

ICT In Education Educators' Course

Paper II: Knowledge Deepening Cycle Examination

Memorandum

Time: 90 minutes
Marks: 100

- Read the questions carefully
 - Ensure that your script has your name clearly printed at the top. If you have a student number insert this data too.
 - Number your answers exactly as the questions are numbered on this question sheet.
 - Work in an orderly way and present your answer as neatly as possible.
 - You are strongly encouraged to type your answers on a computer using a word processor but should you be concerned that this will take too long then a hand written submission is acceptable.
 - Accurate and adequate factual knowledge is essential but equally important is the ability to use the correct technical terms appropriately.
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Section 1: Understanding ICT in Education

1. According to the guidelines used in this course when planning a learning activity you should ask yourself four 'big' questions. The questions can be summarized as:
 - a. Who? Why? What? When?
 - b. Who? Why? How? Will? (Correct)
 - c. Why? How Much? When? Will?
 - d. Who? Why? How? How Much?
2. Which of the following objectives is NOT an objective of the ICT4 Guyana National Strategy? (2)
 - a. To promote the development of ICT services and businesses to increase job opportunities and generally to improve the economic and social well-being of Guyanese;
 - b. To ensure access to reliable ICTs at the lowest sustainable prices so that all Guyanese have the opportunity of participating in the information and knowledge society;
 - c. To create a new generation of citizens that can use ICTs to leapfrog Guyana's development;
 - d. To use ICT to encourage globalization and the adoption of global values that can modernize and replace outdated and old Guyana methods and culture. (Correct)

(2)

3. The objectives of the Revised National Information Technology Guides do NOT include:
- a. Guide the teaching of Information Technology in schools;
 - b. Help teachers improve their Information Technology skills;
 - c. Help to prepare students for Information Technology at the Caribbean Examination Council (CXC) and Caribbean Advanced Proficiency Examination (CAPE);
 - d. Serve as a tool for students who choose not to write IT CXC or CAPE but need to have a working knowledge of IT for the world of work.
 - e. All of the above
 - f. **None of the above (Correct)**

(2)

4. In a short paragraph of no more than 200 words explain the relationship that should exist between subject curriculum statements and curriculum guides, and your teaching at one level and national development priorities at the other.

(8)

Model Answer: Ideally all should be linked (✓✓). National Development Priorities, once identified, should inform first the curriculum statements and eventually what we cover in the classroom (✓✓). Teachers are an important component in developing the knowledge, values and skills (✓✓) required by the next generation to surmount issues (✓) or capitalize on opportunities (✓) identified by the generation before.

5. Describe three ways that technology is being used to support and even strengthen the integration of national policy at the classroom level.

Model Answer: One way is Distribution of Documents (✓✓) where the Internet has provided a way for educators at all levels to easily access government education documents. Previously these documents were notoriously difficult to get hold of. Now teachers can access digital copies from a central site. More and more ministries are now encouraging Communication (✓✓) directly between teachers and the ministry using various social network tools so that they can hear issues coming from the 'grass roots' directly. Perhaps a more obvious way is that the teaching of computer skills or 'soft skills' (✓✓) as part of the teaching of formal subjects. Most nations now have an ICT policy calling for the wide dissemination of these skills and all teachers can participate in achieving this goal.

(6)

Section Sub Total: (20)

Section 2: Curriculum and Assessment

6. Use the table below to develop a lesson activity for your teaching subject or learning area that encourages the development of a particular *functional skill* through the use of *technology*.

<i>Lesson Plan</i>	
Level (Primary/Secondary):	
Grade:	
Subject:	
Topic:	

Objective: <i>(Include specific reference to a particular functional skill)</i> Ideally here we want the candidate to identify something like, 'Communicate effectively, Express a point of view, use ICT to communicate effectively, demonstrate analytical and reasoning skills, draw logical conclusions from evidence, validate and interpret results' etc. Not something drawn from the curriculum statements. (✓✓✓✓✓)	
- Skills:	(✓✓)
- Knowledge:	
- Attitude:	
Content:	
Description of Activities (Methods/Strategies/Materials): <i>Include a description of how technology will be employed to facilitate the acquisition of the functional skill.</i>	It is important that here the candidate incorporates some type of technology to effectively elicit a functional skill. For example the grammar and spell check facility in a word processor is used to help the student communicate clearly and effectively. (✓✓✓✓✓)
Evaluation:	
Areas of Integration:	Here provide additional marks if they can show how the lesson integrates beyond the curriculum with other subjects and skill sets. (✓✓✓)

(15)

7. In a short paragraph of no more than 500 words describe the positive characteristics of using a Rubric in the evaluation of student work.

The rubric brings to the marking process a number of advantages. Firstly it provides multiple markers a standardized set of marking standards (✓). A detailed rubric offers markers a sense of graduation or a range of marks to awards. They can see how many marks to awards increasingly sophisticated answers (✓). It also speeds up marking by providing a template to guide the marking process (✓). It also can offer opportunity for peer and student assessment (✓). It can focus markers on the need to measure a stated objective or outcome. (✓)

(5)

Section Sub Total: (20)

Section 3: Pedagogy

8. In a paragraph of no more than 500 words describe the philosophical justification for using Problem Based Learning (PBL). What views or perspectives underpin the teaching and learning using this approach?

Problem based learning is derived from Piaget's theories of Constructivism (✓) and Papert's Constructionism (✓). The thinking is that students learn by constructing understanding through a process of engagement with the content. This process is often termed as 'Learning by doing.' (✓✓) Consequently PBL is usually based around the requirement to answer an open ended question (✓✓) the answer of which is not obvious and requires research, reflection, synthesis and analysis or some combination of higher order thinking skills. (✓) In answering the question students are forced to think beyond rote processes and consequently are more likely to internalize (✓) the lessons learnt.

(8)

9. It is possible to design a PBL project that does not use digital technologies so describe what role computers and the Internet might play in implementing a PBL project. In what ways can technology enhance a PBL project?

The age of the Internet has made PBL easier than ever before. As research is an essential component of the model the Internet now offers an enormous database of information and resources. (✓✓✓) Teachers are no longer held ransom by the quality and quantity of the school's resource center as they can encourage students to access and analyse data found on the web.

Productivity tools such as an Office Suite provide students with open ended tools to demonstrate what they have discovered. (✓✓✓) They can write up their findings in a word processor, illustrate using multimedia with a presentation package, if the solution is mathematical they can use a spreadsheet etc.

Communication Tools also allow students to discuss issues with experts beyond the school. They are no longer confined to their community to get expert opinions. (✓✓)

(8)

10. Describe how the use of a presentation package might support learners using the 'Jig Saw Approach'.

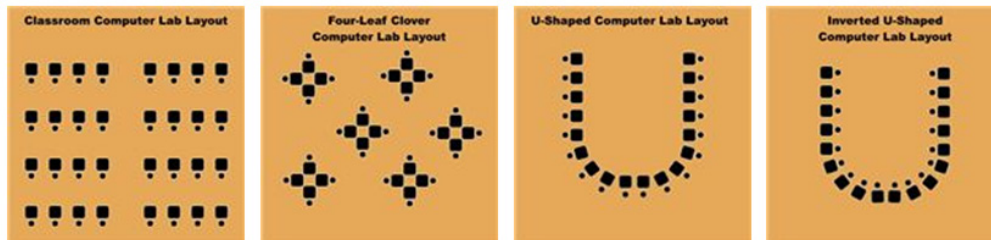
An obvious use is for the various student 'experts' to construct their findings into a presentation to aid them instruct those students in their home groups. The multimedia functionalities will make teaching their peers easier. (✓✓)

(2)

Section Sub Total: (20)

Section 4: Organization and Administration

11. Study the diagrams below and then answer the following question:



Describe for what teaching purposes/activities each of these computer laboratories layouts would be appropriate and then identify a layout that you believe would suit your teaching style. Justify your answer.

Classroom Layout: This approach is very common and is useful if the lesson is instructor controlled. All attention is focused on the teacher and therefore they are the centre of the lesson. This method is also good if you want to keep high levels of control over the learners because you are able to see everyone. By standing at the back of the room one can also see all the monitors and review what the learners are doing on the computers. (✓✓✓✓)

Four Leaf Clover Layout: This layout is good for group work. It allows groups of four individuals to work collaboratively on a piece of work. The Jigsaw method of teaching would benefit from this type of layout. (✓✓✓✓)

U Shaped Layout: The focus is into the centre of the room consequently this method is useful if you want to use the venue for teaching methods over and above computer work. Learners can therefore also see demonstrations, role play and listen to teacher exposition. (✓✓✓✓)

Inverted U Shaped layout: This layout is best for individual work on the computers where you want learners to work undistracted. The focus is on the computer. There are never more than two peers on either side who could be used for group work or who might be a distraction. Teacher control is high as they can see the computer monitors and what learners are working on. (✓✓✓✓)

There are also 4 marks available for a reflective consideration of which layout they would choose and why. (✓✓✓✓)

(5x4=20)

Section Sub Total: (20)

Section 5: Life Long Learning

12. Provide a brief description of the concept Personal Learning Network (PLN).

Wikipedia: “A personal learning network is an informal learning network that consists of the people a learner interacts with and derives knowledge from in a personal learning environment. In a PLN, a person makes a connection with another person with the specific intent that some type of learning will occur because of that connection.” In recent times these networks are constructed using social media.

(4)

13. According to various education experts such as ‘Once a Teacher’ what contributions might a PLN make to you as a teacher. Provide some practical, concrete benefits that can be derived from building and participating in such a structure.

- Professional development – learn from content-area specialists;
- Locate resources for your classroom, such as free websites and software;
- Get lesson plan ideas from master teachers;
- Learn about new technology and how to integrate it into your teaching;
- Find collaborative solutions;
- Find interesting links to education news.

(4)

14. Identify some social networking tools that can be used in setting up a PLN and explain what their services are.

- Twitter – Short text messaging
- Facebook – social groups
- LinkedIn – social groups for professionals
- GoogleTalk – Instant messaging
- eMail – electronic messages
- Skype – Video Telephone.

(6)

15. According to David Warlick (2006) there are three main PLN types. Briefly describe the three types.

Personally maintained synchronous connections. This is the traditional network that includes the people and places you consult to answer questions, solve problems and accomplish goals. Today, however, you can enhance this PLN with new tools such as chat, instant and text messaging, teleconferencing (using iChat, Skype, uStream), Twitter, and virtual worlds such as Second Life. It’s like attending a meeting at work, only better, because the traditional barriers of geography, background, language and culture become transparent.

Personally & socially maintained semi-synchronous connections.

For networked learners, these are conversations that are not exactly conversations. They may be questions directed toward a single friend or associate, but more likely they are sent out to a community of people who, because of their interests, expertise, or perspectives, are in a position to help you do your job. Semi synchronous refers to the idea that collaboration doesn’t have to happen in real time. Not only can the collaborators be geographically distant, but they

can also participate in a discussion when it works best for their schedules, regardless of time zones or office hours. The tools you can use to build and grow this type of network include mailing lists, wikis, Google Docs, Twitter, group discussion boards and comment walls in Facebook, and commenting on blogs, among others.

Dynamically maintained asynchronous connections. The first two types of PLN connect us with each other, but this type more often connects us with content sources that we have identified as valuable. The central tool for dynamically maintained asynchronous connections is the RSS aggregator. Aggregators such as Google Reader, Netvibes and Pageflakes are now at the core of many educators' PLNs because they bring us information that helps us do our jobs. In a sense, this technology has inspired a shift from a hunting and gathering information economy to the domestication of the information landscape. When you subscribe to tagged Flickr photos, new videos from YouTube or TeacherTube, Google News searches or podcasts, you are training all this information to organise and deliver itself to you. For example, after finding an education blog through a blog search on Technorati, you can subscribe to its RSS feed with your aggregator. Then you can sit back and relax, waiting for the software to periodically check for new posts, retrieve them as they appear and make them available for reading at your leisure.

(3x2=6)

Section Sub Total: (20)

Examination Total: (5x20=100)