering graduate degree(s) at the level the student is seeking. For example, Ohio University requires students to select a minimum of two emphasis areas, with one offering a doctoral program and the other offering graduate degree programs [5]. Moreover, the program must not already exist as a degree program within the University.

Mentorship in Traditional PhD Programs vs Interdisciplinary PhD Programs

Traditional PhD programs generally facilitate one-directional mentoring relationships, with the advisor(s) or committee members guiding the student through an existing framework within that discipline, which facilitates a top-down approach where committee members hold all knowledge and serve as gatekeepers, expecting the student to absorb and apply their theories, frameworks, and expertise to their research [4,6].

In contrast, the IIP requires a more collaborative approach with flexibility and agility. As interdisciplinary research often requires the intersection of multiple fields, no single person holds the expertise to guide the mentee through every aspect of their research and project(s). This interdisciplinary dynamic transforms the relationship into an interdirectional mentoring process. The student is not just a student but an academic contributor who engages in mentoring by synthesizing insights across disciplines as they actively contribute to shaping the research agenda. Faculty engage in life-long learning as a result, as they are exposed to new interdisciplinary perspectives and methodologies, illuminating paths on intellectual horizons.

Dynamics of Interdirectional Mentoring

The concept of interdirectional mentoring requires that the student and committee members willingly exchange resources, including knowledge, suggestions, and expertise. There are several ways in which this happens:

1. **Co-Learning-** The student and their committee members openly exchange ideas and resources when using interdirectional mentoring. Co-learning facilitates interaction and engagement, which enhances the learning experience. The student, often acting as the integrator and facilitator, brings forth novel approaches that transcend traditional disciplinary boundaries. Committee members offer guidance and expertise within their fields, are exposed to new ideas and interdisciplinary frameworks, and can learn from them, which fosters an environment for innovation as new insights emerge [1].
2. **Skill Development-** By adopting interdisciplinary methodologies such as processes or criteria for gathering and analyzing information, interdirectional mentoring provides opportunities for further skill development and the integration of knowledge from multiple disciplines based on the student's disciplines of interest. New perspectives enhance interdisciplinary capacities as students and committee members engage with them. Collaboration with colleagues across multiple fields enhances critical thinking skills and offers affordances such as building a common language. Consequently, committee members may also develop their skills in mentoring future interdisciplinary students, which, as discussed previously, differs from advising students in traditional or established programs. Further development

involves guiding students in their research while keeping an open mind to learning and accepting the students' unique perspective.

3. **Collaborative Problem Solving-** Interdirectional mentoring frequently involves collaborative problem-solving, where the student and committee members collectively work to achieve cohesiveness when conducting interdisciplinary research. Challenges such as methodological conflicts, epistemological viewpoints, and differences in theoretical constructs may arise when integrating diverse forms of knowledge [7]. By working together, the student and the committee co-create effective solutions and push the metaphorical disciplinary boundaries.

Benefits of Interdirectional Mentoring

The student(s) and committee members benefit from effectively using the interdirectional mentoring method. The student gains access to knowledge and resources from multiple disciplines. Navigating disciplines enhances skill development, which affords the necessary intellectual growth and agility to address complex and real-world problems. The student gains experience through collaboration with experts from diverse fields of study, which enhances the student's professional skills and adds value to the overall educational experience through exposure, networking, and research. Opportunities in skill development include project management, communication, networking, data analysis, and presentation.

A significant aspect of a successful IIP is that the student becomes an empowered and confident researcher [8]. When interdisciplinary collaborators recognize the value that each person brings to the group, they empower the student to develop autonomy and legitimacy as a researcher by acknowledging the student's knowledge rather than their lack of it. The dynamic fosters a respectful environment, minimizing toxicity because no person knows everything about every field.

Committee members benefit from the introduction and exposure to new ideas and frameworks that could enhance their work. Additionally, mentoring interdisciplinary students enables the fine-tuning of future mentorship for students across disciplines. Interdisciplinary mentorship will prove to be a valuable skill to acquire as research and academia evolve and expand [1]. Finally, as the student and committee member(s) continue to collaborate and co-create, they contribute to mutual professional and intellectual development.

Supporting Evidence from Interdisciplinary Research

Interdirectional mentoring in IIP programs is consistent with broader calls for interdisciplinary approaches to complex academic and societal challenges. Prior research highlights the importance of integrating perspectives from diverse fields to develop comprehensive solutions. For example, Plavska and Machtmes argue that interdisciplinary collaboration among disciplines such as public health, education, nursing, cultural studies, and law fosters innovative strategies to address issues like health literacy [9]. The findings illustrate that when stakeholders from varied backgrounds contribute their expertise, outcomes are more robust, inclusive, and sustainable.

This emphasis on convergence parallels the interdirectional mentoring dynamic, in which students and committee members co-construct knowledge across disciplinary boundaries. Just as interdisciplinary collaboration enhances health literacy interventions by leveraging multiple lenses, the IIP model enables

committee members and students to transcend silos, collectively shaping research questions, methodologies, and scholarly contributions [9]. In both contexts, the blending of disciplinary insights not only strengthens intellectual outcomes but also equips participants with transferable skills that extend beyond traditional boundaries.

The comparative framework outlined in Table 1 reinforces this point by illustrating how IIP mentoring departs from one-

directional, discipline-bound structures to adopt a shared authority and co-learning approach. By situating interdirectional mentoring within the broader interdisciplinary movement, IIP programs highlight how reciprocal mentoring relationships align with best practices in collaborative problem-solving, reinforcing the idea that intellectual growth and innovation flourish when knowledge is not transmitted in a single direction but instead cultivated through mutual exchange across disciplines.

Table 1: Mentorship Models: Traditional vs Interdirectional

Feature	Traditional PhD Mentoring	Interdirectional Mentoring (IIP)
Direction of Knowledge	One-directional (advisor → student)	Multi-directional (student ↔ committee ↔ disciplines)
Power Dynamic	Hierarchical, top-down	Collaborative, shared authority
Student Role	Passive learner	Active contributor, integrator
Committee Role	Gatekeepers of knowledge	Co-learners, collaborators
Outcome	Disciplinary expertise	Interdisciplinary innovation, co-created scholarship

Interdirectional Mentoring and Positionality

Interdirectional mentoring encompasses positionality by emphasizing the reciprocal and mutually beneficial influence of mentors and mentees on one another, grounded in their identities, roles, and social contexts. Described positionality as the unique perspectives of individuals shaped by their social identities (e.g., race, gender, culture) and experiences, and how these perspectives directly impact the dynamics of mentoring relationships [10]. With the acknowledgment of power dynamics, interdirectional mentoring recognizes that the mentor/mentee relationship brings varying levels of authority, expertise, and lived experiences, which shape interactions and contributions to learning.

Consequently, mentors and mentees frequently switch back and forth between learner and teacher roles, fostering an exchange that not only respects but also integrates each position with inclusivity and understanding [10]. This requires a process of dynamic adaptability as contexts shift, enabling responsiveness to the socio-cultural and institutional realities that inform each person’s positionality. Through critical reflection, both parties can ruminate on how their positionality influences their perspectives, interactions, and learning goals. By integrating these elements, interdirectional mentoring ensures that the interplay of identities, experiences, and social positions enriches the mentoring process, making it dynamic, inclusive, and transformative.

Additionally explore positioning theory within the framework of interactional ethnography (IE), focusing on how discourse and interactions shape roles, relationships, and norms in educational settings [11]. Using Advanced Placement Studio Art classes as a case study, the authors analyze how teachers and students collaboratively construct identities and learning opportunities through positioning processes. The work underscores the interplay between theory and practice, employing recursive analyses to connect individual experiences with broader social, cultural, and institutional structures. It highlights the crucial role of discourse in shaping learning environments and the agency of participants within them.

By examining how roles and relationships are shaped through discourse and interaction, these examples offer valuable insights into the interconnected social, cultural, and institutional dimensions of education. This approach reveals how individuals navigate and redefine their roles within complex learning environments, contributing to their personal and collective development.

Application in Dissertation Research

The author’s dissertation provides a practical example of how interdirectional mentoring and interdisciplinarity function in academic research [12]. Each chapter reflects an exchange of knowledge between student and committee, where disciplinary expertise and personal research interests intersected to co-create scholarship.

For example, the literature review chapter integrated theories from education, health communication, and public health, guided by committee members who contributed expertise from each field [12]. The methods chapter illustrates interdirectional mentoring in practice: the committee’s methodological guidance intersected with the author’s own design choices, producing an innovative framework tailored to interdisciplinary inquiry. Finally, the chapter on health literacy and community health workers demonstrates how insights from nursing and education were bridged through collaborative dialogue, enabling the author to situate findings within multiple disciplinary contexts.

These examples highlight how positionality shifted throughout the dissertation process. At times, the author assumed the role of integrator and facilitator of knowledge across disciplines; at other times, committee members became co-learners as new connections emerged. The dissertation process itself thus embodies interdirectional mentoring, showing how reciprocal mentoring and interdisciplinary integration enrich both the student’s scholarship and the committee’s perspectives. Through interdirectional mentoring, committee members were exposed to new concepts and the practice of community health work, shifting their own positionality as they moved beyond disciplinary silos and came to embody the true meaning of interdisciplinary research.

Challenges of Interdirectional Mentoring

Although there are benefits to interdirectional mentoring, there are also challenges. Even when an interdirectional mentoring approach is in place, power imbalances may still be present. The student may feel that committee members hold authority over the student and their progress. The student must respect protocols and regulations, just as the committee members must also respect creativity and forward thinking. Committee members are present to guide the student in research and resources, while also providing oversight to avoid conflicts and ensure that the student follows regulations.

Committee members may struggle to appreciate or understand interdisciplinarity in nature due to working in disciplinary silos. The student's work may be affected if the committee member(s) have a rigid background. The entire premise of interdisciplinary programs is to exchange ideas and bring forth multiple perspectives to design a common language. The student will have difficulty moving forward if the faculty are not open to the exchange.

Moreover, balancing conflicting information can be challenging for the students when working with committee members from different fields, especially when disciplinary priorities conflict [4]. The student should be empowered to make their own decisions regarding the nature of their research and to take what is needed. The student and their research will suffer, and growth will stagnate if committee members adopt the attitude that their perspective is absolute.

Suggested Best Practices for Interdirectional Mentoring

Consider best practices for optimal results in interdirectional mentoring. Open and transparent communication between the students and their committee members is essential. Expectations of both the student and the committee members should be clearly defined, agreed upon early, and discussed often to foster a productive and collaborative relationship [1]. Students should be encouraged to share information with their committee and ask for clarification when needed. Committee members should also be empowered to share their knowledge without fear of disciplinary judgment.

Additionally, all parties should enter the relationship with an open mind to learning. As previously discussed, no single person possesses all the knowledge or answers. Students and committee members should be willing to collaborate across disciplines to explore new approaches for a common goal.

Furthermore, by collaborating across disciplines, the interdirectional mentoring approach embodies intellectual risk-taking to explore what happens after asking the question by encouraging individuals to think outside the metaphorical box and utilize multiple viewpoints.

Conclusion

The concept of interdirectional mentoring is an evolving and iterative approach to student-faculty relationships in Individual Interdisciplinary PhD programs. The framework promotes innovation in research and education by fostering collaboration, co-learning, co-creation, and personal intellectual growth. The exchange and co-construction of knowledge and skills enhance the academic and professional experiences of students and committee members, ultimately contributing to the goal of interdisciplinary research and scholarship. As higher education continues to evolve and places increased value on interdisciplinary studies, interdirectional mentoring offers valuable opportunities for future generations.

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