

## Chapter 20

# Viability of Entrepreneurship Education for Employability to Meet Industry 4.0 Challenges in the Circular Economy: A Namibian Case

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### ABSTRACT

*Worldwide, a circular economy is seen as an innovative conduit for sustainable development. A body of knowledge exists in the literature in which scholars have outlined educational approaches and tools that can be used to accelerate the transition to a circular economy. This chapter contributes to this debate by arguing for the promotion of a circular economy through entrepreneurial education for sustainability as a graduate attribute. The chapter analyses the current state about circular entrepreneurial education in higher education institutions in Namibia as a case study, identifies the educational benefits of challenges to implementing circular entrepreneurial education, and makes suggestions for future development.*

### INTRODUCTION

The origins of the linear economy – the “take-make-use-dispose” model of consumption – date from the first, second and third industrial revolutions and the global economy developed around this model. Currently, sustainability is a hot topic globally as various social, economic and environmental factors mean that the linear economy is no longer sustainable. Therefore, a radical new model – the circular economy – is being advocated although it is not yet widely practised (Andrews, 2015). Many as a novel

DOI: 10.4018/978-1-7998-5116-5.ch020

pathway to sustainable development see the circular economy concept. Numerous scholars have outlined educational approaches and tools that lecturers can use to accelerate the transition to a circular economy (Andrews, 2015; Kirchherr & Piscicelli, 2019; Mendoza, Schmid, & Azapagic, 2019). The circular economy entails reducing the consumption of raw materials, designing products in such a manner that they can easily be taken apart after use and reused (eco-design), prolonging the lifespan of products through maintenance and repair, using recyclables in products, and recovering raw materials from waste flow (Kirchherr & Piscicelli, 2019). The concept has become part of political, economic, social and environmental discourse around the world in recent years and a policy priority in many countries. The circular economy has been promoted from its previous status as a “well-intended” marginal model to a viable and essential alternative to current and predominant linear practice (Andrews, 2015).

In educational terms, the recognition that education, at all levels, can be a powerful tool for promoting sustainable development led to the idea of “education for sustainable development” (Mohamedbhai, 2015). According to Mohamedbhai (2015), in 2002, the United Nations declared 2005–2014 the Decade of Education for Sustainable Development, with the objective of integrating the principles and practices of sustainable development into all aspects of education and learning, with UNESCO being appointed as the lead implementing agency.

Nevertheless, how can sustainable development be achieved and what is the role of higher education in promoting it? In a world dominated by linear economic systems, the road to improving resource use is multifaceted. Various frameworks have been developed to guide organisations in embedding circular economy principles in their strategy and operational practice. Higher education institutions are strategic agents in supporting sustainable development through entrepreneurial education as one of the critical graduate attributes in the Fourth Industrial Revolution era, as they represent an area of particular interest for circular economy implementation owing to their socioeconomic relevance for the service sector and their influential role in supporting sustainable development in cities and regions worldwide (Mendoza et al., 2019). However, they also represent a source of environmental impact as a result of significant resource consumption and waste generation. As the engines driving skills and knowledge, higher education institutions play a primary role in making circular economy approaches reality and, as such, hold the potential for raising the bar on sustainable performance (Nunes et al., 2018). However, whilst public and private organisations are making progress in introducing sustainable practices, there is a lack of studies analysing the practical implementation of circular economy thinking through entrepreneurship education in the higher education sector (Mendoza et al., 2019).

Entrepreneurship plays a fundamental role in the economy and entrepreneurship education may help to achieve a circular economy, as it equips graduates with entrepreneurial skills that are geared to this (Mendoza et al., 2019). However, interest in entrepreneurship education is a relatively new concept in Europe and is certainly the case for Africa. Entrepreneurship in itself is a relatively young discipline; Shigeru Fijii, who started teaching the subject in 1938 at Kobe University in Japan (Dana, 1992), pioneered entrepreneurship in education. The reason why entrepreneurship is so important in the higher education space is that it is a dynamic process of vision, change and creation, which is valuable for both the employability of graduates and their self-employment in the future. The implementation of new ideas and creative solutions will require a certain application of energy and passion (Kuratko, 2003). Developing an inclination for entrepreneurship is not something, which happens by chance; one has to be intentional about it. It is envisaged that through entrepreneurial education students should be able to create products in the face of knowledge, which is already established, as well as challenge the status quo. In ensuring that the circular economy functions at its optimum, they must strive to be risk takers,

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