

EVALUATING ICT - ENHANCED CONTENT: A FRAMEWORK

Patti Swarts

NIED – 31 January 2006

Dilemma

ICTs can be powerful, essential tools for learning: understanding, interpreting and communicating about the real world

OR

They can be black holes into which we pour our money, intelligence and time, getting very little in return

Roles ICTs Can Play

- Mitigate teacher shortages
- Address inequalities: gender, language, disability
- Improve cost-effectiveness under certain circumstances
- Provide for public-private partnerships
- Provide window to demonstrate new learning paradigms
- Provide a more integrated and seamless vision of learning venues and opportunities as they can eliminate geographic barriers inadequate capacity and structures to effectively deal with ICT in education and challenges related to policy development

However...

- Fundamental issues of education development cannot be resolved in isolation
- Necessity of coherent national policy on ICT in education - catalyst for successful ICT integration and training
- ICTs must serve, rather than drive, implementation of education strategies
- Integrating technology effectively into learning systems is complicated
- Enabling environment needed: encourages and supports innovative ICT-based educational programmes

What is ICT - based content?

- ICT-based content is described in the literature as instructional content or learning experiences delivered or enabled by technology and designed to:
- provide wider access (e.g. can make distance learning a reality in African schools and on a scale not seen before)
- be available on demand
- increase information, knowledge, skills, and productivity
- improve quality
- positively impact on achievement/learning outcomes and the learning environment

The potential of ICT - based learning

- extend the capabilities of conventional or formal education (more options, more freedom of choice, extends reach of learning)
- improve access and quality
- provide tools for teacher development
- provide for interactive learning
- accelerate learning (self-directed; self-paced; students more motivated and interested and take more responsibility for learning)
- be delivered independent from location and time
- allow for both sides of the brain to be used (rather than the linear primary mode of learning in conventional formal education) thereby stimulating creativity and the development of higher-order skills (exploration, analysis, synthesis, problem-solving, reflection)
- allow for substantial savings in training

On the downside ...

ICT-based content:

- is generally more expensive to develop [but more cost-effective to deliver]
- may lack pedagogical support within educational content and software
- may lack pedagogical quality (inappropriate lesson plans, superficial nature of content, unimaginative approaches)
- may require extensive re-thinking of educational philosophy, goals, processes, approaches, teacher development (i.e. reform/overhaul of system)
- may require additional resources leading to additional cost
- may require extensive donor and private sector contributions (governments in LDCs will not be able to afford the associated costs without assistance)
- depending on the technology and platforms, may require license fees

GeSCI Framework for Evaluation of Content

1. Quality & Comprehensiveness of Content

[Tickboxes]

Rating 1 - 4

- Content is relevant to the context
- Course description is clear and complete
- Content/software provides a clear educational value proposition
- Materials contain all the relevant information and do not deceive or mislead by omission
- Material is differentiated to present a range of challenges to students with different learning needs and styles
- Material is aligned with the pedagogical principles and goals of the curriculum
- Content facilitates/enhances the development of higher order thinking skills (allows for user evaluation, analysis, synthesis, problem-solving and reflection)

Content x	Content y	Content z
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●

continued...

GeSCI Framework for Evaluation of Content

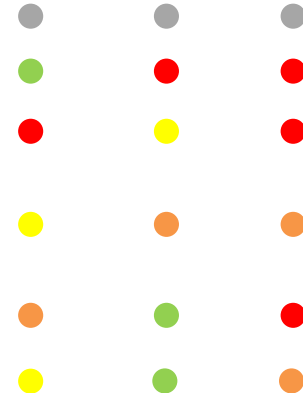
1. Quality & Comprehensiveness of Content

[Tickboxes]

- The sound is clearly understandable and consistent in quality and volume
- It provides for continuous assessment or other appropriate forms of assessment
- The material encourages awareness among students about the subject as well as encourage cognitive evaluation of the said subject
- The material is accurate and up-to-date (i.e. statements are consistent with established fact)
- The sound is clearly understandable and consistent in quality and volume
- Sound and music are relevant to screen displays

Rating 1 - 4

Content x	Content y	Content z
-----------	-----------	-----------



Overall - Quality & Comprehensiveness of Content:
Average Score – Quality & Comprehensiveness:



GeSCI Framework for Evaluation of Content

2. Ease of use, Functionality, Navigation and Orientation

[Tickboxes]

- Content Language, word choice, organization and sentence length are suited to the primary target audience. Vocabulary is appropriate.
- The material is flexible (i.e. it can be used any time, anywhere; but also is adaptable to context and for assessment purposes)
- Content is complemented by the use concrete materials (manipulatives/teaching aids)
- It needs or uses (other) technology to reinforce/augment learning
- A search facility exists and it supports a range of reading abilities
- On-screen written instructions are understandable
- Graphics, buttons and icons make sense to the intended user
- There is a suitable help option
- Links are useful and robust
- It allows for tracking of individual or group achievement
- User can print, save and download resources

Rating 1 - 4 ● ● ● ●

Content x	Content y	Content z
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●

continued...

GeSCI Framework for Evaluation of Content

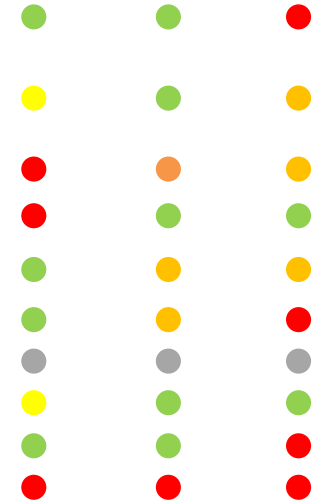
2. Ease of use, Functionality, Navigation and Orientation

[Tickboxes]

- Descriptions of specific hardware requirements for operating the application are provided
- Instructions for installation and operation or a toll free technical support telephone number are provided
- The interface is clear and intuitive
- Navigation around the site or software is flexible
- The structure of the site or software and the user's location is apparent
- The material is well organized
- Users can bookmark or save their position
- It is easy to keep individual student records
- It is easy to set the difficulty level
- Users can exit at any point

Rating 1 - 4 ● ● ● ●

Content x	Content y	Content z
-----------	-----------	-----------



Overall – Easy to Use:
Average Score – Easy to Use:



GeSCI Framework for Evaluation of Content

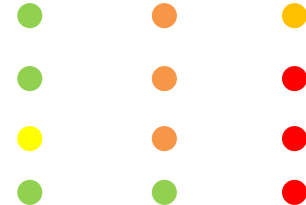
3. Attractiveness of design and quality of craftsmanship

[Tickboxes]

- Content is interesting and motivating for target audience (teachers, students)
- Design is based on relevant research
- Design is appropriate with regard to stated goals and objectives
- Content contains features that make it interesting and interactive (e.g. graphics, simulations, animations)

Rating 1 - 4

Content x	Content y	Content z
--------------	--------------	--------------



Overall – Attractiveness of design:
Average Score – Attractiveness of design:





































GeSCI Framework for Evaluation of Content

4. Appropriateness of content for intended purpose

[Tickboxes]

- The content contributes towards addressing of learning objectives of system (including skills to be developed)
- It is contextually relevant for the age range and educational stage (skills/knowledge level required)
- It is aligned with country's pedagogical philosophy
- Content anticipates learning difficulties and includes strategies to address them
- It provides opportunities for enrichment beyond the curriculum
- It is culturally sensitive/transferable
- It allows for the exploitation of new learning opportunities
- It will facilitate the acquisition of specific competencies
- Content will enhance information handling or ICT skill
- It will enhance creative or logical thinking

Rating 1 - 4				
				
	Content x	Content y	Content z	
				
				
				
				
				
				
				
				
				
				

continued...

GeSCI Framework for Evaluation of Content

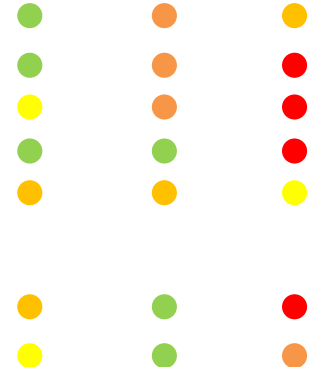
4. Appropriateness of content for intended purpose

[Tickboxes]

Rating 1 - 4 ● ● ● ●

Content x Content y Content z

- Content provides for different learning styles
- Content aids and/or develops conceptual understanding
- It provides for practice and application of understanding/skill
- Points of view are fairly represented (objective, no apparent bias)
- The material is gender-neutral and non-discriminatory (i.e. the text and illustrations are free of any content that could be considered derogatory toward a particular group)
- It will enhance collaboration and interaction with others
- It has value as an independent activity



Overall – Appropriateness of content:
Average Score – Appropriateness of content:



GeSCI Framework for Evaluation of Content

5. Value added through interactivity and multimedia

[Tickboxes]

- Content is enhanced through the use of other media/ technology to reinforce/augment learning?

Rating 1 - 4 

Content
x

Content
y

Content
z



Overall – Value added through interactivity:
Average Score – Value added through interactivity:



3.00



3.00





















2.00

GeSCI Framework for Evaluation of Content

6. Maintenance and support

[Tickboxes]

Rating 1 - 4 

	Content x	Content y	Content z
<input type="radio"/> The content is copyright free			
<input type="radio"/> Descriptions are provided of specific hardware requirements for operating the application			
<input type="radio"/> Instructions for installation and operation or a toll free technical support telephone number are provided			
<input type="radio"/> Content is value for money / free			
<input type="radio"/> Content is able to run on existing hardware			
<input type="radio"/> A license is not required to use the content or operate the software			

Overall – Maintenance and support:
Average Score – Maintenance and support:
























GeSCI Framework for Evaluation of Content

Summary

Rating 1 - 4



	Content x	Content y	Content z
Quality & Comprehensiveness of Content:	 2.58	 3.00	 1.83
Ease of use, Functionality, Navigation and Orientation:	 3.05	 2.89	 2.05
Attractiveness of design and quality of craftsmanship:	 3.75	 2.5	 1.25
Appropriateness of content for intended purpose:	 3.00	 2.78	 1.88
Value added through interactivity and multimedia:	 3.00	 3.00	 2.00
Value added through interactivity and multimedia:	 3.50	 2.67	 1.50
Value added through interactivity and multimedia:	 3.15	 2.79	 1.75