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Use of online and blended learning in a multidisciplinary curricula and promotion of global citizenship (*Policy implication for a contact university in South Africa)*

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South African map & location

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Bloemfontein, Free State province

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Economic stimulus

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Mineral resources & tourists attracts

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Presentation Overview

- Introduction of concepts
- Aims and objectives
- Overview and background
- Brief literature
- Botherless teaching and learning
- Research approach
- Policy imperatives
- Conclusions

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Introduction of concepts

The following concepts were used to guide the study; viz

- **Online and blended learning**: is education that takes place over the Internet. It is often referred to as “e- learning” among other terms **V*/*S** a style of education in which students learn via electronic and online media as well as traditional face-to-face teaching.
- **Interdisciplinary and multidisciplinary**: is a method, or set of methods, used to teach across curricular disciplines or "the bringing together of separate disciplines around common themes, issues, or problems.” **V*/*S** An approach to curriculum integration which focuses primarily on the different disciplines and the diverse perspectives they bring to illustrate a topic, theme or issue
- Global citizenship

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Introduction of concepts

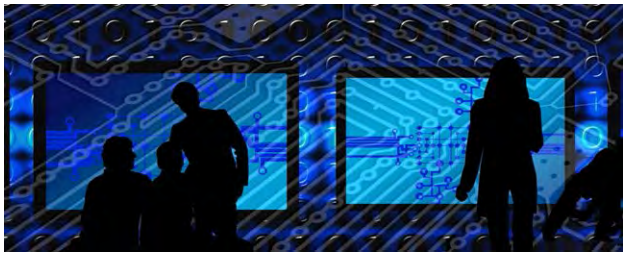
- **Global citizenship**: is the idea that all people have rights and civic responsibilities that come with being a member of the world, with whole-world philosophy and sensibilities, rather than as a citizen of a particular nation or place.
- **Fourth Industrial Revolution (4IR):** is the current and developing environment in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI) are changing the way we live and work.

Four (4) Phases of Industrial Revolution

17th Century – Agricultural revolution;
Use of coal, iron and waterways ***(power of steam)***

Discovery of electromagnetism & mutual induction
Rise of Electricity

Four (4) Phases of Industrial Revolution



Rise of Computer technology & digital era

3D printing, robotics and artificial intelligence – **Construction Education**

Evolution of Industrial Revolution

- For the construction industry, potential areas for application of artificial intelligence run the gambit: design workforce, equipment, administration, methodology, post construction, and facilities management – **Much required virtual, augmented and mixed realities.**
- The power of information and technologies around it is unleashed and realized – and it brings about immersive technologies within universities, esp UoTs.
- Smart office, Smart building and infrastructure and SMART university for an example is realized;
- South African government initiatives within 4IR is lead by the Minister of Telecommunications and Postal Services – **with the Commission**;

Evolution of Industrial Revolution

- Focus areas include but not limited to public sector, businesses, academia and research institutions, Youth, NGOs.
- The goal of the Commission is to advise on strategies; research programmes; Skills development, infrastructural and mechanisms to promote 4IR
- The interventions are geared toward responding to the 2030 National Development Plan and goals

4th IR - implications for a university of technology -

- ✓**Initiatives** should assist the university in achieving identity – 1 goal, 1 SMART institution,
- ✓**explore different approaches to achieve equity** and to overcome the limiting features caused by inequality, disadvantage and poor educational opportunities;
- ✓**produce healthy, smart, confident and young people** who will be ready for the challenges and opportunities of the 4th IR;

4th IR - implications for a university of technology -

- ✓**commit to ensuring that those who teach and learn will be prepared** for the challenges and opportunities that the 4th Industrial Revolution brings;
- ✓**emphasise its role in shaping future technologies** by being the testbed for innovation and educating future generations;
- ✓accept that traditional education has contributed greatly to current levels of industrial revolution and technological advancement; **(SATN presentation)**

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Overview and background

- Higher Education Qualifications Framework and Sub-framework in South African higher education sector **supports both contact and distant learning**. However, there is a clear policy decisions to separate the contact and distance offering of programmes and qualifications.
- In order to bridge the gap between contact and distant learning, there has to be a **convergence and change to programme design, academic structures, mode of delivery, internationalization of curricular** with a view to promote a graduate with multiple graduate attributes such as global citizenship.
- What policy change is required to accommodate botherless teaching and learning, and promotion of global citizenship for graduates

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Aims and objectives

- The study looks at the exploration of convergence of online and blended learning in inter/multi-disciplinary curricular within teaching and learning environment for both contact and distant tuition.
- The debates within the paper looks at constructing of botherless teaching and learning and promotion of global citizenship through the use of online/blended learning.

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Literature

- Mumtaz 2000 examined the factors affecting teachers' use of ICT in their teaching; Lai (2017) looks into pedagogical practices of networks in support of teaching using online distant learning; Voogt and McKenney (2017) examines the Technological Pedagogical Content Knowledge (TPACK) in teacher education and preparation of teachers for early use of technologies in teaching.
- TPACK plays a critical role in influencing teachers' decisions when selecting and using curricular resources, including ICT-based resources (Voogt and McKenney, 2017).
- McKnight *et al* (2016) zoom into teaching in a digital age and how educators use technology to improve students learning. The debate is around how to use technology to enable teaching and learning, not on successful conversation from face-to-face

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Conceptual and Theoretical Framework

- Rosenberg and Koehler (2015) conduct a research on systematic review the context and technological pedagogical content knowledge (TPACK). Their review is looking at the extent to which context is included in research to create an understanding of descriptions, explanations, or operationalization of TPACK.

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Botherless teaching and learning

- **Success & factors that encourages use of technology**
  - ❑ Early training in the use of technology is required;
  - ❑ Day to day practices
  - ❑ Provisioning of laptop/computers at home;
  - ❑ Affiliations to technology based networks and groups;
- **Challenges in the use of technologies (online blended learning)**
  - ❑ Previous studies shows why academics do not make use of technologies in their teaching – some includes, but not limited to the following:
    - ❑Lack of training on ICT/Technologies;
    - ❑Lack of on-site support for teachers using technologies;
    - ❑Inadequacy in financial & computer resources;
    - ❑Time required to integrate technology into curriculum.

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Research approach

- This paper adopts a theoretical stance thus by looking at promoting the use of online and blended learning beyond the borders – it is exploratory in nature.
- A case study design of a contact university of technology in South Africa is used – (ongoing exploratory study).
- A case study is chosen because it allows an inquiry of a contemporary issues of widening of access in HEIs in South Africa and beyond borders (Yin, 2006).
- Data is collected from academics and students who uses both contact tuition as well as online blended learning.
- Online questionnaires is administered to collect data from different faculties and departments within a university of technology.

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Research approach

- **Participants**
  - The total of 25 Undergraduate programmes, and a total of 128 Academics using e-Learning/eThuto platform forms part of the study.
  - Questionnaire is distributed to all 128 academics at undergraduate programme;
  - Use of technologies to support teaching and policy discourse is interrogated with a view to influence decision making on pedagogical and methodologies to be use in a university;
  - Furthermore, a total of 4232 first time entering undergraduate questionnaire is distributed to test their experience in the use of online blended learning and the support they obtained from university support divisions.

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Research approach

- **Data collection and measures to analyze**
  - Data is collected by using questionnaire consisting of 26 closed and 8 open-ended questions.
  - Questionnaire for this study is designed to elicit information on demographic variables; how academics feel about online teaching; technology use; use of technology in teaching and assessment; and the support teachers requires in teaching beyond borders.
  - SPSS and Excel are used to analyze data;
  - Analysis report presenting findings will follow soon after the completion of the project.

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Policy imperatives

- There is an approved e-Learning strategy (2015).
- The e-learning strategy is aligned to curriculum reform as well as teaching and learning plan of the university
- The aim of the strategy is to sets out CUT's agenda and aspirations for e-learning and education technology innovations in teaching and learning, as well as in curriculum;
- It draws from among other things, current trends, institutional, regional, national and international contexts and frameworks, the need to transform teaching and learning through increased access and diversified flexible delivery modes.
- The institution regards technological innovation as a stronghold for pursuit and stimulation of socio-economic development and entrepreneurship" in the region (Central University of Technology, 2013:5)

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Conclusions

- Online and blended learning is the future for the generations to come.
- It is possible to offer online blended course, but needs proper resourcing and human capital;
- There is a convergence between use of face-to-face as well as use of technology in teaching and learning environment, e.g. programme specific within an academic department in a university;
- SA is on track in introduction of policies to support teaching and learning at universities;
- Online blended could assist in creating global citizenship.

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Closure

Thank You

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Questions, Inputs & Proposal