



Blending Ontology and Epistemology in Nursing Pedagogy

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ABSTRACT

Research in education is a systematic and scientific method of exploring different aspects to understand how learning happens and how teaching methods affect the outcomes of a learner. In order to undergo a robust research that results into meaningful conclusions, it is very crucial to understand the concept of a paradigm. In general, paradigm refers to the set of beliefs, assumptions, and principles that guide the way research is conducted within a specific discipline, fraternity, group or community. It provides a lens through which researchers see the world, decipher on methods, curate and interpret findings. In simple terms, a paradigm helps a researcher answer questions about what is real, how knowledge can be obtained, and how it can be interpreted to others depending upon the essence of the audience. Research paradigms are made up of several components that altogether results into a framework for conducting research. These components include ontology, epistemology, rhetoric, axiology, and methodology. Understanding each component is crucial because it assures that the research is structured, meaningful, and produces valid and reliable results. Each component plays a vital role in streamlining the research process, from the ideation, formulation of research questions to collection, analysis, curation and interpretation of data. This paper evaluates the usefulness of different paradigms by blending

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ontology and epistemology as well.

Concept of Research Paradigms

A research paradigm is a philosophical and methodological framework that guides researchers while they are undergoing an incessant study on the respective area. It provides a set of assumptions about reality, knowledge, and values, helping the researcher to design and conduct a study in a consistent and logical manner (Farghaly et al., 2023). Research paradigms help in clarifying how a researcher approaches their study, what kind of data they collect, and how they interpret it. They are essential in both qualitative and quantitative research.

When it comes to education, paradigms influence how we understand learning and teaching. For example, when undergoing a research on nursing students studying bachelor's degree, a researcher may ask whether lecture-based teaching, interactive methods, or constructivist approaches are most effective in helping students understand core concepts more effectively. The assumptions a researcher makes about learning, knowledge, and reality will determine the design, methods, and interpretation of the study.

In educational research, paradigms help to answer the basic queries such as what is real learning, how students learn, how they gain knowledge, what is the source, what factors influence learning, and what sort of teaching methods are effective. By providing a clear framework, paradigms help researchers to prepare studies that are consistent, ethical, and follows proper methodology.

Ontology

Ontology is related with understanding the nature of reality or to understand what is real. It answers the question of what exists and what can be known about the world or the particular aspect (Ylönen, 2023). In the context of education, ontology involves understanding the assumptions a researcher has about student learning and teaching methods. For example, one may anticipate that the way nursing students are taught directly affects how well they perceive complex concepts. This assumption is an ontological position because it reflects what the researcher believes to be real in the study.

Ontology can be either objective or subjective. An objective ontological position assumes that reality exists irrespective of perception of the humans. For instance, a researcher may believe that interactive teaching methods such as engaging students, participation, etc., help in generating better learning outcomes for all nursing students. Whereas, on another hand, regarding the subjective ontological position, at another part of the spectrum, it provides that reality can differ from person to person. In such circumstance, the researcher

could recognize that some students may like lectures better, or some may gain learning advantage more from interactive methods, and some may understand better in a constructivist learning environment. All these positions help formulate the research questions and understand how the study is conducted.

Epistemology

Epistemology is the study of generation and source of knowledge. It understands how knowledge can be attained, what can be considered as valid knowledge, and how the researcher makes it relative to the matter of study (Pérez-Jara et al., 2022). In educational research, epistemology helps the methods used to understand students' learning experiences and how effective the teaching methods are in that context.

There are various epistemological approaches that exist. Firstly, positivism is an approach that relies on measurable, quantifiable and objective data. For example, a researcher using positivism who is undergoing a research on understanding the best pedagogical method could collect scores from the exam or quantifiable assessment results from the nursing students to determine which teaching method leads to better learning outcomes. On another hand, post-positivism allows for an integration of both quantitative and qualitative methods. It acknowledges that while some knowledge can be measured objectively, understanding the essence, perceptions, and reasons behind students' learning experiences requires a sheer intervention modality, such as interviews.

Interpretivism is another epistemological approach when it comes to gaining knowledge from the source. It focuses on understanding experiences of the students from their own personal viewpoint (William, 2024). Researchers generally using interpretivism seek to understand how students distinguish different teaching methods and how these methods have an impact on their understanding level. Likewise, Post-modernism, which is followed by post-post-modernism these days generally challenges the obsolete traditional methods and encourages exploring knowledge in a more democratic manner. For example, post-modernism in education focuses that the curriculum should be responsive as per the learner and should be flexible pertaining to the ongoing requirements/need or interest. An instance can be related here as when students are allowed to critically analyze and challenge the concepts through a constructivist approach, it is one of the form of post-modernism. Another aspect is having a post-modern curriculum approach, i.e., students are provided with an option to choose their electives or area of interest during their course of study. It helps in personalized learning and enriches the knowledge of the particular student.

Rhetorology

Rhetorology refers to the way of communication that researchers follow while talking with participants to obtain meaningful information. In educational research, effective communication is important as articulation does matter (Peterson, 2021). Different methods can also be used such as the practice of persuasive language, provoking terms, instances, and also opportunity to put their side because it allows students to share their personal experiences and opinions without any hesitance. For example, when studying nursing students' preferences for teaching methods, researchers might use clear, simple language, without too much jargons or educational terminologies that is easily accustomed by the students that help in providing examples, and create an amicable environment for them to express their thoughts. Rhetorology also assures that the information or data collected from the conversation reflects the lived and prudent experiences of the participants and also make them feel that their opinions are valued, and reflected precisely in the findings.

Axiology

Axiology takes ethical consideration into account. It basically deals with values, norms, practice, etiquette and ethics in research. It also involves considering the moral principles that guide how research is conducted, for example, if someone is doing a research on smoking, it is to be considered to make their identity anonymous. In studies involving education, axiology ensures that students' personal opinion, rights, privacy, and well-being are assured. For example, nursing students should feel safe while they are sharing their opinions about teachers, methods, lectures, sessions, or the constructivist methods without fear of judgment or repercussions. Ethical considerations include asking for the consent, ensuring confidentiality, and respecting the participant's presence and words. It helps the research to be evidence-based and create a trustworthy and credible research environment.

Methodology

Methodology is the set of procedures and techniques used to conduct research. It entails how data will be collected, analyzed, curated and interpreted. When it comes to undergoing the research on how nursing students learn, methodology determines how to assess the effectiveness of different teaching methods or pedagogical approaches. This could include surveys, in-depth interviews, focus group discussions, classroom observations, team discussions, role play, or an integration of these methods. Methodology assures that the research is scientific, relevant, systematic, reliable, and is line with the objectives of the study. It also ensures that the findings are valid and can be used to understand the ongoing educational practice.

Usefulness of Different Research Paradigms

Research paradigms are instrumental because they provide a structured approach when it comes to studying and deciphering complex situations. For example, ontology helps researchers understand what is real and formulates the appropriate research questions. Epistemology helps in understanding how knowledge is attained and interpreted. Rhetorology ensures that participants communicate effectively, axiology maintains ethical standards, and methodology provides a systematic framework for conducting the study.

When it comes to undergoing a research in nursing education, the paradigms help to understand which teaching methods are most reliable. Through the use of a clear ontological position, researchers can easily identify what they firmly presume to be true about how students learn. Likewise, epistemology allows them to collect evidence in a valid, relevant and reliable way. Integrating these paradigms, it assures that the study helps in generating meaningful results that can inform teaching practices.

Usefulness of Ontology

Ontology is typically instrumental because it helps to explain the reality that the research aims to study. In this case of undergoing a research on how nursing students learn, ontology helps to identify what sort of teaching methods are considered to influence the ultimate learning outcomes. This helps the researcher to prepare reliable research questions and also formulate a study that investigates these assumptions. For example, assuming that constructivist methods improve understanding level of student as they can construct knowledge by themselves, it will guide the study toward collecting data that either justifies or opposes this assumption.

Usefulness of Positivism

Positivism is based on observation and is useful when researchers want to measure outcomes objectively by experimentation, surveys and facts. For example, during the research to understand how nursing students learn, positivism can be used to evaluate large-scale data collection, like test scores, figures from skill assessments, or attendance records to understand each pedagogical method and its value. It provides quantifiable evidence that can be compared and contrasted across different groups. However, it has a criticism or a downside that it is very rigid for social sciences and avoids human touch and emotions.

Usefulness of Interpretivism

Interpretivism is essential for understanding the essence of the participant and qualitative aspects of learning. A popular example of a fisherman who aims to understand the aspects of fish has to go into the

river and build rapport to analyze their behavior. Similarly, use of interpretivism in my research helps researchers gain insight into students' experiences, motivations, and preferences. For example, through interviews or focus groups, students can share what do you think about lectures, if it is effective or not, or interactive sessions, or constructivist educational activities. This approach helps uncover the deeper reasons behind learning success or difficulties.

Usefulness of Axiology

Axiology takes ethics into account and makes sure that the research is in adherence to the ethical standards. It protects students' privacy, ensures confidentiality, and integrity when it comes in data collection and reporting. Ethical considerations are particularly important in education research because the participants tend to share information that could be threat to others. In this case, the nursing students may share personal experiences that could be sensitive to the patients' privacy. The legal rules and provisions of the country also restricts such and certain approvals are to be taken from research councils as well which is a good example of usefulness of axiology in research. However, from the end of researcher as well, maintaining high ethical standards strengthens the credibility and trustworthiness of the study that is conducted.

Blending Ontology and Epistemology

As we discussed that ontology looks into what is in existence, or what is real and epistemology is about how we gain knowledge, the methods, and the validity of that knowledge, in order to make the research meaningful, ontology and epistemology can be taken as mutually dependent paradigms. For instance, ontology defines what is real, while epistemology defines how the knowledge regarding such reality can be obtained. When both are considered together, the research becomes more robust and reliable. This blend helps researchers design studies that accurately reflect the reality of the situation and garner the knowledge from participants (Patel, 2024).

In my research on nursing students, the study focuses on the question:

Which teaching method, i.e., lecture, interactive, or constructivist best helps nursing students understand key concepts?

Appropriate Reasoning

Ontological Position

My ontological position is that teaching methods have a real and substantial impact on students' understanding, behavior and learning outcomes. I consider it real that students' engagement and understanding differ based on whether they are taught in the classroom through traditional lectures, interactive sessions, or constructivist approaches. This belief guides how I design my research questions and evaluate the appropriate methods to undergo study in this discipline.

Ontology can also be taken from the point of objective and subjective perspectives. An objective perspective assumes that each number of student will respond similarly to a teaching method, while a subjective perspective believes that individual preferences and experiences may differ from person to person. Both perspectives are instrumental in understanding research design and also interpreting results.

Epistemological Belief

To justify my ontological position, I exhibit an interpretivist epistemology. Concerning that my research is related to understand the students' perception, this approach focuses on comprehending their experiences. It focuses listening to students carefully, observing their activities and engagement in different pedagogical methods, curating accordingly and evaluating their feedback to obtain results into what works best. Through the integration of qualitative data from such in-depth interviews, focus groups discussions, and observations with quantitative measures such as exam scores, I can obtain a detail understanding of the effectiveness of each method.

Conclusion

All in all, understanding the concept of research paradigms is instrumental for conducting research in education that helps in generating valuable outcomes. Ontology, epistemology, rhetoric, axiology, and methodology in general provide a comprehensive framework for studying research questions, such as which pedagogical method is most effective for nursing students. Integrating ontology and epistemology ensures that the research is useful as well.

In the context of nursing education, this method of integrating different research paradigm helps us to contrast and compare between lecture way of teaching, interactive methods, and constructivist pedagogical approach to identify which method best supports students in understanding key concepts. Linking different philosophical foundations and paradigms with pragmatic research methods helps in generating results that are helpful for scholars, researchers, policy makers, educators, students, etc.

Nonetheless, research paradigms do not only facilitate the study but also amplifies the understanding of learning and teaching, i.e., pedagogical processes. It provides a proper way to understand and explore the research objectives, questions, decipher findings, and accordingly integrate knowledge in practical scenario. With the use of research paradigms, researchers can assure that their study is relevant, ethical, reliable, and competent enough of making a real change in education sector.

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