

The Pedagogical and Ethical Relationship Between Student Researchers and Supervisors: Essential Elements and Best Practices

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Abstract:

This article explores the ethical and pedagogical relationship between student researchers and their supervisors. This relationship is based on essential elements such as guidance, support, effective communication, collaboration, compliance with ethical regulations, and academic integrity. By respecting these elements, they can promote ethical and transparent research practices, ensuring the credibility and reliability of research and fostering a culture of academic integrity. It is crucial to recognize the responsibilities of both parties, prioritize honest communication, and make ethical decisions. This article is relevant to researchers, educators, and students interested in promoting ethical and transparent practices, academic integrity, and collaborative relationships.

Keywords: Student Researchers; Supervisors; Pedagogical Relationship; Ethical Relationship.

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1. Introduction:

Research is an essential component of academic life, and it provides opportunities for students to engage in the production of new knowledge and the development of skills necessary for their future careers. Engaging in research projects allows students to gain practical experience in conducting research, developing research questions, collecting and analyzing data, and communicating their findings effectively. Research projects can also lead to opportunities for collaboration with other researchers, exposure to new ideas and approaches, and the possibility of publication in academic journals.

However, doing research projects in the Algerian university system may bring a number of complications, particularly for students lacking in this area competence. Many students struggle with choosing appropriate research subjects, managing the complexities of data gathering and processing, and effectively expressing their findings. Inexperienced students may also need assistance in comprehending the ethical and regulatory elements of their study, which includes activities such as gaining informed permission from participants, maintaining anonymity, and following to norms preventing research misconduct.

Addressing these challenges is critical in the Algerian university context, prompting the question: What are the critical issues impacting the pedagogical and ethical relationship between student researchers and supervisors in the Algerian university, and how can these issues be effectively addressed to promote ethical and transparent research practices and uphold academic integrity?

To overcome these obstacles, students often seek the advice and assistance of their supervisors. Adequate supervision is essential in ensuring that research initiatives are carried out ethically, transparently, and in accordance with applicable legislation and norms. Supervisors play an important role in providing significant insights into study design, data collection and analysis, and results sharing. Furthermore, they give critical assistance and guidance to students, assisting them in the development of their research abilities. This joint initiative seeks to foster ethical research practices and academic integrity within Algeria's university scene.

2. Pedagogical Relationship between Student Researcher and Supervisor:

The pedagogical relationship between a student researcher and supervisor refers to the dynamic and ongoing interaction between the student researcher and the supervisor during the research process. It involves a complex set of interactions that include communication, guidance, support, and feedback from the supervisor to the student researcher. The pedagogical relationship between the student researcher and the supervisor is essential for the success of the research project. According to Hancock and Algozzine, the supervisor's primary role is to provide guidance and support to the student researcher. This includes support in several aspects of the research process, such as formulating a study strategy, conducting data collecting and analysis, and interpreting the obtained findings. In addition, the supervisor needs to provide an environment that promotes critical thinking, the questioning of assumptions, and the cultivation of innovative ideas within the student researcher.(Hancock, Algozzine, & Lim, 2021) It involves mentoring and guidance in various aspects of the research process, including the following elements:

2.1. Guidance and Support:

Guidance and support are essential elements of the pedagogical relationship between student researchers and supervisors. Effective supervisors provide guidance and support to their students through mentorship, providing feedback, and helping them develop research skills.(Mainhard, 2009) Supervisors who are supportive and provide guidance have been found to impact students' academic and career outcomes(Holdaway, 1995)

Guidance and support can take many forms in the pedagogical relationship between student researchers and supervisors. These may include emotional support, guidance on research methods and design, feedback on written work, and assistance in navigating academic and professional networks (Abiddin, 2011):

2.1.1. Mentoring Support:

Effective mentoring involves providing guidance and support as the student researcher develops their research skills and knowledge. This might include helping the student to identify research questions, develop a research plan, and establish realistic timelines and milestones (Lee, 2008). Mentoring is “a developmental relationship whereby a mentor, with more experience, engages with a less experienced partner” to facilitate the latter's personal and professional advancement. In the context of research, effective mentoring can help students develop the skills and knowledge necessary to conduct research and contribute to the field (Kram, 1985). For example, an Algerian supervisor engages in mentoring support by guiding the student researcher in formulating a culturally sensitive research question related to the topic "The symbolism of women's clothing and its connection to sexual harassment in Algerian society: A practical study in Jijel City, Algeria". The supervisor advises on how to navigate the delicate nature of the topic within the local context, assists in designing a study that respects cultural nuances, and helps the student researcher select appropriate research methods that align with Algerian societal norms.

2.1.2. Feedback Support:

Feedback is an important part of the research process since it helps students grow their research abilities and knowledge. Feedback should be helpful and explicit, giving the student clear direction on how to enhance their study (Mainhard, 2009). Specific criticism gives students specific direction on how to enhance their study and identify areas for improvement (Carless, 2018). For instance, the Algerian supervisor provides feedback support by reviewing a draft research paper on the symbolism of women's clothing and its relationship to sexual harassment in Algerian society. The feedback addresses the paper's structure, considering the academic conventions and cultural sensitivities specific to Algeria. The supervisor provides insights on enhancing the clarity of writing, ensuring the language used is culturally appropriate, and evaluates the strength of arguments within the context of Algerian societal norms.

2.1.3. Resources Support:

The supervisor may assist the student in locating and gaining access to appropriate resources, such as funding possibilities, research databases, and academic publications. Supervisors from all disciplines identified four necessary technical competences for supervising doctorate students, including the capacity to utilize resources such as databases, computers, and scientific equipment (Halse, 2010). For example, the supervisor assists a student researcher in accessing resources relevant to the study on the symbolism of women's clothing and its relationship to sexual harassment in Algerian society. The supervisor guides the student on conducting searches for literature that specifically addresses the Jijilain cultural context, offers assistance in accessing full-text articles from local databases.

2.1.4. Emotional support:

The supervisor should be approachable and supportive, providing emotional support as well as academic guidance. This can help to build the student's confidence and engagement in the research process (Sidhu, 2014). For example, the supervisor recognizes that the student researcher exploring the symbolism of women's clothing and its relationship to sexual harassment may face emotional challenges. The supervisor provides emotional support by

offering words of encouragement that acknowledge the sensitivity of the topic within the Algerian cultural context.

Practical guidance and support from supervisors can benefit student researchers in many ways. For example, students who receive practical guidance and support are more likely to complete their graduate programs on time, publish their research, and secure academic and professional positions after graduation. (Golde, 2005) Practical guidance and support can have a significant positive impact on student's academic and career outcomes.

2.2. Importance of Effective Communication:

Open and honest communication promotes a positive and productive relationship and helps to ensure that students receive the guidance and support they need to succeed in their research (Abiddin, 2011). Effective communication is essential when providing feedback, as students rely on feedback from their supervisors to improve their research and writing skills. (Holdaway, 1995)

There are several strategies that supervisors can use to ensure effective communication with their student researchers. (Abiddin, 2011) These include:

2.2.1. Regular meetings:

Regular meetings between the student and supervisor are an essential aspect of the research process. Regular meetings ensure that the student and supervisor are on the same page and can discuss any issues or concerns as they arise (Woolhouse, 2002). Regular meetings can also promote accountability and motivation among students. By setting regular meeting times, students are more likely to stay on track and make progress toward their research goals (Gardner, 2007). For example, In the context of the study on the symbolism of women's clothing and its connection to sexual harassment in Jijel City, Algeria, a supervisor and student researcher hold regular weekly meetings to discuss the progress of the research project. During these meetings, the supervisor provides valuable feedback on the student researcher's work, addresses any questions they may have, and assists in keeping them on track with their research goals.

2.2.2. Clear expectations:

Clear communication between the student and supervisor is essential for the success of a research project. Both parties must have a clear understanding of the expectations and goals for the project. This includes understanding the research question, the scope of the project, the methodology, and the expected outcomes. (Lee, 2008).

Having a clear understanding of expectations and goals can help to avoid misunderstandings or miscommunications later on in the project. For example, suppose the supervisor provides a detailed research plan to the student researcher at the project's outset. This plan outlines critical elements such as the research question, methodology, expected outcomes, and a timeline for completion. By providing such clear expectations, the supervisor ensures that the student researcher comprehensively understands their role and the project's objectives, fostering a focused and purposeful approach toward achieving the desired outcomes within the specific cultural and societal context of Jijel City. However, the student needs to be made aware of these expectations. In that case, it can lead to clarity and delays in the project.

By clearly communicating expectations and goals at the beginning of the project, both the student and supervisor can ensure that they are on the same page and working towards the same outcomes.

2.2.3. Active listening:

Active listening is a critical component of effective communication and can help to facilitate a more productive and collaborative relationship between the student and supervisor. Both the student and supervisor should strive to listen to each other during meetings and discussions actively. (Woolhouse, 2002). Active listening involves entirely focusing on the speaker, providing feedback, and demonstrating an understanding of what the speaker is saying. This helps ensure that both parties are fully engaged in the conversation and can contribute to a more productive and collaborative relationship.

For instance, in the practical study on the symbolism of women's clothing and its connection to sexual harassment in Jijel City, Algeria, the supervisor actively listens to the student researcher's concerns about the project. The supervisor engages in a collaborative dialogue, asking questions to clarify the researcher's concerns, providing constructive feedback on potential solutions, and working together to address any challenges. By practicing active listening, the supervisor demonstrates commitment to the success of the student researcher within the unique cultural and social dynamics of Jijel City, fostering an environment conducive to overcoming challenges.

2.2.4. Timely feedback:

The supervisor should provide timely feedback on the student's work, and the student should be receptive to this feedback (Pickering, 2014). Providing timely feedback is an essential part of adequate supervision in education. Feedback is "an integral aspect of the learning process" that helps students reflect on their work and make necessary improvements (Carless, 2018). For example, In the study in the context of Jijel City, a supervisor ensures timely communication by providing feedback on the student researcher's draft research paper within a week of receiving it. The feedback includes comments on the paper's structure, clarity of writing, and strength of arguments, aligning with the cultural sensitivities and academic expectations specific to Jijel City. By offering prompt and constructive feedback, the supervisor aids the student researcher in enhancing the quality of their research and writing, maintaining alignment with the research goals, and addressing any cultural considerations inherent to the study's location.

2.2.5. Written communication:

Written communication, such as email or shared documents, can be a helpful tool for keeping both the student and supervisor informed and up-to-date on the progress of the research project (Finn, 2005, p. 50). For example, In the practical study on the symbolism of women's clothing and its connection to sexual harassment in Jijel City, the supervisor utilizes written communication by providing detailed feedback in writing on the student researcher's research proposal. The written feedback encompasses comments on crucial aspects such as the research question, the methodology, and the expected outcomes. By employing written communication, the supervisor ensures that the student researcher possesses a documented record of the feedback, allowing them to reference and reflect on it as needed.

Effective communication between student researchers and supervisors can have many benefits. It can improve the quality of the research produced, enhance the student's learning experience, and foster a positive and productive working relationship between student and supervisor (Holdaway, 1995). Effective communication also helps to ensure that students receive the guidance and support they need to complete their research projects successfully.

2.3. Importance of Collaboration:

Collaboration involves working together to achieve common goals, and it can help to improve the quality of the research produced by the student (Kamler, 2014). Collaboration also helps to build trust and mutual respect between student and supervisor, which can enhance the student's learning experience (Cooper, 2017).

There are several strategies that supervisors can use to promote collaboration with their student researchers. These include:

2.3.1. Socialization into the Community:

The conventional understanding of socialization in a community involves the transformation of a newcomer into a member of said community. In the context of doctoral students, this pertains to their integration into a community of researchers within a particular field of study. This integration process encompasses the assimilation of the community's regulations, customs, and operational methods (Sala-Bubaré, 2017). The student can benefit from the guidance of their supervisor in actively pursuing opportunities to enhance their professional standing and broaden their professional connections. This can be achieved by cultivating relationships with fellow researchers in their discipline and making deliberate choices regarding their involvement in academic communities, such as attending conferences, joining associations, and engaging in research initiatives (Sala-Bubaré, 2017).

2.3.2. Knowledge and Experience Sharing:

Collaboration between student researchers and supervisors can facilitate the sharing of knowledge and expertise, helping to broaden and deepen the student's understanding of the research process in positive and productive ways. Students who co-supervised two or more 'official' supervisors who brought varied expertise to the relationship, for example, may have had distinct areas of knowledge within the same subject or could have crossed disciplines (Pole, 1997).

2.3.3. Skill Development:

Collaboration is an essential component of research and can be beneficial for both the student and supervisor. Collaboration can develop the students' research skills by providing opportunities to work on research projects with their supervisor or other researchers in the field (Pole, 1997). Working collaboratively can provide the student with access to resources and expertise that they may not have otherwise, which can help to develop their research skills and knowledge. Additionally, collaborating with others can provide the student with the opportunity to learn from their peers and to receive constructive feedback on their work, which can help them to improve their research skills over time.

2.3.4. Collaborative Approaches:

Collaboration can also foster innovation in the research process by providing opportunities to bring together different perspectives and approaches. This particular kind of relationship may have included consistent and frequent interaction between the student and supervisor (Pole, 1997). Through collaboration, students can benefit from the expertise and knowledge of their supervisor while also bringing their ideas and perspectives to the research process. This can lead to new and innovative approaches to research questions and can advance knowledge in the field.

2.3.5. Cohorts Enhancing Creativity:

The use of cohorts facilitates collaborative work, the exchange of ideas, and the cultivation of a supportive learning environment. The incorporation of this practice was integrated into the workshops and persisted throughout the research process and subsequent

phases. Self-help groups and important friendships are established as a result of the workshop program and continue to provide support during and beyond the research process. Cohorts play a crucial role in supporting participants by enhancing their motivation, sustaining their momentum, offering constructive feedback on ongoing work, and giving evaluations of both evolving and final drafts of written content. (Santicola, 2013).

Collaboration by cohorts can enhance creativity in the research process by bringing together diverse perspectives and encouraging the exchange of ideas. This can lead to new and innovative research outcomes.

2.3.6. Building Trust and Respect:

Collaboration may foster trust and respect among student researchers and supervisors, which is critical for fostering a healthy and productive research environment. Increase trust and respect, which will result in a more favorable and fruitful study experience for all sides. Understanding the significance of trust and respect and how they may effect cooperation, building a collaborative research culture framework, and showing its implementation in higher degree research (HDR) may help researchers identify and address challenges more readily (Gasson, 2019).

Collaboration between student researchers and supervisors can have many benefits. It can lead to higher-quality research outcomes, as students can benefit from the expertise and guidance of their supervisors (Holdaway, 1995). Collaboration can also enhance the student's learning experience, as it encourages active engagement in the research process and promotes critical thinking and problem-solving skills (Kamler, 2014).

3. Ethical Relationship between Student Researcher and Supervisor:

The supervisor is responsible for ensuring that the research project follows ethical rules and regulations while preserving the rights and welfare of study participants. In addition, the supervisor should urge the student researcher to think about ethical concerns that may emerge throughout the research project, such as informed consent, confidentiality, and privacy. When unclear about ethical difficulties that may develop during the research study, the student researcher should seek help from their supervisor. The student researcher should also be honest and clear about their research methodology, data collecting, and analysis, according to the highest academic integrity standards.

The National Health and Medical Research Council (2018) outlines ethical considerations in quality assurance and evaluation activities, emphasizing the importance of informed consent, confidentiality, and privacy. The council also stresses the need for researchers to consider the potential harms and benefits of the research project and to minimize any potential harm to research participants.(Council, 2007 (Updated 2018)) The ethical relationship between the student researcher and supervisor involves the following elements:

3.1. Ethical Guidelines and Regulations:

This element ensures that research is conducted ethically and that the rights and welfare of research participants are protected. Adherence to ethical guidelines also promotes transparency and accountability in research and can help to build trust between researchers and the public (Smith et al., 2020).

The Belmont Report, the Helsinki Declaration, and the Common Rule are among the ethical rules and regulations that regulate research. These standards provide principles for the ethical conduct of human subjects research, such as informed consent, confidentiality, and the protection of vulnerable groups (Health, October 1, 2012) :

3.1.1. Maintaining research integrity:

Adherence to ethical guidelines and regulations is critical for maintaining research integrity and ensuring that research is conducted in a responsible and trustworthy manner. This is particularly important when working with human subjects, where ethical considerations around informed consent and confidentiality are paramount (Kretser, 2019). In the practical study on the symbolism of women's clothing in Jijel City, Algeria, the student researcher upholds research integrity by ensuring responsible and trustworthy conduct. Adherence to ethical guidelines involves obtaining informed consent from participants, prioritizing their privacy and confidentiality, and minimizing potential risks. The student researcher commits to academic honesty and integrity, avoiding plagiarism and meticulously citing sources to maintain the highest ethical standards throughout the research process.

3.1.2. Transparency and Accountability:

This encompasses the ethical treatment of research participants, the responsible conduct of research, and the use of research funds (Bretag, 2016, p. 120). Misconduct, which transpires when public funds are misapplied or squandered on research founded upon erroneous or fabricated studies, constitutes a breach of accountability (Bretag, 2016, p. 57). In the context of the previous topic research in the Jijel City study, the student researcher fosters transparency and accountability by providing a comprehensive description of the research methodology. This includes explicit details on research design, data collection methods, and data analysis techniques. Keeping meticulous records of the research process, including any modifications to the design or methodology, ensures transparency and accountability. These practices guarantee ethical conduct and compliance with regulations throughout the research endeavor.

3.1.3. Protecting research participants:

Adherence to ethical guidelines and regulations is essential for protecting the welfare and rights of research participants (Bretag, 2016, p. 25). This includes ensuring that participant's privacy and confidentiality are protected and that they are not subject to any harm or undue influence (Bretag, 2016, p. 56). Ensuring participants comprehend the research purpose, associated risks and benefits, and their right to withdraw is a key aspect. Privacy and confidentiality are safeguarded through the use of pseudonyms or codes to identify participants and secure data storage. This commitment to participant protection aligns with ethical standards and regulatory compliance, ensuring the research is conducted with the utmost integrity.

3.1.4 Informed consent:

All participants were furnished with guidance notes and "informed consent" information prior to submitting their responses. Prior to analysis, the data underwent anonymization through the inclusion of participant and institutional codes. The secure intricacies of the coding process were kept distinct from the anonymized responses (Bretag, 2016, p. 5). This entails furnishing participants with comprehensive details regarding the research and securing their voluntary and well-informed consent to partake.

In the study on the symbolism of women's clothing in Jijel City, the student researcher secures informed consent by providing participants with a thorough explanation of the research purpose, procedures, risks, and benefits. Encouraging questions and emphasizing the right to withdraw at any point ensures participants' full understanding and voluntary consent. This commitment to obtaining informed consent underscores the ethical foundation of the research, acknowledging participants' autonomy and awareness.

3.1.5. Confidentiality:

Protecting study participants' confidentiality entails taking precautions to guarantee that participants' personal information is kept secret and not given to unauthorized parties. This includes, among other things, determining what information may be released and to whom. Who should be safeguarded? Why? What measures should be employed to safeguard data at different phases of research? How should we keep research materials safe? Because of their vulnerability to damage, these concerns seem to be especially important in the case of vulnerable individuals (Surmiak, 2018).

To safeguard participants' confidentiality in the research study about the symbolism of women's clothing in Jijel City, the student researcher employs pseudonyms or codes for participant identification and ensures secure data storage. Access to data is restricted to authorized personnel only, and stringent confidentiality measures are implemented. By prioritizing confidentiality, the student researcher establishes an environment where participants' privacy is respected, fostering a sense of trust and comfort in sharing their experiences.

3.1.6. Personal Data Breach:

The primary goal of any personal data regulation is to prevent the occurrence of privacy risks, specifically the occurrence of a "personal data breach," which is defined as a security breach that results in the accidental or unlawful destruction, loss, alteration, unauthorized disclosure of, or access to, personal data transmitted, stored, or otherwise processed (Chassang, 2017). In preventing personal data breaches within the previous Jijel City study, the student researcher focuses on secure data storage and limited access. Personal information is handled confidentially, and data is anonymized or pseudonymized to protect participant privacy. These measures align with regulations and ethical standards, ensuring that participants' personal information remains secure and reinforcing their confidence in sharing experiences for the research.

Supervisors have a responsibility to ensure that their student researchers are aware of and adhere to ethical guidelines and regulations. This includes providing guidance on the ethical conduct of research, monitoring research activities to ensure compliance, and addressing any ethical concerns that arise during the research process (Committees, 5/26/2022).

The responsibility of Supervisors for research ethics applies in all stages of a project, from conceptualization to completion. The responsibility includes research ethics in a broad sense – from co-authorship and data sharing to integrity and social responsibility (Committees, 5/26/2022).

3.2. Aware and Considering Ethical Issues:

Ethical issues can arise at all stages of the research process, and student researchers and supervisors need to identify and address them in a timely and appropriate manner. Failure to consider ethical issues can have severe consequences for research participants and can undermine the integrity and credibility of the research. Several ethical issues may arise in research, including:

3.2.1. Avoidance of harm:

This includes minimizing risks associated with research participation and taking steps to ensure that participants are not subjected to unnecessary harm or discomfort. Harm can be either unintentional (non-negligent) or negligent. At the same time, non-negligent harm might be regarded as bad luck or one of the risks we all encounter. While negligent or deliberate harm involves some level of culpability (the excellent researcher must have avoided it) (Shaw, 2006). Ethics and governance committees involved in approving research have an important role in

conceptualizing what constitutes harm, giving importance to reducing risk to participants (Shaw, 2006). Consideration of the risk of harm is integral to high-quality research.

3.2.2. Deception:

Ethical considerations in research encompass the implementation of suitable and considerate data acquisition methods, as well as the safeguarding and well-being of research participants. Ensuring the integrity of research is contingent upon the avoidance of any form of deception towards participants. Deception takes place when research participants are provided with inaccurate or misleading information or are not adequately informed about the purpose or nature of the study (Code, 2017).

Examples of research deceptions (Code, 2017):

(a) Conduct a study involving deception exclusively after establishing that the study's substantial prospective scientific, educational, or applied value justifies the use of deceptive techniques and that effective non-deceptive alternative procedures are impracticable.

(b) It is imperative to avoid misleading potential participants regarding research that has the potential to induce severe emotional distress or physical suffering.

(c) Inform participants of any deception that is an inherent aspect of the experiment's design and execution at the earliest opportunity, preferably prior to the conclusion of their involvement but no later than the conclusion of data collection; additionally, provide them with the option to rescind their data.

3.2.3. Social responsibility:

Ethical concerns in research encompass not only the safeguarding of research participants from injury, but also a dedication to upholding social responsibility. This includes ensuring that the hazards and benefits of research are distributed fairly and that its conduct benefits society (David B. Resnik, December 23, 2020).

Understanding that is produced through research has the capacity to enhance human welfare, health, and quality of life. Nonetheless, it is imperative for scientists to take into account the possible hazards and expenditures linked to their investigations and guarantee that they do not have an unjust impact on particular populations or groups (Emanuel, 2004). There are two distinct benchmarks that are applicable: Prior to anything else, the risk-benefit ratio for individuals must be favorable given their living environment. In a similar vein, communities where the prospective value of the research is lesser may perceive the risk-benefit ratio for a specific study as unfavorable, while it may be favorable in communities where the social value of the research is high (Emanuel, 2004).

Additionally, it is crucial that the risk-benefit ratio for the community is positive. The risks and prospective benefits for the community should be considered when determining whether the risks are acceptable in comparison to the benefits that will result from the research's conduct and findings. Individuals who are well-informed about other studies ought to validate this decision (Emanuel, 2004).

3.2.4. Cultural sensitivity:

Ethical considerations in research require researchers to be culturally sensitive and to respect the cultural backgrounds and beliefs of research participants. This involves recognizing and understanding research practices and outcomes, as well as being aware of cultural biases and stereotypes that can influence research design and interpretation (Sue, 2022, p. 49).

To promote cultural sensitivity in research, researchers must ensure that their research designs and methods are appropriate for the cultural context in which the research is conducted, including the language used in research instruments and procedures. Additionally, researchers should take into account the potential cultural barriers that may limit participants' ability to fully engage in the research process and take steps to address them. Finally, researchers should

engage in ongoing reflection and dialogue with participants to ensure that their research is culturally appropriate and sensitive (Sue, 2022, p. 62/322/357).

3.2.5. Conflict of Interest:

A conflict of interest may occur when an individual or organization finds themselves in a scenario where their research-related tasks or responsibilities clash with their personal, institutional, or other interests, whether these conflicts are genuine, hypothetical, or only imagined. The interests mentioned above include several aspects, such as business, commercial, or financial matters, that are relevant to the institution or the person. These interests may involve the individual's family members, acquaintances, or their previous, present, or potential professional connections (Research, 2014, p. 93).

Researchers need to disclose and manage any conflicts of interest that may arise during the research process. Conflicts of interest occur when researchers have financial or other interests that could influence the outcome of their research. Such conflicts can lead to biased research results that may undermine the credibility and validity of the research findings (Amiri, 2014).

3.3. Academic Integrity:

Academic integrity refers to the ethical principles and values that underlie scholarly work, including honesty, trust, respect, and responsibility (McCabe & Trevino, 1993). It involves:

3.3.1. Plagiarism:

Plagiarism encompasses the act of using ideas, language, or creative output from other sources without appropriate acknowledgment. The act of plagiarizing, which involves appropriating ideas from literary works, may be traced back to the 15th century. However, the question of whether borrowing an idea constitutes plagiarism in the same manner as directly copying words from other published sources remains unresolved (Brown, 2017). Plagiarism needs to be related to several factors, which she lists as “extent, originality of copied material, position/context, referencing/attribution, intention, author seniority and language” (Brown, 2017).

3.3.2. fabrication:

Academic misconduct refers to the deliberate and unauthorized act of falsifying any material or citation within the context of an academic endeavor. Fabrication encompasses several actions, including the creation of fictitious sources for the bibliography, the manipulation of data in laboratory work, and the composition of a lab report without doing the corresponding experiment (Whitley Jr, 2001, p. 17/39). Such behaviors compromise the integrity of research and undermine the trust and credibility of the academic community. Researchers must avoid fabrication by ensuring that their work is based on sound and verifiable data, and they should report any errors or discrepancies promptly to their supervisors or peers to maintain academic integrity.

3.3.3. Authorship:

Another point that is closely connected pertains to the criteria for determining authorship status for individual contributors, and this matter is often subject to debate. The authorship guidelines established by prominent organizations in the biomedical field, such as the International Committee of Medical Journal Editors (ICMJE) and the Committee on Publication Ethics (COPE), primarily address the identification of authors and the procedures for resolving authorship disputes and making corrections (Brand, 2015). For example, the authorship guidelines of Harvard Medical School stipulate that those who have made significant intellectual contributions to a piece of work should be acknowledged as authors. In a

similar vein, the Proceedings of the National Academy of Sciences (PNAS) stipulate that authorship should be restricted to those who have made significant contributions to the research endeavor (Brand, 2015).

3.3.4. Intellectual Property:

Respecting the intellectual property rights of others and avoiding infringement of those rights. Legal protection applies to the intellectual property of any creation, work, or any other form of expression resulting from any mental activity (thought, conception, materialization). This protection grants the author the right to control the use of their creation and to derive benefits, both moral and material, from its use by others. The protection of intellectual property occurs legally through (1) copyright, (2) patented invention, and (3) registered trademarks (Căruntu, 2018, p. 44).

3.3.5. Proper Citation:

Many students, especially international students, inadvertently plagiarize because they need an understanding of the conventions of citation and documentation, which includes providing accurate and complete information about the sources used in a research project (Busch, 2014).

Academic integrity is essential to the credibility and trustworthiness of research, and it is a fundamental principle of the research enterprise. It ensures that research is conducted ethically and transparently and that the contributions of all researchers are correctly recognized and valued (Robert Sowell, 2008).

4. Conclusion:

The pedagogical and ethical relationship between student researchers and supervisors is a critical component of the research enterprise. This relationship is built on several essential elements, including guidance, support, effective communication, collaboration, adherence to ethical guidelines and regulations, consideration of ethical issues, and academic integrity. Each of these elements plays a crucial role in promoting ethical and transparent research practices, ensuring the credibility and trustworthiness of research, and fostering a culture of academic integrity.

Guidance and support are crucial in the student-supervisor relationship, as student researchers require ongoing mentorship and guidance throughout the research process. Effective communication is also critical, as it enables student researchers and supervisors to work together effectively, share ideas, and resolve conflicts. Collaboration is another essential element, promoting teamwork, mutual respect, and the sharing of knowledge and resources.

In addition to these pedagogical elements, the ethical relationship between student researchers and supervisors requires a commitment to upholding ethical guidelines and regulations, considering ethical issues in research, and promoting academic integrity. Adherence to ethical guidelines and regulations ensures that research is conducted in a manner that is consistent with ethical standards and legal requirements. Consideration of ethical issues requires an awareness of the potential ethical implications of research and a willingness to address them responsibly and ethically. Academic integrity, meanwhile, is essential for ensuring the honesty, transparency, and integrity of research and for promoting the highest standards of scholarship.

By upholding these elements, student researchers and supervisors can work together to promote ethical and transparent research practices, ensure the credibility and trustworthiness of research, and foster a culture of academic integrity. Both student researchers and supervisors have a responsibility to recognize the importance of this relationship and prioritize open and honest communication, mutual respect, and ethical decision-making in all aspects of their work together. Ultimately, a solid pedagogical and ethical relationship between student researchers

and supervisors is critical for advancing knowledge and promoting the highest standards of scholarship.

Both student researchers and supervisors need to recognize their responsibilities in this relationship and prioritize open and honest communication, mutual respect, and ethical decision-making in all aspects of their work together. Ultimately, a solid pedagogical and ethical relationship between student researchers and supervisors is crucial for advancing knowledge and promoting the highest standards of scholarship.

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