Chapter 15
Future Scholars: A Reflective Analysis of Student Mentorship in Scientific Research

Hadi Nur

15.1 Introduction

The role of student mentorship in scientific research is a crucial component of the higher education process. It aims to form the academic and professional identities of future scholars. This paper is a reflective account of the author's practice as a mentor in chemistry. It discusses the beneficial effects that a mentor can have on students. Based on the author's experience mentoring students, the study employs a qualitative research method that involves reflection, field notes, and survey data on the professional achievements of former mentees. The primary objective is to comprehend the diverse training needs of students and the challenges and opportunities they encounter in their research endeavours. Additionally, the paper emphasises the significance of the research context, educational policies, and the mentor's approach in cultivating students into accomplished scholars and researchers.

The findings of this paper are based on my experience as a mentor, which spans over twenty years, from lecturer to full professor. In this process, I have consistently developed mentoring strategies based on direct interaction with students and other academics. My mentoring philosophy is grounded on the premise that graduate students should be prepared as efficient researchers and responsible professionals in society.

Over the years, I have been fortunate enough to mentor many students, especially during my tenure at Universiti Teknologi Malaysia (UTM). Since 2002, I have supervised 36 Ph.D. students, 21 M.Sc. students, 58 B.Sc. students, and six postdoctoral researchers, guiding them through the complexities of scientific research and academic life (see Table 15.1). These students have come from various countries, including Malaysia, Indonesia, Iran, Libya, and Nigeria.

H. Nur (✉)
Universitas Negeri Malang, Malang, Indonesia
e-mail: hadinur.fmipa@um.ac.id

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Table 15.1 Overview of supervised researchers and students (data as of August 2024)

Category	Total	Remarks
Postdoctoral Researchers Supervised	6	All completed
Ph.D. Students Supervised	40	36 graduated
M.Sc. Students Supervised	22	21 graduated
B.Sc. Students Supervised	59	53 graduated

The philosophy of my mentorship is based on the principle that students should be guided not only as researchers but also as ethical professionals who will have a significant impact on society. I emphasise the importance of interdisciplinarity and encourage students to work on projects that address real-world problems. This approach aligns with life-based learning (LBL), which I incorporate in my mentoring, where students get real-life experiences to support their learning (Jacinto et al., 2017).

The fact that it significantly impacts students' retention and success in their undergraduate and graduate studies strongly supports the need for scientific research mentorship. Research has shown that learners with quality and continuous mentorship are more likely to continue their studies, achieve better results, and progress smoothly to the next stage of their careers. This can entail one-on-one support, motivation, connections, and training within a specific field of interest. In science, where research can be both lonely and challenging, mentorship provides the structure students need to persevere, maintain focus, and succeed.

Additionally, the role of the mentor is of great importance in shaping the ethical and professional values of the future scientist. First, a mentor is someone to look up to, and I always aim to be a good example of an honest, hardworking, and inquisitive person. In my daily practice, I listen to students' concerns, such as how they balance their research and other activities, how they manage to overcome the challenges they face in research, and the common competitiveness in most graduate schools. This approach to mentoring ensures that students achieve success, produce high-quality results, and become skilled professionals who can positively impact their respective fields.

Life-based learning (LBL) is a teaching strategy that integrates life experiences into the learning process to enhance the learning process of the learners. It involves the student in an activity, reflection, and application of the learning to a problem. This approach fosters critical thinking, problem-solving, and flexibility—essential skills in both school and the workplace (Susilo et al., 2019).

In the context of higher education, LBL provides a stimulating and practical approach to learning that extends beyond the traditional lecture format. It involves students in their learning process, allowing them to apply what they have learned in class. This method is beneficial in graduate education because the students must research and contribute new knowledge to their fields. Therefore, by applying LBL principles in the mentorship process, educators can enhance the learning experience and make it more effective in terms of preparing students for future careers.

LBL is also very useful in mentoring. When LBL is used in the guidance process, the mentors can help the students see how their research is connected to society. For example, in science education, LBL can involve students in inter-disciplinary activities addressing environmental conservation, health, or technology. In such projects, students enhance their research skills and gain a deeper understanding of how their work can benefit society.

The theoretical framework for this study is based on life-based learning, which integrates experiential learning into the curriculum. LBL is based on the idea that learning is best understood in the context of the learner's life. It is grounded in the experiential learning theory, as postulated by Kolb and others, which posits that knowledge is transformed by experience. Kolb's experiential learning cycle, which comprises the stages of concrete experience, observation, reflection, abstract conceptualisation, and active experimentation, can be used to explain how LBL is applied in learning environments (Kolb, 1984).

The following are ways LBL principles can be applied to enhance the student mentorship program: A mentor assists students in applying their knowledge practically, helps them analyse situations, facilitates the connection between theory and practice, and aids them in solving practical problems. This process enables students to enhance their academic achievement and simultaneously prepare them for the real-life challenges they will likely face in their future careers.

Another crucial factor for a student's professional development is the concept of mentorship, which encompasses the elements of LBL. It helps them acquire the necessary skills and experience to achieve their goals and objectives in their fields of interest, including analytical skills, problem-solving, and teamwork. I want to teach students through life-based learning to be purposeful, have the desire to learn, and demonstrate to them how the knowledge they gain is relevant to their lives and work.

Integrating life-based learning in training students as mentors in research is a good educational model that enhances the application of learning. Mentors can utilise LBL principles to create a more effective and positive learning environment for students, helping them achieve their aspirations of becoming scholars and professionals. This reflective analysis underscores the significance of mentorship and LBL in shaping the future of graduate education. It is helpful for educators and institutions that wish to enhance the quality of mentoring.

15.2 Mentorship Experience

This research employs a reflective lens to analyse the practices of mentorship based on my experience as a Ph.D. candidate at UTM and a postdoctoral fellow at UTM and Hokkaido University. Over the years, I have developed a deep appreciation for the scientific process and the challenges inherent in academic supervision. My experience has shown that science is not only about achieving the outcome; it is a challenging process that includes moments of hard work and great rewards. This process

can be compared to climbing a mountain, where the pace is usually slow, and there are times when one slips backwards. However, the feeling of reaching the top, where new and unexpected ideas are born, is priceless. This is where the true essence of science is found in the struggle and the discovery. This insight has enabled me to guide and support students through their research projects more effectively.

Through identifying challenges and making discoveries in my research process, I have gained a deeper understanding of my students' challenges and how to assist them. In terms of methodology, this research employs reflective practices, field observations, and direct communication with students. The observations made in the present study were gathered through my experiences with graduate students in various capacities, including supervisor, observer, consultant, and discussant, which helped me understand their training requirements and perceptions of mentorship.

One of the reflective learning experiences created by my students described their research journey at Universitas Negeri Malang (UM) (Muthiah et al., 2023). They navigated multiple changes in their thesis topic, moving from photoelectrochemical cells to water splitting and finally to developing a photodetector. The students encountered various challenges, including the complexity of the topics, inadequate equipment, and the need to acquire new knowledge. Despite frustrations and setbacks, I provided constant support and encouragement. This experience taught them the difficulties of being researchers, highlighting the importance of adaptability, persistence, and a proactive approach to overcoming obstacles. Through their reflective writing, they also discussed the personal growth they experienced, such as increased self-awareness, enhanced critical thinking skills, and a deeper appreciation for the research process.

Since 2012, I have implemented an online booking system for student meetings during my office hours. This system involves students in their education, helping me gauge their independence and engagement. Additionally, I engage students in writing tasks that allow them to express their thoughts, perceptions of research issues, and development as scholars.

15.3 Integration of Life-Based Learning in Mentorship

When training Ph.D. students, I have developed a special approach that combines education and research. A Ph.D. process involves sharing knowledge, values, and wisdom. For Ph.D. students, the ability to become resilient researchers is an integral part of the curriculum. Here, I will present students' feedback on the approach I took as a mentor, which can be summed up as "enjoying scientific research."

One of my Ph.D. students was highly grateful for the mentorship I provided her. Although she had doubts that he could do a Ph.D., I encouraged her to consider the fast-track option from bachelor's to Ph.D. The student faced challenges, particularly in achieving the desired research outcomes at the outset of her studies. Nevertheless, with my help, the student was able to overcome these challenges.

Additionally, the students' research topics within the group varied, intentionally allowing each student to undertake independent research. The concept was to help students understand that PH.D. research is not a simple task, but instead requires critical thinking and a certain level of expertise. In this regard, my scope of work included advising the student on academic matters related to their health and time constraints. This case illustrates that flexibility and understanding in academic advising are essential, as they enable students to complete their coursework effectively.

To facilitate life-based learning, I have adopted a mentoring strategy that involves advising students to keep a research logbook. Apart from instilling discipline and precision, this helps them develop a systematic way of recording their learning process, self-assessment, and critical thinking skills. By making entries, students develop the skills of time management, planning, and analysing their work, which are crucial for academic and career success.

To support this approach, it is possible to use the theoretical framework of constructivist learning theory with a focus on social constructivism, as described by Lev Vygotsky (Liu & Chen, 2010). This theory postulates that learning is a social process that occurs in a social context and is facilitated through interactions. In the context of Ph.D. mentorship, it corresponds to the concept that students are not only taught but also guided by a mentor who helps them become independent researchers. Additionally, the theory of andragogy, as proposed by Malcolm Knowles, emphasises the concept of self-organisation and the role of a guide in fostering conditions for critical analysis and problem-solving (Henschke, 2011). By incorporating these pedagogical theories, my mentorship approach empowers students with technical skills and the spirit and knowledge that would enable them to succeed in their academic and working lives.

When applying the concept of mentorship to the needs of students from diverse backgrounds and cultures, it is essential to recognise that each student brings their unique background, beliefs, and attitudes toward the research. Such an approach can be problematic because it does not consider these differences, which may result in the mentee's disengagement or confusion. Cultural competence is also important for the mentors because students from underrepresented groups may experience specific barriers. This means that the strategies used in the mentorship process should be sensitive to these students' language, culture, and educational needs.

Although concern for students' well-being is a primary focus in academic environments, the well-being of mentors is also crucial to mentoring. Mentors are under immense pressure to teach, conduct research, and perform administrative tasks; thus, they may easily get overwhelmed. Institutions should value mentors and support them with resources such as time management training, mental health support, and professional development opportunities. Supporting mentors enables them to offer the best guidance to their students, hence improving the quality of mentorship.

To enhance the efficiency of the mentorship process, it is crucial to evaluate it from both the mentor's and the mentee's perspectives. This could involve weekly or biweekly meetings where students can share their experiences, challenges, and accomplishments with their tutors. Likewise, mentors should be encouraged to assess their mentorship practices and seek ways to enhance them, or to seek advice

from others or independent reviewers. Through structured assessment and evaluation procedures, institutions can ensure that the mentorship process is a fluid and adaptive component of academic training for both students and mentors.

15.4 Pedagogical Strategies for Experiential Learning

Incorporating life-based learning into mentorship involves utilising teaching methods that leverage real-life experiences to enhance learning. This is evident in the actualisation of student research projects, where new ideas that are hardly available in the literature offer the students unique research experiences. Referring to Thomas Kuhn's notion of paradigm shifts in science, these projects encourage students to venture into new frontiers, thereby promoting a creative and analytical learning environment (Kuhn, 2012).

A crucial component of this type of mentorship is the selection of research topics by students. Good topic research is based on significant scientific problems that have been solved using all available means, rather than the availability of methods or trends. This approach helps students understand the importance of asking and answering key questions in science, fostering a sense of accomplishment and contributing to the advancement of the field of science. However, this path is not without its obstacles. Specific research areas appear very interesting at first glance. Still, they may cause students to become 'zombies' through their research or chase after mirage objectives that contribute little to the advancement of science. Such traps as 'negative' research (researching only to disprove other research) or 'tool-oriented' research (researching not by the questions posed but by the tools used) can lead students away from becoming significant contributors to the field.

As a mentor, I guide my students through these difficulties by selecting interesting and important topics for scientific development. Even though such projects may take longer to be published due to their novelty or difficulty level, they are instrumental in learning, as they teach students to be persistent, innovative, and analytical. Thus, students can gain a deeper understanding of their work and the absolute pleasure of scientific discovery by focusing on the significant scientific questions, even if the publication process is unclear.

15.5 Implementing Interdisciplinary Projects in Graduate Studies

For example, one student described a situation where she faced many challenges halfway through her Ph.D. program, and the laboratory experiments could not be conducted. To this end, I proposed an interdisciplinary approach that involves mathematical modelling, experimental design, and computational techniques. This shift

enabled the student to continue their research without having to perform laboratory work. It demonstrated how an interdisciplinary approach can be applied in graduate programs, highlighting both the advantages and the difficulties encountered. This way, students can expand their horizons and acquire various skills that are important in the modern world, particularly in research.

The application of life-based learning in the mentorship process is not limited to academic support and the enrichment of students' knowledge, but also involves cultivating their character, problem-solving skills, and understanding of the scientific method. In support of this approach, it is grounded in constructivist learning theory, which posits that learners acquire knowledge through experience, reflection, and social interaction. This way, students are encouraged to relate to other fields, which develops their ability to solve problems and think critically. It also aligns with Kolb's experiential learning cycle, in which the students learn through concrete experience, reflective observation, abstract conceptualisation, and active experimentation. By incorporating these pedagogical frameworks, life-based learning in mentorship empowers students with academic skills and knowledge, preparing them to thrive in the dynamic world of scientific discovery.

15.6 Mentorship Outcomes

I have been honoured to work with many undergraduate and postgraduate scholars who are committed to studying material chemistry and heterogeneous catalysis. This scientific journey has been marked by the collaboration with many talented individuals who have joined me in our research activities. Some alumni from my research group have assumed high-ranking positions in different academic and professional organisations. These include Professors at the School of Energy and Environment at the City University of Hong Kong, Institut Teknologi Sepuluh Nopember, Universitas Negeri Mulawarman, and a Science Specialist at Saudi Aramco. Others have become senior lecturers and researchers at institutions such as Badan Riset dan Inovasi Nasional (BRIN), Indonesia, Universitas Syiah Kuala (UNSYIAH), Universitas Negeri Padang (UNP), Al-Mustansiriya University, Baghdad, Iraq, Universitas Diponegoro (UNDIP), Sirindhorn International Institute of Technology, Thammasat University, Thailand, Universiti Teknologi Malaysia (UTM), Department of Chemistry Malaysia, Universiti Teknologi Mara (UiTM), Universiti Sultan Zainal Abidin (UniSZA), Xiamen University Malaysia (XMU), Universiti Sains Malaysia (USM), and Universitas Pakuan (UNPAK). Our research group's rigorous training and strong team culture have enabled these accomplishments, making significant contributions to materials chemistry and catalysis. These successes also demonstrate the significance of proper mentorship in shaping young scholars' academic and professional paths, underscoring the significance of support during their scientific careers.

15.7 Challenges and Opportunities in Student Mentorship within Scientific Research

Moving from Universiti Teknologi Malaysia (UTM) to Universitas Negeri Malang (UM) in 2022 has altered my approach to mentoring in scientific research. In contrast, at UTM, the structure, support, and time for research were more defined, which enabled a more streamlined process of assisting Ph.D. students in their scientific investigations. However, at UM, the environment presents different challenges, primarily due to the heavy teaching load, which limits the time and effort that can be dedicated to guiding students in their research activities. A good research environment requires more than just funds and equipment; it also requires time and people. Lacking these elements, sustaining the quality of scientific mentorship is challenging.

These difficulties are compounded by the fact that the student-to-faculty ratio at UM is also high. This means that each faculty member supervises many more students in their research than at institutions such as UTM, which has a ratio of about 15:1 (Universiti Teknologi Malaysia, 2024). This difference implies that the possibility of offering personalised guidance in scientific research is severely limited at UM. Lack of space and an excessive number of students create a challenge for faculty members to discuss research, provide individual consultations, or supervise students' work. With such pressures in place, universities like UM are likely to experience high student-to-faculty ratios, which may further dilute the quality of scientific education and research, thereby creating a need for strategic changes in the management of educational and research resources.

In contemporary society, most universities face pressure from management to increase the number of students to boost their revenues (Bileviciute et al., 2019). However, this policy often overlooks the long-term implications for the quality of education. High student-to-faculty ratios, prevalent in most universities, pose a significant threat to the quality and credibility of universities. In the student-to-faculty ratios at renowned universities, it is evident that Caltech and MIT have a ratio of 3:1. This means that students receive sufficient attention from the faculty, discussions are more in-depth, and the feedback students provide is more effective. Other renowned universities, including Harvard University and Stanford University, have student-to-faculty ratios of 7:1, and Yale University has a 6:1 ratio. The ratios in large universities, such as Oxford and Cambridge, are slightly higher at 11:1 and 10:1, respectively (California Institute of Technology, Harvard University, Yale University, University of Oxford, and University of Cambridge, 2024). This is quite the opposite of the situation at UM, where the ratio of 39:1 is far from conducive to one-on-one mentoring (Universitas Negeri Malang, 2024).

To overcome these challenges, one possible solution could be to introduce more seminars as classes that are more effective in terms of interaction and knowledge acquisition. Furthermore, having graduate student mentors work with undergraduate students could also be a way to share the load and ensure that the students receive the much-needed mentorship. At the same time, faculty members can also manage their time and resources effectively.

The overcrowded academic environment has the following impacts: The first to be affected is the quality of teaching delivered in the classrooms. Lecturers are overburdened with large classes and numerous students to teach; they cannot spend quality time with their students or provide them with adequate feedback. This makes the students feel abandoned, like chicks without a hen, as they struggle to deal with complex content independently. The important student-faculty contact is reduced, and unengaging lectures take the place of meaningful class discussions. Students are often deprived of the opportunity to ask questions, discuss the material in more detail, and engage in intellectual discussions with their professors, all of which are essential aspects of the learning process.

On the other hand, faculty members are overburdened with work and are stressed and frustrated. Due to the constant stream of teaching numerous students, correcting numerous assignments, and providing consultations to numerous students, there is no time for creative and enthusiastic teaching. This not only impacts the quality of teaching but also hinders the faculty in terms of research and student training.

The poor facilities exacerbate the situation, as most classes are overcrowded, laboratories are partially completed, and libraries are small, making learning an uncomfortable experience. This scarcity of resources limits the academic process and the acquisition of skills, which is crucial in the modern school environment. It also creates unhealthy competition among students, who struggle to get attention and other necessities from the faculty. This often results in the exaggeration of grades as the sole measure of success, and students engaging in unethical practices such as cheating and plagiarism.

It is high time that appropriate strategies were employed to counter these challenges and maintain the quality of education. One strategy is categorising universities into groups based on their primary focus, such as research, teaching, or professional training. This specialisation would enable institutions to develop policies and allocate resources that best suit their strengths and align with their unique mandates.

Expanding the existing capacities through adequate training and increasing the number of faculty members is also important. This approach would make learning more engaging and interactive, thereby directly addressing the issue of faculty workload and enhancing the quality of teaching. To address the issue of large classes, utilising new technologies and innovative teaching approaches, such as the flipped classroom and project-based learning, can help increase the level of interaction and teaching quality.

Educational facilities are equally important to invest in. The availability of quality and sufficient resources, such as laboratories, libraries, and a proper learning environment, will significantly enhance the learning process. Digital resources enhance self- and group learning, which is very important in today's society. Government support, including additional funding and encouragement of new approaches to teaching and research, is also required. Industry collaborations can also help reduce the amount of theory taught in the classroom and provide students with practical experience.

Ultimately, it is time for the education sector to return to its core purpose, which is to shape the minds and character of people rather than solely prepare them to earn money. Universities must focus on providing an education that will equip students to reason and become responsible citizens. Education should not be merely an exchange of goods; it should be a transformative process that positively impacts the lives of students and society. From a philosophical perspective, education is a long-term investment in a society's intellectual and moral capital. Universities must move beyond a utilitarian approach focused solely on financial gain and instead recommit to their core mission: fostering the growth of people's minds and character. In this way, education will transcend mere transactions and become a transformative force, shaping the nature of individuals and societies. It is imperative to take action now to ensure that universities remain where people can grow and gain knowledge, not just institutions where they can earn degrees.

15.8 Implications for Future Pedagogies

The findings from this reflective analysis imply that incorporating life-based learning principles into the mentorship of graduate students in scientific research can be highly beneficial (see Fig. 15.1). LBL makes education more practical and relevant by closing the gap between theoretical knowledge and practical application. Students participating in interdisciplinary projects and experiential learning acquire technical competencies and develop crucial problem-solving skills, critical thinking abilities, and a deeper understanding of the interconnected nature of different fields (Beemt et al., 2020).

For the further development of effective pedagogy, the principles of LBL should be considered a priority in the curriculum and mentor programs. Integrating educational practices with the requirements of modern research helps students become better prepared for the complex and multifaceted professions they will encounter in the future. By adopting LBL approaches, universities can develop effective and engaging learning environments that closely mimic real-world conditions, equipping students with the necessary skills and mindset to thrive in their future careers. This holistic approach to education, which combines theoretical knowledge with practical application, can significantly enhance the overall quality of graduate student mentorship in scientific research.

15.9 Conclusion and Future Directions

This paper aims to discuss the topic of student mentorship in scientific research, focusing on its significance for students' academic and career development. The findings underscored the need for individual support, collaboration with other disciplines, and the use of LBL approaches to enhance students' resilience, creativity,

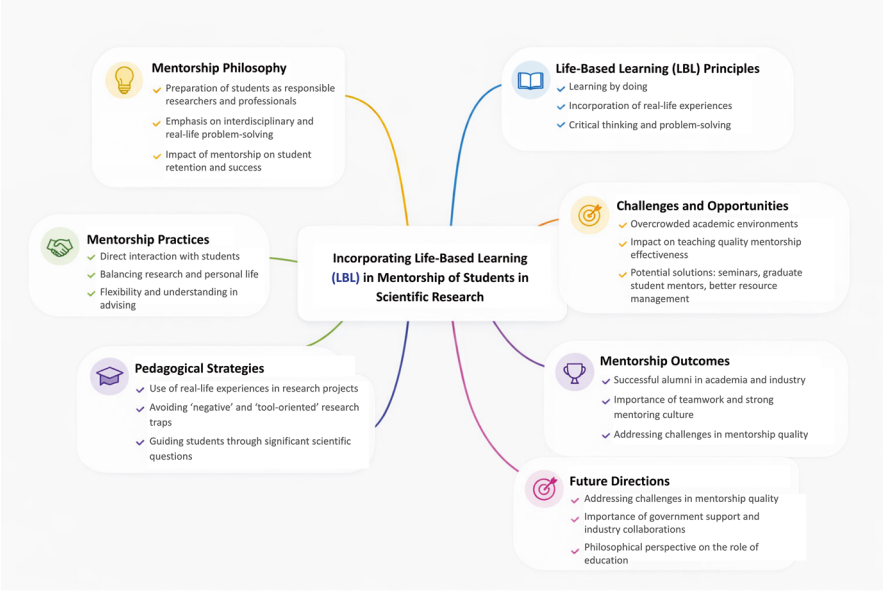

Fig. 15.1 Integrating life-based learning (LBL) into the mentorship of students in scientific research

and critical thinking. Additionally, the study reveals that mentors face significant barriers to effective mentorship, particularly when working in institutions with high teaching loads and limited resources. The study emphasises the importance of a conducive research environment, sufficient facilities, and a balanced workload distribution to maintain the quality of mentorship and student support.

Mentorship supplemented with LBL principles is essential for forming graduate students' academic skills and ethical and professional qualities. LBL principles enable students to apply the knowledge they have acquired in practice, which helps them solve complex problems in their future work. Such an approach helps to develop an understanding of the scientific method, stimulates creativity, and instils a sense of purpose in students. Mentorship that includes LBL principles prepares students for professional practice, enabling them to be productive citizens.

One must consider the potential benefits of mentorship for students and their future work and achievements. Such mentorship experiences may significantly influence students' career paths, and understanding how this process works could provide valuable insights into current practices. This requires longitudinal research designs to follow up on the mentees' progress and assess the impact of mentorship on outcomes and productivity in various fields.

Further studies should also examine the various forms of mentorship that can be implemented, particularly in developing nations. Such models could include reducing large lecture-style classes or utilising graduate student mentors to assist with undergraduate research, thereby spreading the load of mentors more evenly.

Additionally, universities should explore how technology can enhance the concept of mentorship, particularly in settings with high student-to-faculty ratios or those utilising distance learning. Some of these technologies or platforms could be incorporated to enhance mentorship delivery, allowing mentors to easily stay in touch with their students, even when the student-mentor ratio is high or physical contact is impossible.

Moreover, future studies should examine how mentors' practices contribute to diversity and inclusion in science. Supervisors should encourage the use of flexible and understanding strategies that take into account students' diverse backgrounds. Institutions should ensure that they provide intensive training and support to mentors, enabling them to incorporate the principles of LBL into their mentoring practices. By addressing these areas, student mentor mentoring can improve; thus, mentorship remains an effective means of building future scholars and professionals.

15.10 Recommendations for Further Development in Student Mentorship in Scientific Research

Here are some recommendations, from my perspective, to improve student guidance in scientific research:

- Mentors require training to enhance graduate student mentorship. This training should enable them to apply life-based learning principles and interdisciplinary approaches to mentoring. In this way, mentors can provide more comprehensive and appropriate advice, which will help students navigate the multifaceted challenges of learning and work.
- Implementing policies that allow for more flexible management of faculty workload and student-to-faculty ratios is essential. One effective strategy could involve increasing the number of faculty through targeted recruitment and providing intensive training for educators. Additionally, restructuring class formats to include more seminars and smaller, interactive sessions would enable deeper engagement between students and faculty, thereby promoting a more personalised and practical educational experience.
- Education also requires investment in schools, libraries, computers, and other research equipment and tools. Such investments would help develop the concepts of experiential learning, interdisciplinary research, and projects. This approach helps develop problem-solving skills and enables students to apply their knowledge in practice.
- Encourage interdisciplinary activities. These projects enable students to practice the interdisciplinary nature of their fields and encourage them to develop creative solutions. Interdisciplinary work also enables students to broaden their perspective and learn how to tackle multifaceted issues using diverse approaches.

- Developing a research environment that focuses on students' needs is also necessary. Universities should implement mechanisms that enable students to manage their time effectively and be productive in both their academic studies and personal lives.
- Universities should optimise the student learning experience by balancing enrollment with available resources, ensuring appropriate class sizes, and providing well-supported faculty and facilities. Prioritising quality over quantity in admissions and resource allocation will enhance students' educational satisfaction and engagement.
- It is essential to ensure that technology supports the mentorship process, especially when physical contact is not possible. Technology can ensure that students are supported and guided, irrespective of location and physical barriers.

These recommendations can help universities improve the quality of student mentoring during scientific research. This, in turn, will help nurture future scholars who will be well-equipped to make significant strides in their respective disciplines.

It is time for the education sector to return to its core purpose, which is to shape the minds and character of people rather than solely prepare them to earn money. Universities must focus on providing an education that will equip students to reason and become responsible citizens. Education should not be merely an exchange of goods; it should be a transformative process that positively impacts the lives of students and society. From a philosophical perspective, education is a long-term investment in a society's intellectual and moral capital. Universities must move beyond a utilitarian approach focused solely on financial gain and instead recommit to their core mission: fostering the growth of individuals' minds and character. In this way, education will transcend mere transactions and become a transformative force, shaping the nature of individuals and societies. We must take action now to ensure that universities remain where people can grow and gain knowledge, not just institutions where they can earn degrees.

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