THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATION COUNCIL OF TANZANIA
DIPLOMA IN SECONDARY EDUCATION EXAMINATION

750   **EDUCATIONAL MEDIA AND TECHNOLOGY**

Time: 3 Hour.   **ANSWERS**   **Year: 2001**

Instructions

1. This paper consists of sections **A** and **B.**

2. Answer all questions in sections **A** and **four (4)** questions from section **B.**

3. Read each question carefully before you start answering it.

4. Cellular phones and other unauthorized materials are **not** allowed in the examination room.

5. Write your **Examination Number** on every page of your answer booklet(s).

1. Identify and explain four limitations of using locally improvised instructional media in secondary schools, especially in rural areas.

One limitation is poor quality and durability. Locally improvised materials may be made from fragile or low-grade materials that wear out quickly, making them unsuitable for repeated use in classroom settings.

Another limitation is lack of standardization. Improvised media may not always accurately represent scientific models or concepts, leading to misinformation or confusion among students.

A third limitation is time-consuming preparation. Teachers often spend a lot of time gathering raw materials and constructing improvised aids, which reduces the time available for lesson planning and teaching.

Finally, some improvised media may lack visual appeal. If materials are not well-crafted or neatly presented, they may fail to capture students' attention or interest, reducing their effectiveness.

2. Distinguish between projected and non-projected media by giving two examples of each and stating two challenges associated with their classroom use.

Projected media are materials that require a device to display them onto a surface. Examples include PowerPoint slides and filmstrips. In contrast, non-projected media do not require such equipment and can be used directly. Examples include posters and flashcards.

One challenge of using projected media is the dependency on electricity and technology, which may not always be reliable in rural schools. Additionally, teachers may lack the technical skills to operate projectors or computers effectively.

For non-projected media, one challenge is limited scalability—large classes may find it hard to view small posters or charts. Another challenge is storage and maintenance, as physical materials can be easily damaged or lost.

3. Analyse four reasons why instructional media may fail to achieve the intended learning objectives, despite being well-designed.

One reason is poor alignment with lesson objectives. Even well-designed media will be ineffective if it doesn't directly support the specific goals of the lesson.

Another reason is improper use by the teacher. Without proper planning or understanding of how to integrate the media, teachers may misuse or underuse it, leading to confusion or boredom.

A third reason is lack of learner engagement. If the teacher uses the media in a teacher-centered way without involving students actively, the learning process becomes passive and less effective.

Lastly, inadequate timing can be a problem. If media is introduced at the wrong time in the lesson—either too early or too late—it may fail to reinforce the concept being taught.

4. With reference to classroom practice, evaluate two strengths and two weaknesses of using simulations to teach abstract science concepts at secondary level.

One strength is that simulations make abstract concepts visible and interactive. For instance, simulations of molecular motion allow students to observe and manipulate variables they can't see in real life.

Another strength is the safe experimentation environment. Simulations allow students to test ideas and observe outcomes without real-world risks or resource constraints, such as in chemical reactions.

One weakness is limited realism. Simulations are still models, and may oversimplify or misrepresent complex real-world processes, leading to misconceptions.

Another weakness is that some students may treat simulations as games, focusing more on entertainment than learning, unless guided effectively by the teacher.

5. Explain how each of the following psychological principles can guide the selection and use of educational media: (i) motivation, (ii) attention, (iii) retention, (iv) transfer.

Motivation guides the choice of media that can arouse curiosity or interest. Colorful, interactive media may increase learners' willingness to participate in the lesson.

Attention ensures that selected media helps sustain focus. Audio-visual materials that vary in tone, motion, or design can help maintain learner concentration throughout the lesson.

Retention refers to how well learners remember content. Media that presents information in multiple formats (e.g. sound and image) helps reinforce memory by engaging more senses.

Transfer relates to applying learned knowledge to new situations. Media that connects content to real-life examples or scenarios makes it easier for learners to generalize and apply knowledge elsewhere.

6. Suggest four strategies that a teacher can employ to integrate ICT tools in a classroom with limited technological infrastructure.

Teachers can use mobile phones where possible. Many phones can play audio or show short videos, allowing basic ICT integration even in low-resource settings.

They can also schedule rotational use. A few computers or projectors can be shared among multiple classes using a timetable to ensure fair access.

Offline digital content like CDs or USB drives can be prepared ahead of time, allowing ICT-based teaching even without internet.

Finally, teachers can combine ICT with traditional methods. For example, using printed versions of digital materials ensures continuity when equipment is unavailable.

Prepared by Maria Marco for TETEA

7. Explain the implications of poor media management systems in schools on lesson planning, teaching effectiveness, and learner performance.

Poor media management results in teachers wasting time searching for or improvising materials, leading to poorly planned lessons.

It also undermines teaching effectiveness. Without reliable media resources, teachers may rely on lecture-based approaches, which limit interaction and demonstration.

For learners, inconsistent use of media reduces exposure to diverse learning modes, affecting comprehension and performance, especially among visual or auditory learners.

Moreover, damaged or lost media materials due to poor storage or tracking result in constant replacements, which drain school budgets and create resource gaps.

8. A teacher is planning to use a 15-minute video documentary to teach a Social Studies lesson. Outline four critical pre-viewing, during-viewing, and post-viewing activities the teacher must implement to maximize learning outcomes.

Before viewing, the teacher should set clear objectives. Learners must know what they are expected to learn from the video.

During viewing, the teacher can pause at intervals to ask questions or explain key points, ensuring students are following along and processing information.

After viewing, students should be engaged in discussions or asked to summarize key ideas to reinforce understanding and encourage critical thinking.

The teacher can also assign a short quiz or written task to assess retention and application of the video content to the topic taught.

9. Briefly describe four major ethical and legal concerns that must be observed when using internet-based media resources in teaching.

Plagiarism is a key concern. Teachers must avoid presenting downloaded content as their own and must model proper citation practices to students.

Another concern is copyright infringement. Media used from the internet should be either royalty-free or used under educational licensing terms to avoid legal issues.

Privacy and data protection are critical when students are required to use online platforms. Teachers must ensure student data is not shared or misused.

Lastly, exposure to inappropriate content is a risk. Teachers must vet all websites and links before class to prevent accidental access to harmful or misleading material.

10. "Educational media should be more learner-centred than teacher-centred." Justify this statement by giving four strong arguments based on classroom practices.

Learner-centred media promotes active learning. When students interact directly with media, such as simulations or digital tools, they take greater ownership of the learning process.

It accommodates diverse learning styles. Visual, auditory, and kinesthetic learners benefit from media that offers multiple modes of interaction and engagement.

Learner-centred media fosters critical thinking. By exploring, analyzing, and evaluating media content independently or in groups, students develop deeper understanding.

Lastly, it improves motivation. When students feel involved through media that responds to their input, they are more likely to participate and remain interested in the lesson.

11. Examine five criteria that a teacher should use to evaluate whether a multimedia resource is pedagogically sound and curriculum-aligned.

The first criterion is curriculum relevance. The content of the multimedia resource must align with the national syllabus or specific learning objectives of the subject being taught to ensure it supports intended outcomes.

The second criterion is accuracy. The information presented must be factually correct, current, and free from misconceptions to prevent confusion or misinformation among learners.

The third criterion is usability. The resource should be easy to operate by both teachers and students, without requiring excessive technical knowledge or complex instructions.

The fourth criterion is appropriateness to learner level. Multimedia must match the language, cognitive level, and interest of the target students so they can engage and comprehend without difficulty.

The fifth criterion is interactivity and engagement. A sound multimedia resource should encourage participation, feedback, or exploration, which are critical for sustaining attention and reinforcing learning.

12. Assess five potential risks that could arise from overdependence on digital teaching tools in Tanzanian classrooms and propose mitigating measures.

One risk is the erosion of teacher-student interaction. Overusing digital tools can reduce the personal, responsive connection between teacher and learners. To mitigate this, teachers should blend digital tools with direct discussions and group work.

Prepared by Maria Marco for TETEA

Another risk is exclusion of students without access. Some learners may lack personal devices or internet at home, leading to inequality. Mitigation involves providing offline alternatives and communal access points like school labs.

Overdependence may also cause loss of basic teaching skills. Teachers may become reliant on ready-made digital content and neglect lesson planning or blackboard use. Regular in-service training can help maintain traditional teaching competencies.

A fourth risk is distraction. Learners may misuse digital tools for non-academic purposes during class. Strict digital use policies and supervision during lessons can minimize this risk.

Lastly, technological failure can disrupt learning. If systems crash or electricity fails, learning is interrupted. Teachers should always have backup non-digital materials to continue the lesson.

13. Discuss five specific ways in which educational media and technology can be used to promote inclusive education for learners with disabilities.

One way is through audio books and screen readers, which support visually impaired learners by converting text to speech, allowing them to access printed material.

Visual media with subtitles can benefit hearing-impaired learners, allowing them to read dialogue or narration in videos instead of relying on sound alone.

Interactive software with customizable features (e.g., text size, color contrast) helps learners with cognitive or learning difficulties better engage with content.

Assistive devices like Braille displays and speech-to-text tools help physically challenged students participate in class activities more independently.

Media-based sign language lessons also help bridge communication gaps between hearing-impaired students and their peers or teachers, fostering inclusion and interaction.

14. Differentiate between formative and summative roles of media in classroom instruction, and give five examples of how media supports assessment in each case.

Formative roles of media focus on continuous assessment to improve learning. For example, using interactive quizzes, online polls, and feedback apps helps track student understanding during lessons.

Summative roles aim to evaluate learning at the end of a unit or term. Media like digital exam platforms, project presentations, or video-recorded oral exams can be used to assess final performance.

Examples of formative use include:

- Real-time feedback tools like Kahoot

- Practice quizzes in e-learning platforms

- Audio recordings of student responses

- Video reflections on a topic

- Shared whiteboards for brainstorming

Examples of summative use include:

- Digital final tests

- Multimedia portfolios

- Timed online assignments

- Recorded presentations

- Simulation-based final evaluations

15. Analyse five factors that contribute to the underutilization of educational media and technology in government secondary schools in Tanzania.

Limited budget allocation is a major factor. Many schools lack funds to purchase and maintain educational media and ICT tools, making access and usage difficult.

Another factor is insufficient training. Teachers may not know how to use or integrate media into lessons due to lack of professional development or exposure.

Inadequate infrastructure, such as unreliable electricity or poor classroom design, also discourages teachers from using digital media consistently.

A fourth factor is resistance to change. Some teachers prefer traditional methods and may view new media tools as unnecessary or time-consuming.

Finally, lack of administrative support and clear policies limits the implementation of school-wide media programs. Without leadership support, media usage remains isolated or informal.

16. "The future of education lies in digital convergence." Discuss this statement by providing five arguments supported with practical classroom implications.

Digital convergence allows multiple media formats—text, video, sound, and animation—to be accessed on a single device, creating a richer and more flexible learning environment.

It supports blended learning models. Teachers can combine in-person instruction with digital resources, enabling continuity of learning during disruptions such as pandemics.

It promotes global access. Students and teachers can access content from international sources, improving the quality and diversity of learning materials.

Digital convergence also enhances collaboration. Platforms like Google Classroom or Microsoft Teams allow real-time feedback, group work, and content sharing among students and teachers.

Lastly, it supports data-driven instruction. Teachers can use learning analytics to identify struggling students and personalize support, which improves academic performance.

17. Evaluate the effectiveness of the TIE (Tanzania Institute of Education) in supporting the use of educational media and technology in secondary schools. Provide five well-reasoned points.

TIE provides curriculum-based teaching materials, including textbooks, syllabi, and teacher guides, which often integrate the use of educational media, improving structured teaching.

It develops and distributes digital resources through platforms like TIE eLibrary, making textbooks and supplementary materials accessible even in remote areas.

TIE also organizes teacher training on the integration of media in instruction, helping to bridge the digital skills gap among educators.

However, its reach is limited. Many schools are unaware of or unable to access TIE's digital platforms due to infrastructure challenges.

Additionally, TIE's media resources may not always reflect local contexts or include enough interactivity, reducing their appeal or effectiveness in the classroom.

18. Propose five innovative, low-cost solutions that teachers can adopt to overcome media scarcity in under-resourced learning environments.

Teachers can create wall charts and posters using manila paper and markers to visualize key concepts. These can be reused and adapted for various lessons.

Using locally available materials such as clay, sticks, or cardboard, teachers can construct models to demonstrate scientific, mathematical, or geographical concepts.

They can form media sharing groups among nearby schools to borrow or exchange resources like radios, projectors, or printed charts.

Find this and other free resources at: https://maktaba.tetea.org

Prepared by Maria Marco for TETEA

Mobile phones can be used to download educational audio and video clips, which can then be shared via Bluetooth or memory cards in class.

Lastly, teachers can integrate storytelling, drama, and role-play as media substitutes, which not only require minimal materials but also foster creativity and participation.

Prepared by Maria Marco for TETEA