

# Chapter 1

## Introduction



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**Abstract** The increasing affordances of new technologies provide both new opportunities and challenges for teaching in higher education. Equipping instructors with the necessary teaching competencies to overcome these challenges in the digital era is imperative. This handbook serves as a reference for higher education stakeholders. It aims to cultivate high-quality instructors, improve higher education quality, and drive digital education transformation. It covers the context, theoretical foundations, and standards for teaching competency development. The book provides a practical framework for fostering teaching competencies across various levels and includes real-world examples of current practices.

The increasing affordances of new technologies provide both new opportunities and challenges for teaching in higher education. Equipping instructors with the necessary teaching competencies to overcome these challenges in the digital era is imperative. This chapter introduces the handbook by providing background information

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(Sect. 1.1), explaining the purpose and scope (Sect. 1.2), and offering instructions on how to use this handbook (Sect. 1.3).

## 1.1 Background

### 1.1.1 *Digital Transformation in Education*

The digital transformation in education is not just the application of digital technology to education, but the optimization and transformation of the operation mode, strategic direction, and value proposition of educational institutions to adapt to the digital era. The goal of digital transformation in education is to enhance learning and develop students as digital citizens in the digital era.

The digital transformation in education brought many changes to education. First, the goal of education has gradually shifted to cultivating interdisciplinary personnel who possess cross-disciplinary knowledge, skills, and attitudes. As an important part of interdisciplinary knowledge, digital literacy includes not only basic digital technology knowledge and skills, information and data literacy, digital security, and digital ethics literacy, but also professional knowledge and skill in the digital era. It represents the ability to unify self-identity in both the virtual and real world. Second, students' learning and cognitive styles are undergoing fundamental changes. These changes brought challenges to traditional instruction that uses fixed space and static resources. The changes also put forward a new requirement for teaching competencies: the need for continuous development of digital teaching competencies. Instructors trained in the large-scale methods of the industrial age cannot meet the learning needs of the digital age. Therefore, improving instructors' teaching competencies, including the awareness, literacy, ability, and research of the integration of digital technology into teaching is necessary.

Teaching competency development is an ongoing process and a complex systematic project that is characterized by target differentiation, multi-party collaboration, content standardization, method diversification, and comprehensive evaluation. It requires concerted efforts from the government, society, institutions, and individual teachers. Lifelong learning can be an effective approach to develop instructors' teaching competencies. Lifelong learning provides high-quality vocational and technical education that enhances instructors' abilities in incorporating pre-service training and post-service development to guide students' development and career planning, helping students establish the habit of lifelong learning in post-service education.

Promotion of lifelong learning among higher education teachers are achieved through four methods. First, teachers should take full advantage of self-regulated learning and engage in lifelong learning from multiple perspectives. Teachers' teaching competency development requires the concept and strategy from the "five

books of learning” (Zhang, 2022) tailored to adult learners. Teachers should formulate and tailor their personal learning plans according to their individual learning needs, abilities, and specific circumstances. Second, teachers should consider adult learning theory. As adults, teachers’ learning styles are significantly different from children and adolescents. Learning should be problem-solving oriented, emphasizing the practical application of knowledge gained through real-world experience (Li & Zhu, 2016). Third, teachers must focus on the principles of professional learning and development. This involves focusing on developing self-regulation skills that enable teachers to assess the impact of their teaching on promoting students’ valuable learning. Fourth, post-employment training and professional practice play vital roles in lifelong learning. Teachers should fully utilize training and learning opportunities and actively engage in learning with organizational support.

### ***1.1.2 Higher Education Reform***

Higher education has been undergoing reform in many countries. In the United States (U.S.), the 2005 report titled “Teacher Induction of Approaching the Learning Community” mentioned that the U.S. would implement a comprehensive new teacher induction education, which was expected to play a fundamental role in the twenty-first century learning community (Fulton et al., 2005). In the United Kingdom (U.K.), in November 2015, the British government released the higher education green paper “Fulfilling Our Potential: Teaching Excellence, Social Mobility and Student Choice”, which proposed the implementation of the “Excellent Teaching Assessment.” The mechanism to achieve the three reform goals include (1) establishing a competitive higher education market; (2) creating more opportunities for students to choose schools; and (3) improving the management structure of higher education (Walker, 2016).

In China, the Ministry of Education issued the “Opinions on Deepening the Reform of Undergraduate Education and Teaching to Comprehensively Improve the Quality of Talent Cultivation” (The Ministry of Education, 2016). This document called for the comprehensive promotion of the construction of new engineering, new medical, new agricultural, and new liberal arts programs, all aimed at improving the capacity of colleges and universities to contribute to economic and social development, and establishing first-class foundations for training top-notch students in fundamental disciplines. This involved creating distinguished colleges, designing exceptional courses, and establishing academic excellence. In 2018, the Central Committee of the Communist Party of China and the State Council issued the “Opinions on Comprehensively Deepening the Reform of Teachers’ Team Construction in the New Era” (Xinhua News Agency, 2018). This document primarily focused on improving the ideological and political quality of teachers and comprehensively strengthening their moral and ethical standards. This initiative complemented the ideological and political work of strengthening colleges and universities. The document also aimed to improve the selection, training, and incentive mechanisms for

teachers and build a diverse and high-quality teaching workforce, including full-time and part-time educators. In 2020, as a supporting policy for implementing the “Opinions on Comprehensively Deepening the Reform of the Construction of the Teaching Staff in the New Era,” the “Guiding Opinions of the Ministry of Education and Other Six Departments on Strengthening the Reform of the Construction of the Teaching Staff in Colleges and Universities in the New Era” was issued. This guidance focused on four aspects (The Ministry of Education, 2020). Among the construction measures, the first one was to emphasize the construction of the ideological and political quality of college teachers and develop their moral and ethical standards as the primary goal. This entailed strengthening the “four histories” of education for college teachers, clarifying the institutional requirements, and ensuring that all teachers received training within a certain timeframe. These measures included incorporating various teacher ethics norms into the compulsory content of pre-service training for new teachers and professional development programs for in-service teachers. Only after completing a certain number of training hours and passing the assessment could individuals qualify as college teachers and engage in teaching activities. Teacher ethics and professional conduct should be the primary requirement and top criterion for teacher recruitment, title evaluation, position employment, mentor selection, commendations and awards, tenure assessment, project application, and other relevant procedures.

### ***1.1.3 Artificial Intelligence***

Artificial intelligence (AI) is the hallmark technology of the digital age and has been integrated into all aspects of life in recent years, profoundly changing the nature and methods of human activities involved. The application of AI in higher education consists of four stages (Yu, 2021): *initial contact* (using it as a tool for repetitive work processing), *gradually becoming proficient* (using it as a productivity tool to improve the efficiency of routine transaction processing), *collaborating* (delegating part of the work to AI, allowing teachers to focus on teaching innovation), and *mutual trust* (establishing a social partnership with AI and increasing the sociality between AI and teachers).

The rapid application of AI in higher education also poses challenges to teachers. Repetitive, monotonous, and routine teaching work, such as knowledge transfer, may be replaced by intelligent teaching systems, allowing teachers to focus on inspiring and facilitating creative activities. Human–machine collaborative teaching can become a development trend. The “intelligent + wisdom” learning environment using AI, situational awareness technology, cognitive technology, cross-media technology, and augmented and virtual reality technology can effectively improve teachers’ knowledge structure and competencies (Deng et al., 2021).

In terms of teaching competency development, the relationship between AI teachers and human teachers will be mutually reinforcing, shaping, and evolving. AI teachers can enhance the ability of human teachers to carry out teaching work

while human teachers can enrich the educational wisdom of AI teachers. The two can co-evolve and develop together in the process of mutual empowerment.

## 1.2 The Purpose and Scope of the Handbook

As a result of the collective wisdom of the International Centre for Higher Education Innovation under the auspices of UNESCO and experts across the world, this handbook represents a timely collection of resources focused on the development of teaching competency in higher education. It aligns well with the education vision set out by the Education 2030 Framework for Action. That is, we ensure that teachers and educators gain empowerment, appropriate recruitment, comprehensive training, professional qualifications, motivation, and support within systems that are efficiently governed and well-resourced.

This handbook draws upon relevant theories and approaches to teaching competency development, as well as innovative and inspirational teaching competency development practices in higher education. It provides insights into developing agile, flexible, and sustainable teaching competency development models and evaluation frameworks for both pre-service and in-service teachers. Individual teachers can use it as a reference to become more adaptable and resilient to new challenges, while identifying opportunities that are more aligned to new strategies. Moreover, the insights, models and evaluation frameworks can also inform the initiation of new teaching competency development programs and upgrade existing teaching competency development programs at an institutional level in higher education.

## 1.3 How to Use This Handbook

This handbook contains five chapters. This chapter introduces the background against which this book is written (Sect. 1.1). It also explains the purpose and scope of the handbook (Sect. 1.2) and how to use the handbook (Sect. 1.3). Chapter 2 defines related concepts (Sect. 2.1) and discusses theoretical foundations (Sect. 2.2) of teaching competency development. Chapter 3 proposes a standards framework for teaching competency development (Sect. 3.1) and reviews current evaluation instruments (Sect. 3.2). Chapter 4 proposes a sample framework for teaching competency development in higher education (Sect. 4.1) and then examines current achievement of teaching competency development at an international level (Sect. 4.2), governmental level (Sect. 4.3), societal level (Sect. 4.4), institutional level (Sect. 4.5), and individual level (Sect. 4.6). Chapter 5 presents current practices of teaching competency development, including international practices (Sect. 5.1), institutional practices (Sect. 5.2), and individual practices (Sect. 5.3).

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