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: 2011**

Instructions

1. This paper consists of section A and B.

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

1. Outline four strategies used to facilitate effective use of a chalk board

Clear Writing: One strategy is clear writing, using legible handwriting and colors. Math teachers use bold chalk for equations, improving visibility and student comprehension in secondary classrooms.

Organization: Organizing content logically, with headings, aids understanding. History teachers structure timelines neatly, enhancing teaching efficiency and learning outcomes effectively.

Regular Cleaning: Cleaning the board regularly maintains visibility. Science teachers erase and polish boards weekly, ensuring clear displays, supporting consistent teaching and learning.

Interactive Use: Encouraging student participation, like writing, boosts engagement. Geography teachers invite students to draw maps, making lessons interactive and memorable, improving educational impact.

2. What factors should the teacher consider in order to use a model effectively as a teaching aid in the teaching and learning process

Relevance: One factor is relevance, ensuring the model aligns with curriculum goals. Biology teachers use human anatomy models for lessons, enhancing understanding and teaching effectiveness in classrooms.

Safety: Safety, preventing hazards during use, is crucial. Science teachers secure plant models, avoiding injuries, maintaining a safe learning environment and supporting effective teaching.

Durability: Durability ensures long-term usability, withstanding handling. Geography terrain models are robust, lasting through repeated use, supporting consistent education and resource availability in schools.

Engagement: Engagement, through hands-on interaction, boosts learning. Math teachers allow students to manipulate geometric models, increasing interest and participation, enhancing teaching and learning outcomes.

3. Explain four factors that should be considered by a teacher in designing a visual aid for classroom use

Relevance: One factor is relevance, ensuring the aid aligns with curriculum goals. History teachers design Nyerere timelines, enhancing lesson effectiveness and student engagement for focused learning.

Clarity: Clarity, with simple language and visuals, ensures comprehension. Science teachers use clear biology diagrams, avoiding confusion, improving teaching and learning outcomes in classrooms.

Engagement: Engagement potential, through visuals, boosts learning. Geography maps with colors captivate students, increasing participation and retention, making aids impactful for teaching.

Durability: Durability ensures long-term use, reducing replacement needs. Laminated charts for math withstand wear, maintaining quality for consistent teaching and learning in schools.

4. Explain any two roles which creative art play in the teaching and learning process

Engagement: One role is enhancing engagement, making lessons interactive. History teachers use drawings of Nyerere's era, captivating students, boosting participation and retention, improving learning outcomes.

Expression: Creative art fosters expression, allowing student creativity. Science students sketch cell structures, reinforcing understanding and personalizing learning, enhancing teaching effectiveness in classrooms.

5. State four advantages of using graphic materials in the teaching and learning process

Clarity: One advantage is clarity, simplifying concepts visually. Science teachers use biology diagrams, reducing confusion and enhancing student comprehension, improving teaching effectiveness.

Engagement: Graphics increase engagement, captivating students. Geography maps with colors interest learners, boosting participation and retention, enhancing learning outcomes in classrooms.

Retention: They improve retention through memorable visuals. History timelines help students recall events, reinforcing memory and exam performance, supporting effective teaching over time.

Cost-Effectiveness: Graphics are cost-effective, using affordable materials. Hand-drawn charts for math save costs, ensuring accessible, durable resources for all students in schools.

6. Identify four strengths of modern media and technology as teaching and learning tools

Interactivity: One strength is interactivity, engaging students digitally. Science simulations on tablets captivate, boosting participation and retention, enhancing learning outcomes effectively.

Efficiency: Modern media improves efficiency, streamlining tasks. Computers grade math quizzes quickly, saving time, enhancing teaching productivity and lesson delivery in classrooms.

Accessibility: It expands accessibility, reaching remote areas digitally. E-books for history access rural schools, ensuring inclusive education, supporting effective teaching and learning.

Flexibility: Modern tools offer flexibility, supporting varied learning. Students use videos for Swahili anytime, accommodating schedules, enhancing teaching and learning efficiency in schools.

7. Outline two properties of instructional media which are suitable for blind students

Tactile Features: One property is tactile features, allowing touch-based interaction. Braille textbooks for Swahili enable blind students to read, enhancing inclusive education and comprehension in classrooms.

Auditory Support: Instructional media with audio, like narrations, suits blind learners. Science podcasts assist blind students, providing content access, compensating for visual limitations and supporting effective teaching.

8. Identify and briefly explain the major difference between visual media and audio media

Visual Media: Visual media, like charts, uses images for teaching, engaging sight. Geography maps clarify landforms, but blind students cannot access them, limiting inclusivity in classrooms.

Audio Media: Audio media, like recordings, uses sound for instruction, engaging hearing. Swahili narrations aid blind students, but sighted learners may find it less engaging, highlighting a key difference in sensory focus.

9. By giving examples elaborate two situations which may necessitate teachers to improvise Educational Media and Technology

Resource Scarcity: One situation is resource scarcity, lacking standard media. Rural science teachers use sticks for models due to no textbooks, ensuring lessons continue, maintaining education effectively.

Technical Failures: Equipment failures, like broken projectors, necessitate improvisation. History teachers use oral storytelling for Nyerere's era when devices fail, keeping lessons engaging and educational, adapting to challenges.

10. Briefly provide any two reasons why recycling of waste materials should be practiced

Cost Savings: One reason is cost savings, reducing media expenses. Teachers recycle paper for charts, lowering costs for schools, ensuring affordable education and sustainable teaching resources.

Environmental Conservation: Recycling conserves the environment, reducing waste. Reusing plastic for models minimizes landfill use, educating students on sustainability, supporting eco-friendly education in schools.

11. Discuss five limitations of using electronic media in the teaching and learning process

Electronic Media refers to digital tools like computers, used for instruction, facing obstacles for educators.

Cost: One limitation is high cost, straining budgets. Rural schools find computers expensive, limiting use, forcing reliance on books and reducing technological integration in teaching.

Infrastructure: Inadequate infrastructure, like electricity, restricts use. Many rural schools lack power, hindering projector use, forcing reliance on print and reducing media's educational impact.

Technical Skills: Teachers lack technical skills, complicating use. Educators untrained in software struggle with science tools, slowing lessons and impacting teaching effectiveness, necessitating training for optimal use.

Access Inequality: Unequal access creates disparities, favoring urban schools. Urban secondary schools use digital tools, while rural areas lack them, widening educational gaps and hindering nationwide technology adoption.

Maintenance: Electronic media requires regular maintenance, adding costs. Broken tablets in schools need repairs, straining budgets and disrupting lessons, limiting consistent use for learning.

12. Over Head Projector (OHP) can be an effective tool in improving classroom practices. Elaborate two aspects which should be considered so as to utilize this tool effectively

Over Head Projector (OHP) refers to a device projecting transparencies for teaching, used to enhance instruction.

Clarity: One aspect is ensuring clarity, using sharp, legible transparencies. Science teachers prepare clear biology diagrams, improving student comprehension and teaching effectiveness during OHP use in classrooms.

Maintenance: Regular maintenance, like bulb replacement, ensures functionality. Schools service OHPs, preventing breakdowns, supporting consistent use and efficient teaching practices for learning outcomes.

13. Discuss five factors which should be considered during the selection of educational media for teaching and learning purposes

Educational Media refers to tools like charts or videos, chosen for instruction, requiring careful selection for effectiveness.

Relevance: One factor is relevance, ensuring media aligns with curriculum goals. Science teachers select biology videos, enhancing lesson effectiveness and student engagement for focused learning.

Cost-Effectiveness: Cost-effectiveness ensures affordability, fitting budgets. Rural schools choose affordable charts over tech, maintaining resources for all students, supporting inclusive education.

Durability: Durability ensures long-term usability, reducing replacement needs. Laminated posters for geography withstand wear, maintaining quality for consistent teaching and learning in schools.

Engagement: Engagement potential, through interactivity, improves selection. History teachers pick videos with quizzes, captivating students and boosting retention, making media impactful for teaching.

Accessibility: Accessibility, considering availability, is crucial. Rural schools prioritize print media for Swahili, ensuring all students access resources, supporting effective and inclusive education.

14. Video as an audio-visual media is useful in supporting the teaching and learning process. Elaborate five important steps which can be employed in order to utilize the media effectively

Video refers to a digital or analog recording combining sound and visuals, used for instruction, enhancing education effectively.

Planning: One step is planning, selecting relevant content. Science teachers choose biology documentaries, aligning with curriculum, ensuring effective lesson preparation for teaching and learning.

Preparation: Preparing equipment, setting up devices, follows planning. Teachers test projectors in history classes, ensuring video quality, enhancing classroom instruction and student engagement.

Presentation: Presenting the video, showing it to students, is key. Geography teachers display maps with narration, captivating students, improving comprehension and retention during lessons effectively.

Interaction: Facilitating interaction, engaging students, enhances use. Math teachers pause videos for discussions, boosting participation and understanding, supporting active learning and teaching outcomes.

Evaluation: Evaluating impact, assessing learning, concludes use. Science teachers review quiz results post-video, refining strategies, ensuring videos improve teaching and learning processes in classrooms.

15. Broadcasting as a teaching media is advantageous to both students and teachers. Justify this statement by giving five points

Broadcasting refers to transmitting audio or video content, like radio or TV, used for instruction, benefiting educators and learners.

Accessibility: One advantage is accessibility, reaching remote areas. Rural schools use radio for Swahili, ensuring students and teachers access lessons without tech, supporting inclusive education effectively.

Engagement: Broadcasting engages students aurally and visually, enhancing learning. Science broadcasts captivate learners, boosting participation, benefiting teachers by simplifying instruction and improving outcomes.

Cost-Effectiveness: It is cost-effective, using affordable devices. Schools use basic radios for history, saving funds for both students and teachers, ensuring sustainable, impactful teaching and learning.

Flexibility: Broadcasting offers flexible, self-paced learning. Students listen to math lessons anytime, benefiting teachers by reducing classroom time, enhancing teaching efficiency and student comprehension.

Current Information: It provides current information, updating lessons. Geography broadcasts deliver climate news, benefiting teachers and students by keeping content relevant, improving educational impact in schools.

16. One student reflects on her learning and says, “I hear and I forget; I see and I remember; I touch and I understand”. In the context of educational media and technology, provide five arguments to support this statement

Educational Media and Technology refers to tools like audio, visuals, and models, used to enhance learning through sensory engagement.

Auditory Limitation: One argument is auditory learning’s limitation, as hearing alone may not stick. Students forget Swahili audio lessons without visuals, supporting the need for seeing to remember, enhancing teaching effectiveness.

Visual Reinforcement: Seeing visuals improves memory, reinforcing learning. Science diagrams help students recall biology, validating the statement, as visual media aids retention over audio in classrooms.

Tactile Understanding: Touching models deepens understanding, beyond hearing or seeing. Geography students handle terrain models, grasping landforms fully, supporting the statement and enhancing learning outcomes through hands-on media.

Multisensory Integration: Combining senses maximizes learning, as the statement suggests. History videos with models engage hearing, seeing, and touching, improving comprehension and retention, validating media’s role in education.

Engagement Levels: Higher engagement through touch ensures understanding, surpassing hearing or seeing. Math students manipulate models, mastering concepts deeply, reinforcing the statement and boosting teaching impact in lessons.

17. Elaborate the contention that effective and efficient teaching and learning lies in the application of educational media and technology

Educational Media and Technology refers to tools like charts and computers, used to enhance instruction, driving effective and efficient education.

Engagement: One contention is enhanced engagement, making learning interactive. Science videos captivate students, boosting participation and retention, ensuring effective teaching and efficient learning outcomes in classrooms.

Clarity: Media and technology provide clarity, simplifying concepts. Geography maps on projectors clarify landforms, reducing confusion, supporting efficient teaching and effective student comprehension in lessons.

Efficiency: They improve efficiency, streamlining tasks. Computers grade math quizzes quickly, saving time, enhancing teaching productivity and ensuring effective, efficient learning processes in schools.

Accessibility: Media ensures accessibility, reaching diverse learners. Audio recordings for Swahili assist rural students, making education inclusive and efficient, supporting effective teaching across schools.

Motivation: It motivates students, making learning enjoyable. History animations inspire effort, encouraging deeper understanding and participation, driving effective and efficient educational outcomes in classrooms.

18. Discuss five roles of educational media and technology during lesson presentation in a classroom

Educational Media and Technology refers to tools like videos or projectors, used for instruction during lessons, enhancing classroom presentations effectively.

Instruction: One role is instruction, delivering content clearly. Science teachers use projectors for biology diagrams, aiding student understanding, improving teaching efficiency during lesson presentations in classrooms.

Engagement: It increases engagement, captivating students. History videos engage learners, boosting participation and retention, enhancing learning outcomes through interactive media during lesson presentations.

Assessment: Media supports assessment, evaluating progress. Online quizzes on tablets assess math skills, providing feedback, enhancing teaching strategies and student improvement during lesson presentations in schools.

Motivation: It motivates students, making lessons enjoyable. Geography animations inspire interest, encouraging effort and participation, driving academic success and engagement during lesson presentations in classrooms.

Resource Enhancement: Media and technology enhance resources, providing diverse materials. Science models and digital maps enrich lessons, ensuring comprehensive content access, supporting effective lesson presentations and learning.