



Quality Pedagogic Practices in Teaching of Pharmacy

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Abstract

Pedagogy is a science of teaching and learning which aims at the effective reach of knowledge among the learners [2]. It comprises strategies and procedures for teaching – that result in effective learning. Pedagogy is rooted in educators' in-depth subject knowledge and command over the subject. It is shaped by the love and commitment teachers have – towards the subject, towards teaching profession and towards learners. It is governed by educator's philosophy towards learning and cultural understanding. Cultural and intellectual diversity among the educators and learners result into different teaching and learning styles. To have effective classroom engagement it is imperative to bring quality in the pedagogic practices; as quality pedagogic practices will be instrumental in developing a meaningful learning environment that creates new knowledge, new learning on the prior learning.

This paper discusses the importance of quality pedagogic practices in the teaching of pharmacy, various teaching styles, teaching approaches, innovative teaching techniques, learning styles - its impact on the society and on the lives of future pharmacists and society at large.

Keywords: *Quality, Teaching, Pedagogy, Pharmacy, Learner,*

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I. Introduction

'One of the most powerful tools for empowering individuals and communities is providing quality in education'

Quality education refers to an education system that provides learners with the necessary knowledge, skills, and competencies to thrive in the modern world. It should promote critical thinking, creativity, problem-solving, communication, and collaboration. Quality education should be inclusive and equitable, ensuring that all learners, regardless of their background or abilities, have access to the same opportunities to learn and grow [7]. Quality education is essential for social and economic development. It can drive innovation, promote entrepreneurship, and foster a skilled workforce, which can contribute to economic growth and reduce poverty [7]. Education can also promote social cohesion, reduce inequality, and foster democratic values and institutions. Most importantly, quality in education facilitates effective learning. Learning that results in knowledge generation. [7]

There are diverse modes by which learning takes place. As per Flemings 1995, learning modes are abbreviated as VARK – Visual, Auditory, Reading and Kinesthetic [1]. Due to advancements in technology, one more parameter can be added in the modes of learning and that can be Digital mode

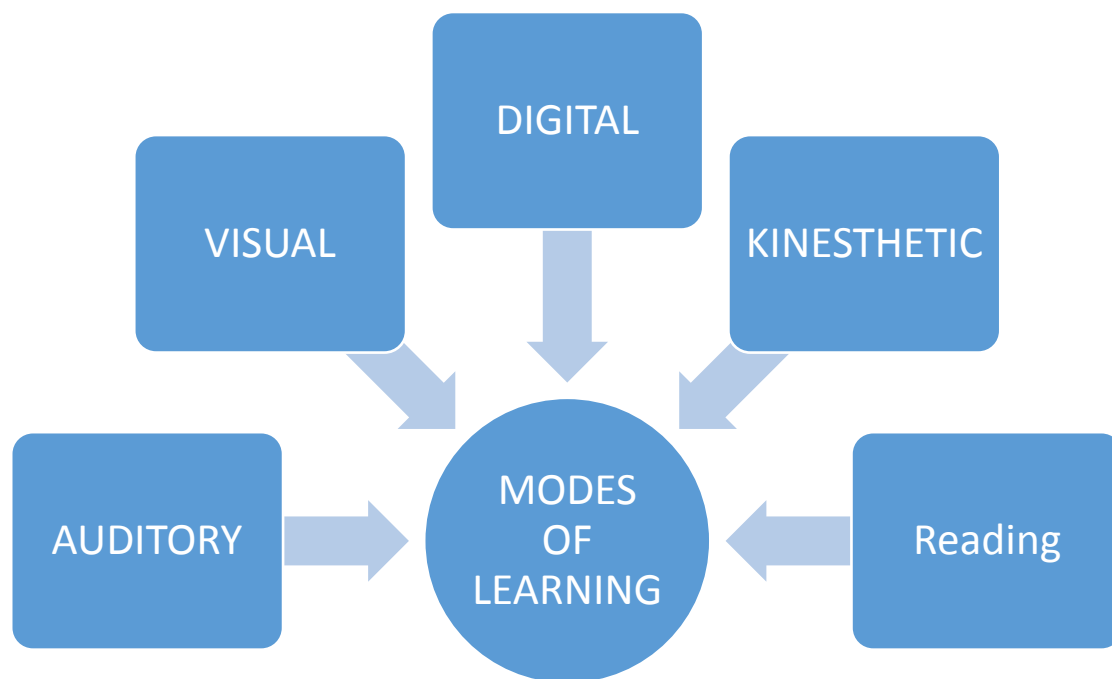


Figure 1: Modes of Learning[1]

Everyone has a unique learning style, and it's not uncommon for individuals to have a combination of two or more of these styles [1]. Understanding learning style can help study more effectively and efficiently. Visual learners prefer learning through visual aids such as diagrams, charts, presentations and videos. Auditory learners prefer learning through hearing and listening to lectures, discussions, and podcasts. Reading/Writing learners prefer learning through reading and taking notes [1]. Kinaesthetic learners prefer learning through physical activities, working in practical laboratories and with hands-on experiences. Today's modern day learner is technosavvy and therefore has more affiliation towards learning that is facilitated through digital mode – through online platforms, virtual classes, web links and virtual classrooms

There are different domains of education, this paper focuses on the educational practices in one of the important professional education domain i.e. the Pharmacy Education – the paper highlights the importance of quality in Pharmacy education and discusses the diverse strategies that can be used in the teaching of this professional program.

Pharmacy Education and Its Importance

The domain of Pharmacy is a key performer in primary and preventive health care and is defined as the science of the composition, use and dispensing of drugs [3]. The study and practice of Pharmacy has evolved and expanded considerably over the years due to the exponential growth of the health care and pharmaceutical industry. Pharmacy practice is committed to achieving optimum results from medication therapies in the interest of building a healthier society. According to Shankar, Partha, Shenoy, and Shivananda (2019), pharmacy education in India is regulated by two organizations, the Pharmacy Council of India (PCI) and the All India Council for Technical Education (AICTE). The PCI, established under the Pharmacy Act of 1948, sets regulations for the minimum standard of education required for qualification as a pharmacist. Pharmacists with a B Pharm degree typically seek positions in production, quality control, and marketing within the pharmaceutical industry, or may be appointed to drug regulatory agencies or quality control laboratories by the government. M Pharm degree holders, including those in clinical pharmacy, may join the industry in various positions, with many choosing to work in research, formulation development, or clinical trials. They also have the opportunity to work in academia as researchers or faculty members. The demand for pharmacists is expected to increase with the growth of the pharmaceutical industry in India. It is therefore imperial to ensure quality in the pedagogic practices in the teaching of Pharmacy.

Pedagogic Practices

Pedagogy can be defined as the science of teaching and learning. It involves the teachers' beliefs and understanding of culture and different learning styles (Shirke 2021). Pedagogic practices refer to the methods, techniques, and strategies used by teachers or instructors to facilitate learning and promote student achievement. Pedagogic practices include a wide range of approaches such as lecture, discussion, group work, project-based learning, case-based learning, simulation-based learning, and many more. The choice of pedagogic practices

depends on various factors such as the subject matter, learning objectives, student needs and preferences, and the context in which learning takes place [2]. The aim of pedagogic practices is to create a conducive learning environment that helps learners acquire knowledge, skills, and competencies, and develop critical thinking, problem-solving, communication, and collaboration skills.

Quality in Pedagogic Practices

Bringing quality in pedagogic practices is crucial as it has a significant impact on student learning outcomes and overall educational effectiveness. Quality pedagogic practices can provide students with engaging, effective, and meaningful learning experiences that help them achieve their full potential. Here are some specific reasons why bringing quality in pedagogic practices is important: Enhancing student learning: Quality pedagogic practices can enhance student learning by providing opportunities for active learning, critical thinking, and problem-solving. When students are engaged in meaningful and challenging learning experiences, they are more likely to retain the information and develop higher-order thinking skills.

In the current era of technological advancement – the learner is not deficit of content in the domain of choice; crucial is the practical understanding of the subject, ability to implement the knowledge in the practical situation, vital is development of skill, inculcation of values, ethics and art of implementing the knowledge for wellbeing of society – thereby shaping sustainable development. Broadly Pedagogy refers to the way of teaching. It is amalgamation of apt teaching procedure and thorough in depth knowledge of the subject – mastery over the subject matter [4] [2]. It comprises of teaching techniques, styles, means and ways. It aims at the development of skills and attitudes of the learners – creating learned professionals. Pedagogy enables thorough understanding of the subject and that enables the learners in applying those learning in their practical lives.

Pedagogic practices aim at facilitating thorough understanding of the concepts – broadly they are same in all the fields – may it be Science. However when it comes to the teaching in Pharmacy, the pedagogic practices encompass more emphasis on practical aspects along with theoretical deliberations.

Quality pedagogic practices play a vital role in pharmacy education. Pharmacy is a complex field that requires a deep understanding of various scientific concepts, as well as practical skills such as medication management and patient care. Therefore, quality pedagogic practices are essential to ensure that pharmacy students receive the best possible education to prepare them for their future roles as pharmacists. Over and above this quality pedagogic practices in Pharmacy education in line with the recommendations of NEP'2020 can contribute in developing critical thinking, creative thinking and problem solving skills among the learners in the following way for facilitating effective learning among the students of Pharmacy:

- Ensuring student engagement: Pharmacy education can be challenging, as it involves providing lot of practical hands on experience along with explaining theoretical concepts in the learning process [3]. Quality pedagogic practices, such as active learning sessions involving flipped classrooms, Project based learning and problem-based learning, can help students stay interested and motivated to learn.
- Developing critical thinking skills: Pharmacy students need to develop strong critical thinking skills to analyse and interpret complex information, make evidence-based decisions, and solve problems effectively [2]. Quality pedagogic practices such as case-based learning and collaborative learning on the forums of Project work, can help students develop critical thinking, skills.
- Fostering practical skills: Pharmacy is a practice-oriented field, and students need to develop practical skills such as medication management, drug interactions, and patient counselling [2]. Quality pedagogic practices, such as simulation-based learning and clinical training, can provide students with opportunities to develop and practice these skills.
- Preparing students for professional practice: Pharmacy students need to be prepared for their future roles as pharmacists, which requires them to have a solid understanding of the ethical, legal, and professional responsibilities of the profession. Quality pedagogic practices, such as experiential learning and inter professional education, can help students develop the necessary competencies to be successful pharmacists.[3] Quality pedagogic practices are crucial in pharmacy education as they can help students stay engaged, develop critical thinking and practical skills, and prepare them for their future roles as pharmacists.

Quality Pedagogic Practices in Pharmacy teaching can be summarized with help of following

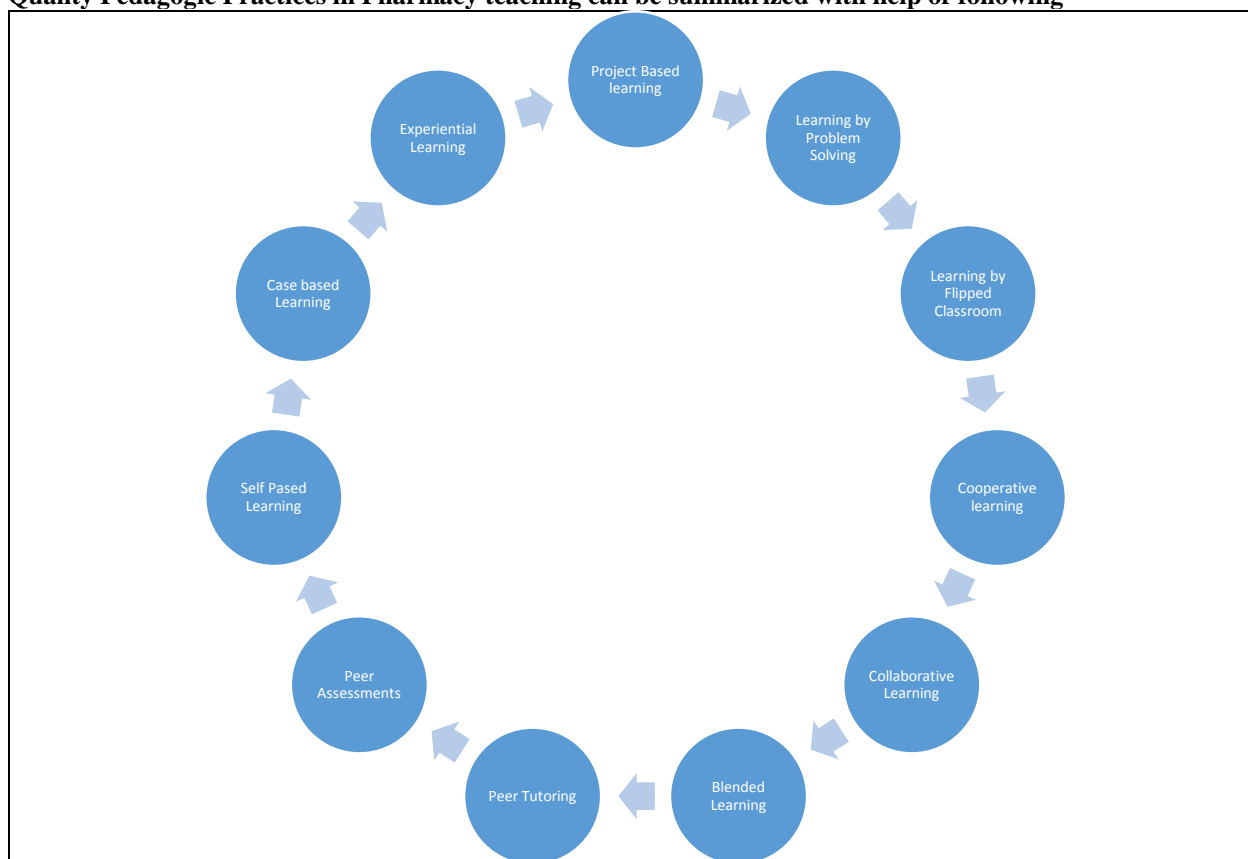


Figure 2: Pedagogic Practices [1]

Importance of Quality Pedagogic Practices in Pharmacy

Quality pedagogic practices are essential for the effective teaching [7] of pharmacy in higher education organizations. Here are some key practices that can be employed to enhance the quality of teaching in pharmacy education:

1. **Active Learning:** Active learning engages students in the learning process through activities such as case studies, problem-based learning, simulations, and group discussions. This approach promotes critical thinking, problem-solving, and decision-making skills.
2. **Use of Technology:** Technology can be used to enhance learning and make it more engaging. For example, e-learning platforms, virtual simulations, and interactive videos can be used to deliver course content and assess student progress [3].
1. **Personalization:** Students have different learning styles and preferences, and it is important to cater to these differences [8]. Personalization can be achieved through activities such as personalized feedback, one-on-one mentoring, and self-paced learning.
2. **Interdisciplinary Learning:** Pharmacy education involves learning from different disciplines, including pharmacology, physiology, chemistry, and pathology [3] [4]. Interdisciplinary learning promotes a deeper understanding of the subject matter and enhances the student's ability to apply concepts in practice.
3. **Faculty Development:** Faculty members play a critical role in the quality of education, and continuous professional development is important to enhance teaching skills and keep up-to-date with the latest advancements in the field.
4. **Assessment for Learning:** Assessment is an integral part of the learning process and can be used to monitor student progress, identify areas for improvement, and provide feedback. Assessment for learning involves providing constructive feedback to students throughout the learning process to promote continuous improvement.
5. **Collaborative Learning:** Collaboration among students and between students and faculty promotes teamwork, communication, and problem-solving skills. Collaborative learning activities can include group projects, case-based learning, and clinical simulations [8].

By employing these practices, higher education organizations can enhance the quality of teaching in pharmacy education and prepare students for successful careers in the field.

II. Conclusion:

Thus to summarize to ensure quality in pedagogic practices in the teaching of pharmacy, aligning with recommendations of NEP'2020 – to develop the 21st century skills among the learners it is important that the pedagogic practices involve diverse modes of teaching – along with traditional teaching strategies, digital platforms, hybrid mode, blended mode of teaching involving intensive use of web links, presentations, webinars, virtual laboratories and e resources should be done.

Implications of Pharmacy Education: There are several implications for pharmacy education, including: **Keeping up with industry advancements:** Pharmacy education programs need to keep up with the latest advancements in the pharmaceutical industry to ensure that graduates are equipped with the skills and knowledge needed to succeed in their careers [3]. **Preparing students for a variety of career paths:** Pharmacy education should not only prepare students for traditional roles in the pharmaceutical industry but also for emerging roles in areas such as data analytics, biotechnology, and precision medicine. **Developing soft skills:** In addition to technical skills, pharmacy education programs should focus on developing soft skills such as communication, teamwork, and leadership, which are essential for success in any career. **Incorporating inter professional education:** Pharmacy education programs should incorporate inter professional education to prepare students to work collaboratively with other healthcare professionals and to provide comprehensive patient care. **Emphasizing lifelong learning:** Pharmacy education should emphasize the importance of lifelong learning and continuing education to keep up with advancements in the field and to maintain licensure requirement [8]. Overall, pharmacy education programs need to be responsive to the changing needs of the industry and to prepare graduates to succeed in a rapidly evolving healthcare landscape.

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