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MEETING ENGINEERING STUDENTS' NEEDS THROUGH THE INVESTIGATION AND DEVELOPMENT OF EFFECTIVE MENTORING PRACTICES

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Synopsis:

The present research study was comprised of students who have successfully obtained a STEM (Science, Technology, Engineering, and Math) undergraduate degree. The researchers were interested in capturing the mentoring practices that led to the successful completion of their undergraduate degree. The present study aims to share an innovative model of mentoring from these findings. The model will include mentor and mentee perspectives and significant current literature on mentoring in STEM.

Engineering students could greatly advance in their studies and in the field from a mentoring relationship creating opportunities, such as internships or externships in the industry and research and portfolio development. The implications for Engineering students to progress in their professional development from such mentoring practices as displayed in the models are remarkable.

It is important for the mentors to also display professional behaviors as they serve as role models for many mentees. Common research interest and strong work ethic may be important in keeping the mentor-mentee relationship long-lasting and beneficial by providing the mentee with opportunities within their shared research or Engineering field concentration. Besides choosing a mentor, it is important that the mentor provide the mentee with help in various ways to help the student succeed. Participants reported that their mentors helped them succeed by setting goals, providing positive and constructive feedback, and prioritizing the initiation and development of respect among other factors. Respect also seems to be a key factor guiding and sustaining the mentor-mentee relationship. Additionally, mentors that provided constructive and positive feedback helped the mentee to advance and grow within their studies. The open dialogue involved in feedback supports rapport building and may be a form of encouragement advancing student experiences and contributing to mentee acceptance by the mentor. Acceptance is prioritized by mentees, which has implications of Engineering students' perspectives regarding acceptance by their mentors or perhaps in the field that may contribute to a sense of belonging.

Conclusion

A mentor has the potential to enrich the mentee's experiences by revealing Engineering career pathways in industry or graduate school. Undergraduate students are often new to Engineering fields, unaware of opportunities, and may be intimidated by the overall independent collegiate experience. Therefore, it is the responsibility of the mentor to support students in Engineering to identify their strengths, overcome their limitations, and to share with them opportunities for professional growth. Findings of the present research study indicated that acceptance, opportunities, experiences, and respect are key components that impacted the mentees' mentoring experiences in their undergraduate careers in Engineering. Through the findings and the current literature, mentoring is determined to serve as an incredibly influential and necessary element to student success in Engineering fields. The two sister models developed from the mentors and mentees' perspectives have implications to lead to further supportive practices fostering mentoring relationships for students and leaders in Engineering fields.

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