

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The term artificial intelligence was coined in 1956, but artificial intelligence has become popular nowadays, it is all due to increased data volumes, improvements in computing power and storage and advanced algorithms. Artificial Intelligence (AI) is the branch of computer science which is concerned with building smart machines with capability to perform tasks which typically require human intelligence.

Efforts have constantly been made to incorporate AI into teaching and learning; however, the successful implementation of new instructional technologies is closely related to the attitudes of the teachers who lead the lesson. Teachers' perceptions of AI utilization have only been investigated by only few scholars due an overall lack of experience of teachers regarding how AI can be utilized in the classroom as well as no specific idea of what AI-adopted tools would be like.

Artificial Intelligence (AI) has been significantly changing the structure of every industry and exponentially increasing the availability of cutting-edge tools utilized in people's everyday lives. This state-of-the-art technology has also considerably influenced educational practices, and efforts are constantly being made to incorporate AI into teaching and learning.

Moreover, scholars have claimed that the successful implementation of new instructional technologies is closely related to the attitudes of the teachers who lead the lesson (**Fernández-Batanero et al., 2021**). Despite decades of professional development about educational technology integration, a great number of teachers still view the implementation of technology in the classroom negatively and are not inclined to use it (**Prensky, 2008; Kaban and Ergul, 2020; Istenic et al., 2021**).

Instead, they continue using the same materials and teaching methodologies, rejecting the application of anything that might bring negative outcomes **(Tallvid, 2016)**. Moreover, anxiety brought about by using new technologies can act as a burden **(Zimmerman, 2006)** and hinder teachers' efforts to introduce technology on-site **(Hébert et al., 2021)**.

According to the most recent research in the field of AI-based learning, the more space is available for learning using modern applications, the more opportunities there are to improve the education system and keep up with development. Because AI plays a variety of important roles in the teaching–learning process and its components, it has the potential to play a significant and tangible role in the learner's present and future **(Mahmoud, 2020)**.

It is necessary to emphasize the great potential offered by AI for use in education through the Internet and the accompanying vast developments that have created ease of access for students and teachers to the information they need and want to obtain. As a result, it is necessary to take advantage of the applications of AI and employ them in the design of curricula, teaching methods, and assessment to obtain effective learning **(Eltabakh, 2019)**.

Although AI has the potential to transform education **(Holmes et al., 2019)**, good educational outcomes typically do not occur by the virtue of merely using advanced AI computing technologies **(Castañeda & Selwyn, 2018; Du Boulay, 2000; Selwyn, 2016)**. More importantly, the use of distinct classes of educational technologies generally imply different philosophical and pedagogical perspectives, which in turn pose critical influences on the quality of learning and instruction **(Hwang et al., 2020)**.

Having identified teachers' lack of AI knowledge as a barrier to AI implementation, studies have begun to explore the preparation of teachers to teach AI through professional development (PD) programs **(Lee & Perret, 2022)** and co-design of learning resources **(Lin & Van Brummelen, 2021)**. While PD is important, exploring teachers' intention and readiness to teach AI in classrooms is imperative since teachers' acceptance and disposition could be a pointer to their interest

in teaching technology and impact their teaching practices (**Nikolopoulou, Gialamas, Lavidas, & Komis, 2021**).

As a result, gathering teachers' perceptions of their intention and readiness to teach AI would contribute to understanding the factors that support the successful implementation of AI in schools. There is a lack of research in the emerging field that specifically considers teachers. Earlier studies have identified students' intention to learn AI; we, however, believe that teacher's perspective should not be secondary since teachers are expected to promote AI-related concepts in class. It is then necessary to understand their perspectives that will encourage effective implementation of the subject in schools as well as colleges.

## **1.2 Statement of problem**

Despite the growing significance of Artificial Intelligence (AI) in education, teachers' limited awareness and varying attitudes toward AI integration hinder its effective adoption in teacher education programs. The problem of the present study is stated as **A STUDY ON AWARENESS AND ATTITUDES OF TEACHERS TOWARDS ARTIFICIAL INTELLIGENCE (AI) IN TEACHER EDUCATION.**

## **1.3 Rationale of the Study**

The study provides a novel contribution by its thorough investigation of the diverse effects of AI on teacher education. It offers beneficial perspectives on the possible benefits and challenges, illuminating the far-reaching changes that AI could bring to the terrain of learning and instruction and teaching methods in the time yet to come. The research sought to assess the effect of AI adoption in teacher education across five main dimensions: (i) its influence on teaching support and classroom management, (ii) its role in creating inclusive and accessible learning environments, (iii) its contribution to improving teachers' digital literacy and computer skills, and enhancing access to digital teaching resources, (iv) its positive influence on identifying students' learning styles and facilitating the adoption of diverse teaching methods, and (v) its role in strengthening teacher-student relationships through improved interactions.

#### **1.4 Operational Definition of Key Terms:**

**1. Artificial Intelligence (AI) in Education** - Artificial intelligence can tailor educational content and experiences to meet specific learning needs. One of the most notable applications of AI in this field is personalized learning.

**2. Awareness Of Teachers** - Teachers' knowledge, understanding, and familiarity with AI concepts, applications, and implications in education.

**3. Attitudes Of Teachers** - Teachers' positive or negative behaviour, beliefs, and intentions toward AI integration in their teaching practices. Teacher attitudes toward Artificial Intelligence (AI) in education play a crucial role in how effectively these technologies are implemented in the classroom.

**4. Teacher Education** - Programs, courses, or training that prepare teachers effectively in teaching. Teacher education is critical for preparing educators to effectively navigate the evolving landscape of modern classrooms, especially with the integration of technologies and various teaching methods.

#### **1.5 Objectives**

1. To investigate teachers' awareness and understanding of Artificial Intelligence (AI) in education.
2. To examine teachers' attitudes towards integrating AI into their teaching practices.
3. To assess teachers' knowledge of AI concepts and applications in education.
4. To determine teachers' familiarity with AI tools and platforms.

## **1.6 Delimitation of the Study**

1. One of the significant delimitation involves the geographic focus of the study. Here the study is basically focused on the B.Ed colleges of Kannur district in Kerala.
2. The research may focus specifically on teachers engaged in formal teachers who are in-service teachers in B.Ed colleges.
3. The methodological approach is another aspect that may be delimited. This decision allows for a focused examination of current attitudes and awareness rather than tracking changes over time. Consequently, the findings will be more immediate and reflective of the current state of teachers' perspectives on AI.