Received 31 January 2021
Revised 9 February 2021
Accepted 9 February 2021

Learning factories and living labs projects for sustainable educational development

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Abstract

Purpose – This technical note aimed to assess critically the need of the learning factories and living labs for sustainable educational and social development.

Design/methodology/approach – The study implied systematic research review and opinions of the expert to critically analyze the meaning and application of learning factory and living labs for social and educational development.

Findings – The study concluded that there is an urgent need for the collaboration among the entire stakeholder for establishing learning factory and living labs for social and educational development.

Originality/value – The technical study provides a unique perspective to educational and social development. It added to the traditional learning system by enlarging the venue of learning through stabling learning factories and living labs and insisted the higher educational institutions (HEIs) to open their door for general public for the inclusive development at national and international horizons.

Keywords Learning factory, Living labs, Educational and Social development

Paper type Research paper

Introduction

One of the main premises of the higher education is sustainable social, economic and environmental development within scare resources in effective and efficient way. According to the United Nation Organization (UNO) declaration for meeting SDGs targets, HEIs are supposed to open their doors for social and outreach facilities, for active collaboration among the social stakeholders for the inclusive social development (Darun *et al.*, 2019). similarly, World Bank (WB) in their report on Technical Education Quality Improvement Program (TEQIP) clearly stated that technical educational institutions can't contribute to the sustainable development at micro or macro level, if they don't include tacit knowledge workers in their operations and projects (Dubey *et al.*, 2019; Tan *et al.*, 2019). Therefore, it is a cry of the age to for all stakeholders to develop framework for incorporation of learning factory and living labs for sustainable development.

Literature review

Looking at the need of the outreaching, generalization, customization of the education, we found sufficient literature support. Three scientific alternation (knowledge production) models (modes), which were published after rigorous research and experiential processes and were named as mode 1, mode 2 and mode 3, respectively, call for the accommodation of all kind of knowledge workers, to get them on board for the sustainable social development (Gibbons *et al.*, 2010). Mode 1 was later criticized by researchers, as they were focusing more on the role of academia in educational and social development. in the same way, there was another model, named as First Public Education Model, which also focused only on the "learned people" of the society and having deficiency to accommodate the lay-men of the society in learning and development processes (Cada and Ptáčková, 2013; Doner and

World Journal of Science, Technology and Sustainable Development
Vol. 18 No. 2, 2021
pp. 150-152

2042-5945
DOI 10.1108/WJSTSD-01-2021-0016

Schneider, 2019). These two models loosed their utilities as they were lacking the potentials to accommodate general public and both tacit and explicit knowledge. But mode 2 openly calls for the active collaboration and inclusion of all knowledge workers and stockholders for knowledge acquisition, storage and dissimilation (Cada and Ptácková, 2013).

Among the three scientific models (modes), Cada and Ptácková (2013) proclaims that mode 2 is more responsive to social and economic development and best suitable for exploring and developing indigenous and tacit knowledge and can be best forum for implementing through LF in HEIs or for developing liaison for Living labs (Jooste *et al.*, 2020; Maraghy *et al.*, 2017). Likewise, The co-production of knowledge model, mode 3, further enlarge the venues for the scientists and local knowledge worker collaboration with active participation and empowerment, to gives new directions and philosophies to knowledge workers for sustainable development. In parallel, this model believes that both aspects of learning development and knowledge exploration need to be considered, that may be "Contributive Expertise", to add to the body of knowledge and further development, or that may be "Interactional Expertise", which believe in getting benefits form the experiences of knowledge workers (Cada and Ptácková, 2013; Dubey *et al.*, 2019).

Focusing on the sustainable development goals (SDGs) of the UNO, education is supposed to deliver to sustainable development at national and international level. But unfortunately, in most of the regions of the world, education got failed to achieve their targets, especially in the developing countries. Among others, one main reason is that higher educational institutions (HEIs) botched to cater for social needs and requirements and to some extent, have cut-off their selves from society. They got failed to arrange resources for solving social and industrial problems due to their limited financial resources, unskilled knowledge workers and more, due to the their "closed-door policy", i.e. not opening their doors for outreach processes and operations to penetrate in society. They couldn't manage to develop robust plans due to unavailability of financial and technical resources. Moreover, the demarcation between industry and academia and a week of collaboration further narrowed collaboration for development.

Furthermore, in Asian countries, education and general development has not been priority due to excessive non-developmental expenses. In Asian countries, education is allocated less than 4% of the Gross Domestic Product (GDP), which is less than United Nations Educational, Scientific and Cultural Organization (UNESCO) recommendations for the poorest countries to be spent on education (Ahmed and Khan, 2020; Faiz *et al.*, 2016). In Pakistan, less than 1.96% of the GDP are allocated to education (Memon, 2007; Ahmed and Khan, 2020). (Ahmed and Khan, 2020; Faiz *et al.*, 2016). These limitations forced HEIs to work in a traditional manner, taking theoretical projects with no social and economic contribution, passing out graduate with zero or lesser organizational, technical and social skills, who start their practical work (Living s) from square one in the market. These all openly calls for strong collaboration among the different stakeholders of the society to join hands for sustainable development, which can be easily done through the learning factories and Living labs projects, keeping in consideration the limited technical and especially financial resources.

Moreover, it is quite clear that neither the HEIs, nor the industries can fulfill all their requirements at their own. HEIs can't afford in the form of skilled workers, space, highly technical machines and many other resources for the practical domain completion of the graduates. In the same way, industries need polished and hands on experiences graduate, without wasting their money and especially their precious time on their orientations and training. Therefore, living labs and learning factories concepts are getting popularity among the knowledge stockholders.

Conclusion

The above stated discussion concludes that, it is beyond the limitations and scope of the HEIs to attain social, emotional, psychological and economic development while keeping their selves

abscond from the social organizations, especially from the industries. They need to develop stronger active collaboration for the inclusive social, emotional, psychological and economic development. Additionally, industries and, especially the learning organizations like HEIs are supposed to open their doors to welcome all knowledge workers, irrespective of their domain, context and specialty, to test and codify their tacit and explicit knowledge and experiences.

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