

Mentoring in Directed Independent Study

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Most of us can remember having had one or more good teachers during our education ? individuals who made learning fun, memorable, or easy. A lucky few of us, however, have had a mentor, a combination of teacher and counselor, who connected with us allowing for a heightened transfer of knowledge and wisdom. Mentors teach, coach, and advise, guiding their student's development and providing a model to emulate. The depth of the mentoring relationship is what makes each of these learning mechanisms effective and is also what sets mentoring apart from teaching. Mentoring is therefore most effective when the mentor and student can establish a bond: This is easier when both individuals have positive dispositions, are committed to the interaction, and have an established compatibility. With these elements in place, an emerging rapport allows for a vicarious transfer of skills and the application of goal-directed learning targeted towards individual psychosocial and career requirements. These may be fostered through the cultivation of trust, advisement, recognition, modeling, and tiered task progression.

Although mentoring is clearly very effective, it is not readily available to all students. The high ratio of students to teachers in most educational institutions means that it is not feasible for faculty to mentor every learner. One place where mentoring techniques can be successfully applied is through research under the supervision of a faculty member, often called directed independent study. This article considers methods to optimize mentoring in directed independent study, which can also be applied to other student-faculty interactions in which a bond is established.

The progression of a mentoring relationship can be divided into several stages: initiation, interaction, cessation, and (possibly) friendship. This paper primarily explores how the first two stages of this model can be successfully carried out with respect to the nature of the relationship. In other words, how context and personality play a role in the formation of a connection and the quality of exchange. Research suggests that the quality of interaction experienced by the mentor and student is influenced by four main factors: a) commitment to participate, b) harmony of interaction, c) skill acquisition efficacy, and d) application of structured learning to long-term goals. If any of these factors are lacking, mentoring function is weakened or disabled (Ragins & Scandura, 1999; Scandura, 1998).

To illustrate the ways in which a mentoring dyad can be most effective, we can consider as examples two students who would like to register for independent study. These two profiles are useful to provide context in a discussion of the *phase of the relationship* and *characteristics* of those involved. Alex is a freshman who is taking a class with the professor, but has not yet identified a major. He is therefore uncertain about which skills will be most important for his future career, but he feels confident about his overall abilities. In addition to his studies, Alex has a range of other commitments, including a part-time job in the service industry and an active involvement in the religious and African American communities. Alex has a history of academic success in liberal arts classes, but suffers from anxiety prior to an assessment or public speaking. He is, however, persistent and open to new experiences. Jo is in her junior year and has already had experience working with the professor in directed independent study during the previous semester, managing a study she designed herself. She is conscientious and

intrinsically motivated to acquire the skills that she needs, with clearly defined career goals and an established field of interest within the psychological sciences. She has a technical background with strength in mathematical principles and analysis but little experience with writing. In addition, Jo is not a native English speaker and has time-consuming family obligations. She holds a position on the student council and enjoys being the center of attention.

Commitment to Participate

Commitment to the interaction begins with expression of intent. Interested parties might routinely be encouraged to provide concrete evidence supporting that intent, such as completing a form outlining the reasons for their interest and attending preliminary meetings prior to registration. This lays a solid foundation for the development of a bond, which is critical to mentoring. Of our two students, Jo has already established commitment to the exchange via previous involvement with work carried out in the professors' laboratory and continued desire to participate. Alex does not have established commitment, but he can demonstrate commitment for example, by filling out an application outlining his skills and reasons for involvement prior to registration. He could also attend some of the professor's ongoing laboratory meetings and talk privately with those already registered about how the course meets their professional requirements.

On his or her part, the mentor can demonstrate commitment by describing mentoring aims, including collaboration to increase the student's competency with pertinent literature, research design and development, data collection, analysis, interpretation, and giving professional presentations. This exchange could, for example, help Alex crystallize his expectations of what he hopes to experience and gain with a research career and allow him to determine whether his expectations are in line with his objectives and those of the professor. If the student's and professor's goals can be aligned early in the process, the mentoring connection is more likely to be successful.

Harmony of Interaction

The quality of the mentor-mentee interaction also depends in part on the individuals' dispositional tendencies and the compatibility of those involved. Compatible mentors and mentees with agreeable natures who establish common ground quickly will be able to develop a bond more rapidly than non-compatible individuals. Jo, for example, is comfortable expressing herself, and she easily establishes new relationships. Alex is more reserved about disclosing information, and an instructor interested in mentoring him should therefore place a greater emphasis on getting to know him. However well-matched the individual's temperaments are, no mentoring relationship can develop in the absence of contact. The mentoring interaction is underpinned by routine contact and availability. Organized weekly meetings, specified office hours, and working contact information provide the foundation for the development of a lasting mentoring relationship.

Ethical practice

There is an inherent imbalance of power in any teacher-student relationship. A teacher is always in a position of authority over a student, and this carries the potential risks of exploitation and coercion. Increasing awareness of the possible perils of the mentee-mentor relationship reduces the chances of inappropriate activity and increases the likelihood of a positive and productive interaction. To this end,

the quality of the relationship can be assessed anonymously or in person using questionnaires or via free format. In addition, the potential for negative mentor-mentee experience can be actively addressed by focusing on performance, individual presentation, and dyadic interaction (Ragins & Scandura, 1999; Scandura, 1998).

To avoid the pitfalls of unethical practice, both mentor and mentee can work to familiarize each other with their expectations. It may be useful, in our example, to circulate, prior to or following registration, information describing research activities in the professor's laboratory and the skills they target, as well as the criteria for successful collaboration and research study. This description could include information on progress evaluation and options students have to withdraw from or proffer changes to any program of work. Any such measure effectively provides transparency and flexibility in meeting the needs of the mentored individual if their personal circumstances or future aspirations change.

Once the collaboration is in process, how the mentor and mentee act is vitally important to maintaining ethical practice. In addition to mentor demonstration of academic honesty and respect for student autonomy, ethical mentee behavior should also be discussed prior to beginning work together. Mention of appropriate conduct, such as avoidance of plagiarism and consideration for others, may also be included in circulated material. Any improper behavior on the part of either individual should be discussed and additional action taken, if deemed appropriate.

Performance problems

Poor performance by the mentee might result from a lack of preparation or interest or from ineffective collaboration with the mentor. These outcomes may stem from either dispositional or situational sources. The impact of circumstance may be reduced by providing structured support with realistic expectations. Steps can also be taken to address self-destructive behavior on the part of the mentee, such as unexcused absences, poor prioritization, and procrastination. Care must be taken to tackle these problems as they arise, so they do not become entrenched. In our example, if either Alex or Jo were to miss meetings due to over-commitment, the professor could discuss time management techniques with the mentee. If the student does not fully complete assigned tasks, the professor can point out missed aspects, provide clarifications, and discuss how subsequent tasks may be accomplished.

The mentor can also measure the extent of Jo or Alex's understanding of complex academic topics by asking questions that require in-depth understanding of material covered. If progress is not being made, a different approach can be tried. The mentor can describe the process verbally and, if it is not well comprehended, figuratively. Alternatively, if the specifics are not well understood, a more global approach can be attempted. It is important that time is taken to compliment students on work that has been well done, to avoid a defensive, closed response to constructive feedback. This emphasis assists with meeting goals so that positive development is still experienced. However, student needs may exceed the abilities of the professor, and in such cases, the mentee can be directed toward appropriate campus resources (e.g., the writing center).

Interpersonal problems

Goal achievement in mentoring can also be undermined by personality traits such as narcissism, neuroticism, dependence, avoidance, or aggression (Huwe & Johnson, 2003). These may shift attention

toward an individual's emotional needs rather than the acquisition of professional skills and should be sensitively addressed. In our example, Jo's attention should be drawn to the constructive nature of criticism in providing a more realistic self-appraisal. Jo is driven by her career goals, but she would probably gain from identification of sub-goals and focusing on benefits experienced reaching them. Identifying behaviors that reduce assessment stress may be helpful for Alex. In short, interpersonal problems can be addressed to some extent by refocusing the energies of the individual or individuals.

Destructive relational patterns

Stigmatization or bias due to gender, class, race, or sexual orientation should be avoided. How external perceivers view the mentoring relationship may be influenced by the demographic composition of the dyad. For example, if the professor is the same gender, class, or ethnicity as Jo or Alex, favoritism may be attributed. On the other hand, mixed gender collaborations may engender sexual overtones. To minimize this, it is important that both mentor and mentee try to identify with the different experiences of socially marginalized groups compared to privileged groups and take this into account in discussions. For Jo and Alex, with this in mind, level of acculturation and ability to make progress given restrictive elements that they may encounter should be assessed. Alex might encounter expectations of lower performance due to his race. If so, does he continue to supply his best work or fall prey to self-fulfilling prophecy? Jo might encounter passive resistance due to her gender or stigma associated with changing career direction. If so, does she continue to sharpen her own unique qualities and network with those who support them or resign herself to this experience?

Even with the best intentions, interpersonal difficulties or problems meeting career goals can arise in a mentoring relationship (Scandura, 1998). Tactful handling of these situations is important to prevent the accumulation of frustration and disappointment. However, if no solution can be found, or if a conflict of interest arises (e.g., a romantic or business involvement) mentoring functions should be diplomatically ended. Overall, methods should be adopted that show consideration for the situation, job or financial pressure, interpersonal comfort, and cultural practice to reduce the potential for negative outcome (e.g., Johnson, 2002).

Skill Acquisition Efficacy

A realistic assessment of knowledge base and ability is critical in setting goals. In our example, the mentor can work to identify which of Jo and Alex's talents can be further utilized and how to address weaknesses. Alex, for example, would benefit from learning about the depth and variety of the discipline. His background suggests he has not had much experience with research design or statistical analysis and may wish to spotlight these areas. His mentoring needs are more psychosocial: making independent choices, adjusting to the requirements of college and identifying aspirations for the future. Jo, however, would probably appreciate building self-efficacy in writing while strengthening her resume with professional work and collaboration to aid in her future career. With this in mind, she may want to highlight experimental design and research presentation. This may involve developing ideas and professional contacts in her specific area of interest. Directed independent study offers the opportunity to use a wide range of skills and therefore incrementally address mentees' individual needs.

Application of Structured Learning to Long-Term Goals

If the mentor tailors writing and research objectives to each individual, mentees like Jo and Alex can show maximal improvement and fulfill their potential for independent functioning. Both will be more motivated to invest in the mentoring relationship if the potential benefits are clear.

Addressing research goals

Jo identified a specific laboratory as the closest to her field of interest and initiated interest in collaboration on research of her own inspiration. Alex's decision to enroll in directed independent study may have come primarily from curiosity. In both cases, scaffolded guidance through the elements of design development, IRB application, data collection, analysis, and write-up are necessary. This process starts with identification of a novel research question, which can only be achieved with an understanding of the current state of the specific research field. Jo and Alex should therefore be directed to key references of interest to summarize and to search the literature for pertinent articles to present to the research group. Acquiring this information will provide the students resources for the generation of their hypotheses. Designs available to test these hypotheses and their viability can then be discussed. Students may be required to identify strengths and weaknesses associated with each design. As in Jo's case, the mentor should provide support to developing research that shows promise. Depending on the stage ongoing projects have reached, the students may then be involved in the collection or analysis of data. This will familiarize them with techniques for data manipulation and can provide a rudimentary exposure to statistical analysis. Even if the project is preliminary, a discussion of hypothetical findings and the selection of qualifying statistical results for each set of conclusions can be incorporated.

Addressing writing goals

Both Jo and Alex would benefit from reading widely within their chosen research area and on technical writing. Jo should be encouraged to pay particular attention to the layout and structure of research articles, and be provided with prototypic examples of format and writing styles in preparation for writing her first research article. With Alex, a mentor might concentrate instead on narrowing down areas of interest, concentrating as much on what he does not like as what he does like. Providing exposure to defining work in each sub-field would also be helpful. If Alex decides that his interests are stronger outside the field of psychology, ending the mentoring relationship with the professor of psychology should be addressed.

For writing tasks with both students, it is necessary for the mentor to underscore the importance of the drafting process in idea generation and evolution. Breaking the process down into small manageable sections and using subheadings can be invaluable. The mentor can draw attention to what defines stellar work with examples. Finally, giving Jo and Alex the opportunity to present their findings at a conference may provide extra motivation.

Incorporating peer and network mentoring

To promote knowledge exchange, Jo and Alex can collaborate on an assignment with each other or with other undergraduates or graduates. For example, conducting a literature search on a topic and pooling resources will expose them to alternative methods of searching that they may not have yet adopted. Alternatively, the mentor can encourage collaboration on the development of a research proposal or presentation. As Jo enjoys being the center of attention, she could be given the task of collating group

feedback on a project. To avoid any tendency she may have to monopolize the floor, the mentor can request that she concentrate on recording responses and not enter the discussion until later.

Mentors should discuss identification of the student's specific role and responsibilities in data collection, as well as a timetable for action. The student can be asked to rotate positions to support vicarious learning, allowing some abilities to develop instead of just relying on strengths. If several group members are interested in submitting a poster, the mentor can suggest that each of them work on different sections and then exchange tasks. Jo and Alex can be encouraged to interact with other professors with relevant areas of expertise either at the same academic institution or through conference attendance. This brings the potential for a network of mentoring alliances and greater cross discipline integration.

In our example, a successful mentoring exchange with Jo, Alex, or other potential psychology laboratory members can be achieved by establishing commitment and a structured, open meeting environment early in the process. Directed independent study objectives include enhanced efficacy in writing, and research design and development. Adaptation of these objectives according to each person's distinctive reasons for participation allows for identification of individual project goals. This assessment also provides them with a barometer for performance and allows for further refinement of areas of intrinsic interest and skill. Such a tailored approach by the mentor allows for more realistic self assessment and resume strengthening, specific to the mentee's future professional goals. ?

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