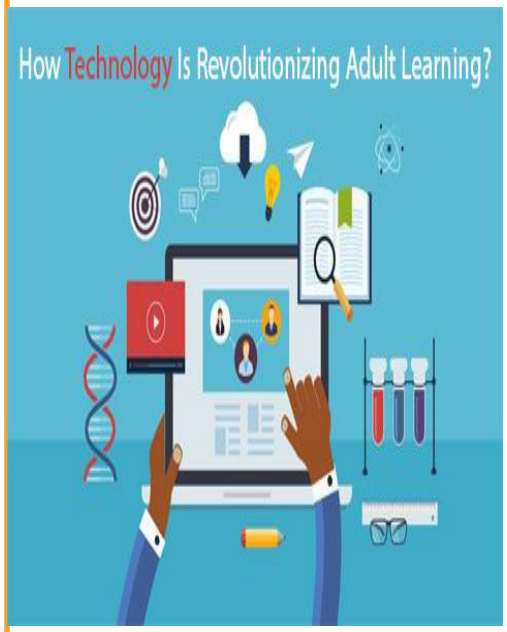
An assessment of the use of Information and Communication Technology (ICT) in the teaching and learning of Chemical Engineering, a case of Harare Polytechnic



M. Tapera and

B. Musamirapamwe

(Harare Polytechnic)

Zimbabwe

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INTRODUCTION

- ICTs are part and parcel of the teacher's professional toolbox. (Eady and Lockyer, 2013).
- Digital teaching materials have been used since long back but technology has changed over the recent decades.
- Computers, computer based devices and the internet has revolutionized ICTs used in education, research and other areas.

INTRODUCTION CNT'D

- Students are highly immersed into ICTs in nearly all aspects of their lives.
- Vital information and educational resources are available from ICTs .
- Students can learn at any time, any place, and at any pace.
- Teaching of Chemical Engineering often requires creativity and improvisation (Eriba Emmanuel Otor, 2015).

INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)

- ICTs are modern technical devices which are suitable for assisting in the acquiring and sharing of knowledge.
- ICTs encompass all digital teaching materials or aids like laptop computers, televisions, smart phones, overhead projectors and digital cameras.

ICT DEVICES

METHODOLOGY

- ✓Research design
- ✓Data collection
- ✓Data presentation
- ✓Data analysis

QUESTIONNAIRE FOR LECTURERS

Please respond by ticking a box for either YES if you agree with the statement or NO if you do not agree with the statement and giving details in the spaces provided.

1. Do you posses any ICT gargets for teaching and learning in your Department?

   YES ☐ NO ☐ . If yes, what ICT gargets do you posses?

2. Do you have any challenges in using some of the ICT gargets that you posses.

   YES ☐ NO ☐ . If yes, describe the challenges.

3. Besides what you posses in your department, do you have any other ICT needs as an Engineering Lecturer?

   YES ☐ NO ☐ . If yes, give details.

4. What are the important roles of ICT in the teaching of Chemical Engineering?

RESULTS

ICT gadgets possessed:

- Laptop Computers
- Desktop Computers
- LCD Projectors
- Smartphones

RESULTS: Challenges in using ICT gadgets

Lecturers

- Slow Connectivity
- Inaccessibility of Wi-Fi
- Difference capabilities among students
- Lack of ICT skills
- Software licensing
- Lack of ICT gadgets

Students

- Slow Connectivity
- Inaccessibility of Wi-Fi
- High student-computer ratio
- Erratic power supply
- Lack of ICT skills
- Lack of ICT staff
- Lack of ICT gadgets

RESULTS: ICT needs

Lecturers

- ICT workshops
- ICT training
- More ICT gadgets
- Wi-Fi for smartphones
- Engineering software licenses

Students

- Wi-Fi for smartphones
- More computers
- Reliable power supply
- Thorough ICT training
- More ICT staff

RESULTS: ICT Roles

Lecturer

- Improves lesson pacing
- Improves learner participation
- Promotes effective teaching
- Motivates learners

Student

- Promotes understanding.
- Enhance learning flexibility
- Promotes creativity
- Promotes curiosity

CONCLUSION

- The roles of ICTs to the learner includes promoting learner understanding, motivating learners, improving learner performance, enhancing learning flexibility as well as developing curiosity and creativity among learners.

CONCLUSION CONT'D

- Use of ICTs in teaching Chemical Engineering helps the teacher in improving lesson pacing, increasing learner participation, as well as promoting effective and thorough teaching.

RECOMMENDATIONS

- Chemical Engineering educators need to be adequately trained in incorporating technology into the daily curriculum and instruction.
- Chemical Engineering educators should make use of appropriate ICTs in order to promote learner understanding, motivate the learners and improve learner performance.

RECOMMENDATIONS

- Policy makers should work to provide all students with high quality learning options, regardless of where they live or what school they attend.
- Introduction of smart policies that ensure access to ICTs by students.

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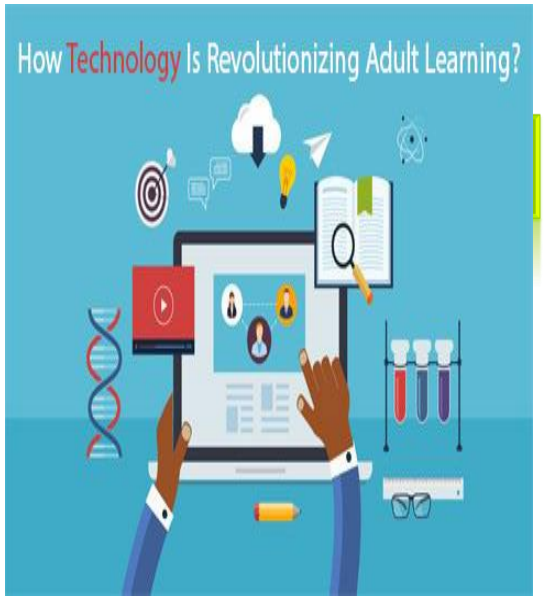

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