THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

750 EDUCATIONAL MEDIA AND TECHNOLOGY

Time: 3 Hours **ANSWERS** **Year: 2016**

Instructions

1. This paper consists of section A and B.

2. Answer all questions in section A and four questions from section B.

1. Briefly explain four factors of a learning activity that can bring about efficient learning

Engagement: One factor is engagement, making activities interactive and interesting. In Tanzania, group projects in history lessons engage secondary students, improving focus and retention, enhancing efficient learning.

Relevance: Relevance to students' lives ensures efficient learning, connecting to interests. In Tanzania, math problems on market trading resonate with students, making lessons meaningful and boosting comprehension effectively.

Clarity: Clear instructions and objectives facilitate efficient learning. In Tanzania, teachers provide simple Swahili guidelines for science experiments, reducing confusion and aiding student understanding, improving learning outcomes.

Feedback: Regular feedback during activities enhances efficiency. In Tanzania, teachers review essays on Nyerere's leadership, offering corrections, helping students improve and learn effectively in classroom settings.

2. Briefly explain four factors that a teacher must be consider when selecting the system to use in the teaching and learning process.

Relevance: One factor is relevance, ensuring the system aligns with curriculum goals and student needs. In Tanzania, a teacher selects an e-learning platform for math that covers national standards, enhancing lesson effectiveness and student engagement in the teaching and learning process.

Accessibility: Accessibility, considering availability and cost, is crucial for selection. In Tanzania, rural teachers choose chalkboards over digital systems due to limited internet, ensuring all students can access resources, supporting inclusive education effectively.

Engagement: The system's potential to engage students, through interactivity or visuals, improves learning. In Tanzania, a teacher opts for interactive whiteboards for history, captivating students and boosting retention, making the system impactful for teaching.

Technical Feasibility: Technical feasibility, including infrastructure and teacher skills, ensures usability. In Tanzania, a teacher assesses whether schools have electricity and training for computers, selecting systems like printed materials if tech is unavailable, maintaining effective instruction.

3. Briefly clarify four advantages of using printed transparencies with the overhead projector over wall sheets

Clarity: One advantage is clarity, as transparencies project sharp, detailed images. In Tanzania, secondary teachers use transparencies for science diagrams, offering clearer visuals than hand-drawn wall sheets, enhancing student comprehension.

Flexibility: Transparencies are flexible, allowing easy updates and overlays. In Tanzania, teachers modify history timelines on transparencies, adapting lessons quickly, unlike fixed wall sheets, improving teaching efficiency.

Durability: They are durable, resisting wear better than paper wall sheets. In Tanzania, transparencies withstand frequent use in classrooms, maintaining quality for long-term teaching, supporting consistent education over wall sheets.

Professional Presentation: Transparencies offer professional presentation, enhancing credibility. In Tanzania, geography maps on overheads look polished, boosting student engagement compared to informal wall drawings, improving learning outcomes.

4. Briefly analyze four skills that a learner should develop in order to be able to gather information from websites

Critical Thinking: One skill is critical thinking, evaluating website credibility. In Tanzania, secondary students assess history sites for accuracy, distinguishing reliable sources, enhancing research and learning effectiveness.

Digital Literacy: Digital literacy, understanding website navigation, is essential. In Tanzania, students learn to use search engines for science topics, improving access to educational content and research efficiency online.

Information Organization: Organizing information from websites is key. In Tanzania, students categorize Swahili literature data into notes, managing findings systematically, supporting effective study and retention in lessons.

Time Management: Time management ensures efficient website use. In Tanzania, students allocate study time for geography research, avoiding distractions, maximizing productivity and learning outcomes from online resources.

5. Briefly explain four criteria for evaluating audio-visual teaching and learning materials

Relevance: One criterion is relevance, ensuring materials align with curriculum goals. In Tanzania, teachers check if history videos match syllabi, enhancing lesson effectiveness and student engagement for focused learning.

Clarity: Clarity, with clear audio and visuals, is critical for evaluation. In Tanzania, science animations with distinct narration improve understanding, ensuring materials are effective for student comprehension in classrooms.

Engagement: Engagement, gauging interactivity, ensures effectiveness. In Tanzania, geography documentaries with quizzes captivate students, increasing participation and retention, making materials valuable for teaching and learning.

Quality: Quality of sound and visuals ensures usability. In Tanzania, high-resolution biology clips with clear audio are prioritized, maintaining educational impact and supporting consistent learning outcomes in secondary schools.

6. Identify four environmental factors which may affect effective usability of instructional media

Lighting: One factor is lighting, impacting media visibility. In Tanzania, poor classroom lighting reduces projector effectiveness, requiring adjustments to enhance visibility and ensure effective use of instructional media for learning.

Noise: Noise levels disrupt media usability, affecting focus. In Tanzania, loud environments in rural schools hinder audio lessons, necessitating quiet zones to maintain engagement and comprehension with instructional tools.

Temperature: High temperatures affect media equipment performance. In Tanzania, hot classrooms damage computers or projectors, requiring ventilation to ensure functionality and support effective teaching and learning.

Space: Limited space restricts media setup, reducing usability. In Tanzania, cramped classrooms limit whiteboard use, requiring strategic placement of instructional media to maintain accessibility and educational impact.

7. Briefly explain four consequences of neglecting maintenance of educational media devices used for teaching and learning

Damage: One consequence is device damage, reducing functionality. In Tanzania, neglected projectors break down, disrupting science lessons and requiring costly repairs, hindering teaching effectiveness in secondary schools.

Reduced Lifespan: Neglect shortens media lifespan, increasing replacement costs. In Tanzania, unmaintained computers fail faster, wasting school funds and limiting access to educational tools, impacting learning continuity.

Safety Hazards: It creates safety hazards, like electrical faults. In Tanzania, faulty whiteboards risk shocks, endangering students and teachers, requiring maintenance to ensure a safe learning environment and effective teaching.

Inefficiency: Neglect leads to inefficiency, slowing lessons. In Tanzania, dusty models or slow devices delay history classes, frustrating students and reducing educational outcomes, necessitating regular care for optimal media use.

8. List four properties of educational media appropriate for effective teaching and learning

Clarity: One property is clarity, ensuring content is easy to understand. In Tanzania, science charts with simple diagrams improve student comprehension, enhancing teaching effectiveness and learning outcomes in classrooms.

Relevance: Relevance to the curriculum makes media effective, supporting goals. In Tanzania, history videos on Nyerere align with syllabi, engaging students and ensuring meaningful lessons for effective teaching and learning.

Engagement: Engagement, through interactivity, boosts effectiveness. In Tanzania, interactive whiteboards for math captivate students, increasing participation and retention, making media vital for productive education.

Durability: Durability ensures long-term use, maintaining effectiveness. In Tanzania, laminated posters for geography withstand wear, supporting consistent teaching and learning, reducing replacement needs in schools.

9. Briefly examine four roles of improvisation in teaching and learning facilities in secondary schools in Tanzania

Cost Savings: One role is cost savings, using local materials affordably. In Tanzania, secondary teachers improvise with sticks for math models, reducing expenses and ensuring resource availability, enhancing education effectively.

Accessibility: Improvisation increases accessibility in resource-scarce areas. In Tanzania, rural schools use sand drawings for geography, replacing expensive maps, ensuring all students benefit from visual teaching inclusively.

Engagement: It boosts engagement through creative, hands-on activities. In Tanzania, science teachers craft models from leaves, captivating students and fostering participation, improving learning outcomes and retention in classrooms.

Adaptability: Improvisation adapts to specific needs, addressing local contexts. In Tanzania, history teachers use oral stories for Swahili culture, tailoring lessons to student backgrounds, enhancing relevance and teaching effectiveness.

10. Briefly describe four techniques that can be applied in designing educational media and technology

Simplicity: One technique is simplicity, using clear, minimal designs. In Tanzania, teachers design posters with basic math diagrams, ensuring student comprehension and engagement, enhancing media effectiveness in classrooms.

Interactivity: Incorporating interactivity, like quizzes, improves design. In Tanzania, history teachers include clickable timelines on tablets, engaging students and boosting retention, making media impactful for learning.

Visual Appeal: Using colors and graphics attracts attention in design. In Tanzania, science charts with bright illustrations captivate secondary students, increasing interest and participation, supporting effective teaching and learning.

Relevance: Ensuring relevance to curriculum goals guides design. In Tanzania, geography videos on East African climates align with syllabi, making media meaningful and educational, enhancing student understanding and lesson outcomes.

11. Analyze five situations which can force a teacher to use improvised instructional media in classroom

Improvised Instructional Media refers to locally made or adapted teaching tools, using available resources when standard media is unavailable, critical for education in Tanzania's secondary schools.

Resource Scarcity: One situation is resource scarcity, lacking standard media. In Tanzania, rural teachers use sticks for math models due to no textbooks, ensuring lessons continue, maintaining education despite constraints.

Budget Constraints: Limited school budgets force improvisation, avoiding costs. In Tanzania, secondary teachers craft charts from recycled paper for history, saving funds and sustaining teaching, addressing financial challenges effectively.

Technical Failures: Equipment failures, like broken projectors, necessitate improvisation. In Tanzania, teachers use oral storytelling for science when devices fail, keeping lessons engaging and educational, adapting to technological issues.

Sudden Needs: Unplanned needs, like unexpected topics, require quick improvisation. In Tanzania, geography teachers draw maps on boards for climate discussions, responding immediately, ensuring learning continuity and student understanding.

Cultural Relevance: Local contexts demand culturally relevant media, prompting improvisation. In Tanzania, history teachers use local artifacts for Swahili lessons, connecting with students, enhancing engagement and teaching effectiveness in classrooms.

12. By giving five points, examine the usefulness of internet in education

Internet refers to a global network providing digital access to information, resources, and communication, transforming education in Tanzania's secondary schools.

Research Access: One usefulness is providing research access, offering vast resources. In Tanzania, students use the internet for history projects, accessing global data, enriching content and supporting deep learning effectively.

Interactive Learning: It enables interactive learning through online tools, enhancing engagement. In Tanzania, secondary students use quizzes on educational websites for math, boosting participation and retention, improving educational outcomes.

Collaboration: The internet fosters collaboration, connecting learners globally. In Tanzania, schools use Google Classroom for group projects, sharing ideas, enhancing teamwork and critical thinking for educational progress.

Current Information: It provides current information, updating lessons with real-time data. In Tanzania, geography teachers access climate news online, ensuring lessons reflect global changes, making learning relevant and impactful.

Flexibility: Internet offers flexible learning, supporting self-paced study. In Tanzania, students access e-books anytime for Swahili, accommodating schedules, enhancing accessibility and educational efficiency in secondary schools.

13. Elaborate five functions of worksheets in the teaching and learning process

Worksheets refer to printed or digital documents with exercises, used to reinforce learning and assess understanding, essential in Tanzania's secondary education.

Reinforcement: One function is reinforcing concepts through practice. In Tanzania, math worksheets on algebra solidify skills, helping students retain knowledge and improve performance, enhancing teaching effectiveness in classrooms.

Assessment: Worksheets assess student understanding, providing feedback. In Tanzania, science worksheets test biology facts, enabling teachers to identify gaps, adjust lessons, and support learning progress efficiently.

Engagement: They engage students through interactive tasks, boosting participation. In Tanzania, history worksheets with timelines encourage critical thinking, making lessons dynamic and memorable, improving student involvement and retention.

Organization: Worksheets organize learning, structuring content clearly. In Tanzania, Swahili worksheets list vocabulary, aiding comprehension and study, ensuring structured teaching and learning processes for secondary students.

Self-Paced Learning: They support self-paced learning, allowing individual progress. In Tanzania, geography worksheets enable students to work at their speed, fostering independence and mastery, enhancing educational outcomes effectively.

14. Explain five benefits of using visual aids during the teaching and learning process

Visual Aids refer to tools like charts or models, enhancing learning through visual stimulation, critical for Tanzania's secondary education.

Engagement: One benefit is enhanced engagement, as visuals captivate students. In Tanzania, science teachers use diagrams for biology, making lessons interactive, increasing focus and participation, improving learning outcomes in classrooms.

Clarity: Visual aids provide clarity, simplifying complex concepts. In Tanzania, geography maps clarify landforms, reducing confusion and enhancing student understanding, supporting effective teaching and comprehension.

Retention: They improve retention through memorable imagery. In Tanzania, history timelines on posters help students recall events, reinforcing memory and exam performance, boosting educational effectiveness over time.

Inclusivity: Visual aids support inclusivity, aiding diverse learners. In Tanzania, charts with large text assist visually impaired students, ensuring equitable education and understanding, enhancing teaching impact in secondary schools.

Motivation: They motivate students by making learning enjoyable. In Tanzania, colorful math graphs inspire interest, encouraging effort and participation, driving academic success and engagement in lessons.

15. Examine the benefits for teachers and students to recycle materials in order to develop teaching and learning resources

Recycling refers to the process of collecting, processing, and reusing materials, like paper or plastic, to create educational resources, promoting sustainability in Tanzania's secondary schools.

Cost Savings: One benefit is cost savings, reducing media expenses. In Tanzania, teachers recycle old textbooks into charts, lowering costs for schools and students, ensuring affordable, effective teaching and learning resources.

Environmental Awareness: Recycling fosters environmental awareness, educating users. In Tanzania, students learn sustainability by reusing plastic for models, enhancing eco-friendly habits and supporting science education, benefiting teaching and learning.

Resource Availability: It ensures resource availability, using local materials. In Tanzania, teachers craft geography maps from recycled cardboard, maintaining supplies in resource-scarce areas, supporting consistent education for all students.

Creativity: Recycling encourages creativity in resource development. In Tanzania, students design history posters from waste, fostering innovation and engagement, enriching teaching and learning processes with unique, sustainable media.

Durability: Recycled materials, when constructed well, offer durability. In Tanzania, laminated recycled paper charts for math withstand use, providing long-term resources, enhancing teaching efficiency and student access in classrooms.

16. Evaluate the potential strengths of audio media in the teaching and learning process

Audio Media refers to sound-based tools, like recordings or podcasts, used to deliver educational content, enhancing learning in Tanzania's secondary schools.

Accessibility: One strength is accessibility, requiring no visuals, aiding diverse learners. In Tanzania, rural schools use radio for Swahili lessons, reaching students without electricity, ensuring inclusive education and effective teaching.

Engagement: Audio media increases engagement through storytelling and sound effects. In Tanzania, history podcasts narrate Nyerere's life, captivating students, boosting participation and retention, improving learning outcomes in classrooms.

Clarity: It provides clarity, simplifying complex concepts through narration. In Tanzania, science audio clips explain biology processes, reducing confusion and enhancing student comprehension, supporting effective teaching strategies.

Flexibility: Audio offers flexibility, supporting self-paced learning. In Tanzania, students listen to math recordings anytime, accommodating schedules, enhancing accessibility and educational efficiency in secondary schools.

Cost-Effectiveness: It is cost-effective, using inexpensive devices like radios. In Tanzania, schools use basic audio players for geography, saving on visual media costs, ensuring affordable, impactful teaching and learning resources.

17. Examine five advantages of motivating students using educational media during teaching and learning

Educational Media refers to tools like videos or models, used to engage and inspire students, critical for Tanzania's secondary education.

Increased Engagement: One advantage is increased engagement, as media captivates students. In Tanzania, science videos on ecosystems motivate secondary students, boosting participation and interest, enhancing learning outcomes effectively.

Improved Retention: Motivating media improves retention through interactive content. In Tanzania, history charts with visuals help students recall events, reinforcing memory and exam performance, supporting long-term educational progress.

Enhanced Motivation: It enhances motivation, making learning enjoyable. In Tanzania, colorful math graphs inspire effort, encouraging students to excel, driving academic success and participation in lessons.

Better Understanding: Media motivation improves understanding through clarity. In Tanzania, Swahili audio scripts simplify literature, aiding comprehension, boosting student confidence and learning effectiveness in classrooms.

Reduced Boredom: It reduces boredom, maintaining student interest. In Tanzania, geography models prevent monotony, keeping students focused and engaged, improving teaching quality and educational outcomes over time.

18. Describe how educational media and technology can be used to promote retention of learning materials during the teaching and learning process

Educational Media and Technology refers to tools like charts, videos, and computers, used to reinforce memory and understanding, essential for Tanzania's secondary education.

Visual Stimulation: One way is using visual stimulation, like images, to reinforce memory. In Tanzania, science posters on cell structures help students retain biology concepts, improving recall and exam performance effectively.

Repetition: Media repetition, such as audio recordings, maintains retention. In Tanzania, teachers replay Swahili literature clips, reinforcing key themes, aiding long-term memory and understanding in classroom lessons.

Interactivity: Interactive tools, like quizzes on tablets, boost retention through engagement. In Tanzania, math apps with practice questions reinforce skills, enhancing student memory and learning outcomes in secondary schools.

Multisensory Learning: Combining senses, like sight and sound, promotes retention. In Tanzania, geography videos with narration engage multiple senses, making lessons memorable and supporting sustained learning over time.

Contextual Relevance: Media relevant to students' lives enhances retention by connecting to experiences. In Tanzania, history timelines on Nyerere, tied to local culture, resonate with students, improving memory and comprehension of learned content.