An Overview of ICT Teaching Methods

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ASSESMENT AND NOTES

- CA: 40%
  - 2 TESTS – 30%
  - 1 ASSIGNMENT – 10%
- EXAM: 60%
- NOTES:
  - VISIT www.lechaamwe.weebly
    - Cbu Lecture notes
    - Undergraduate
      - TM310

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Introduction

- A good ICT or Computing teacher, is one that understands what **real** teaching is, will do everything a so-called 'facilitator' would do, and more. (https://www.ictineducation.org/home-page/20-characteristics-of-excellent-computing-or-ict-teachers)

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Characteristics of a Good ICT teacher

- They love the subject, and are genuinely fascinated by it and its possibilities.
- They keep up to date with developments through popular magazines, books, internet and tv programmes.
- They keep up to date with academic research in the subject.
- They proactively seek and take part in professional development opportunities.

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Characteristics of a Good ICT teacher

- They introduce topics with what Ausubel called 'Advance Organisers'. That is, information and activities about things they already know about, in order to lead on to things they do **not** know about.
- They set up activities which have an interesting context, and preferably with some potential real-world application

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Characteristics of a Good ICT teacher

- They set up activities which are challenging, not quite within the pupils' comfort zone, technically known as the zone of proximal development.
- For example, they will ask the pupils not just to program a turtle to move from point A to point B, but to build in code to deal with an unexpected event during its journey.

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Characteristics of a Good ICT teacher

- They know enough to be able to answer pupils' questions, at least when it comes to matters of fact, the teacher should be able to give a proper, ie practically useful, answer.
- They will pair up pupils in such a way that an expert in one thing will help the non-expert

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Characteristics of a Good ICT teacher

- Will ask difficult questions of the pupils, to move them on to the next level.
- They have a bank of resources the pupils can refer to if they need to.
- They set appropriate out-of-school work.
- They assess what the pupils have done, not just rely on self-assessment or peer-assessment.

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Characteristics of a Good ICT teacher

- They understand how people learn.
- They enthuse and motivate pupils to learn more and achieve higher, this is an active process, it's not something that can be achieved by merely 'facilitating'.

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Characteristics of a Good ICT teacher

- A good teacher, of **any** subject, will know how to pace the lesson, when to intervene if someone needs help, how to stop some pupils disrupting the lesson –
  - in other words, a good teacher will be able to manage a class of 30 + kids doing several different activities

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Good quality teaching and learning with ICT

- **ICT promotes higher-order thinking skills**:
  - One of the key skills for the 21st century which includes evaluating, planning, monitoring, and reflecting to name a few.
  - The effective use of ICT in education demands skills such as explaining and justifying the use of ICT in producing solutions to problems.
  - Students need to discuss, test, and conjecture the various strategies that they will use.

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Good quality teaching and learning with ICT

- **ICT enhances subject learning**:
  - It is well known these days that the use of ICT in education adds a lot of value to key learning areas like **literacy** and numeracy.
- **ICT use develops ICT literacy and ICT Capability:** Both are 21st-century skills that are best developed whilst ICT remains transparent in the background of subject learning.

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Good quality teaching and learning with ICT

- **ICT use encourages collaboration:**
  - You just have to put a laptop, iPad or computer in the classroom to understand how this works.
  - ICT naturally brings children together where they can talk and discuss what they are doing for their work and this in turn, opens up avenues for communication thus leading to language development.

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Good quality teaching and learning with ICT

- **ICT use allows for effective Differentiation Instruction with technology**:
  - We all learn differently at different rates and styles and technology provide opportunities for this to occur.

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Good quality teaching and learning with ICT

- **ICT use motivates learning**:
  - Society's demands for new technology has not left out children and their needs.
  - Children are fascinated with technology and it encourages and motivates them to learn in the classroom.

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Good quality teaching and learning with ICT

- **It improves concentration and comprehension.**
  - The activities carried out through digital and interactive tools increase student concentration and, therefore, they assimilate concepts more quickly, enhancing learning.
  - This type of tool involves students in more practical learning, with the aim of reinforcing what they have learnt.

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Good quality teaching and learning with ICT

- **ICT in education improves engagement and knowledge retention:**
  - When ICT is integrated into lessons, students become more engaged in their work.
  - This is because technology provides different opportunities to make it more fun and enjoyable in terms of teaching the same things in different ways.
  - As a consequence of this increased engagement, it is said that they will be able to retain knowledge more effectively and efficiently.

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Good quality teaching and learning with ICT

- **It promotes student flexibility and autonomy**.
  - Technologies promote autonomous learning for students.
  - With the incorporation of digital alternatives such as online courses, each student can learn at their own pace, optimising time and resources thanks to the flexibility provided by digitalisation and connectivity.

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Good quality teaching and learning with ICT

- **It facilitates communication between teachers and students**.
  - The whole educational community has quick access to the same resources.
  - In this way, digital tools allow direct and immediate interaction, without the need to be physically present.

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Good quality teaching and learning with ICT

- Changes the role of teachers from a mere knowledge-transmitter to that of a learning-facilitator, knowledge guide or navigator and an active co-learner along with students.
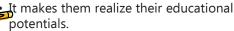
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Good quality teaching and learning with ICT

- Enables students to become more responsible about their learning as they seek out relevant information and knowledge through their own efforts, synthesize and share their knowledge with others.
- It makes them realize their educational potentials.

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21st Century learning and teaching Tools

- Multimedia PC, Laptop, Notebook.
- CDs& DVDs. digital video, still camera.
- Internet and its tools- e-mail, browsers, website, search engines, chat etc.
- Computer aided instruction & computer mediated conferencing, video/audio conferencing.

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21st Century learning and teaching Tools

- Digital libraries , e-books&electronic publications.
- Interactive TVs.
- Microsoft publishing -newsletter, poster, brochure.
- Word processing - documents, notes, projects, assignments

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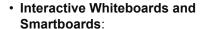
21st Century learning and teaching Tools

- Spread sheet programming -records, exam scores
- Data bases -information storage
- Graphing software - to prepare teaching-learning resources
- Developing Multimedia kits –to make process interesting

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Emerging ICT teaching tools

- **Virtual Reality (VR) and Augmented Reality (AR)**:
  – These technologies offer immersive experiences that can enhance learning in various subjects such as history, science, and geography.
  – Teachers can use VR headsets or AR apps to create interactive lessons that engage students in a more immersive way.

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Emerging ICT teaching tools
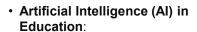
- **Interactive Whiteboards and Smartboards**:
  – These digital boards allow teachers to create dynamic presentations, annotate content, and integrate multimedia resources into their lessons.
  – They promote interactive learning and collaboration among students.

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Emerging ICT teaching tools

- **Artificial Intelligence (AI) in Education**:
  – AI-powered tools can provide personalized learning experiences for students by analyzing their strengths and weaknesses and adapting the content accordingly.
  – AI chatbots can also assist students with queries and provide immediate feedback.

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Emerging ICT teaching tools

- **Flipped Classroom Tools**:
  – Flipped classroom models involve students learning new content at home through videos or online resources, allowing class time to be dedicated to activities, discussions, and problem-solving.
  – Platforms like Edpuzzle, Flipgrid, and Nearpod support this approach by enabling teachers to create and share instructional videos and interactive activities.

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Emerging ICT teaching tools

- **Gamification**:
  – Gamification involves incorporating game elements such as points, badges, and leaderboards into educational activities to motivate students and make learning more engaging.
  – Various platforms and apps offer gamified learning experiences across different subjects.

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Emerging ICT teaching tools

- **Collaborative Tools**:
  – With the increasing emphasis on collaboration and communication skills, tools like Google Workspace (formerly G Suite), Microsoft Teams, Zoom, and Slack facilitate group work, discussions, and file sharing among students and teachers.
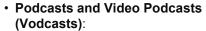
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Emerging ICT teaching tools

- **Mobile Learning Apps**:
  – As mobile devices become more prevalent, educational apps offer flexible learning opportunities that can be accessed anytime, anywhere.
  – Whether it's language learning apps like Duolingo, math practice apps like Khan Academy, or coding apps like Scratch, there are numerous options to support learning on the go.

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Emerging ICT teaching tools

- **Podcasts and Video Podcasts (Vodcasts)**:
  – Audio and video podcasts offer alternative formats for delivering educational content, providing opportunities for students to learn from experts, engage with diverse perspectives, and explore topics in depth.
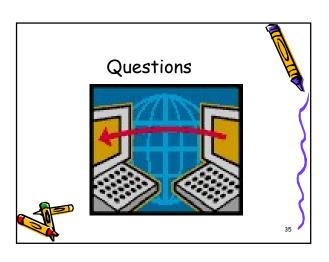
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Emerging ICT teaching tools

- **Blockchain in Education**:
  – Blockchain technology is being explored for securely storing academic credentials, tracking student progress, and ensuring the integrity of educational records.
  – This could potentially revolutionize processes like credential verification and transcript management.

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Questions

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Emerging ICT teaching tools

- **Adaptive Learning Platforms**:
  – These platforms use algorithms to adapt the learning experience to each student's individual needs, pacing, and learning style.
  – They can provide targeted interventions and personalized recommendations to support student learning.

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