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TITLE: Capacity Building in ICT across nine developing countries

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ABSTRACT

Mindset Network is a non government organisation (NGO) which creates open digital educational content that is aligned to national policies and curricula. The digital format of this content includes multi-media, video and print and is made available via satellite technology. The quality assured content is made available to Health education sites and Schools through a website, satellite broadcasts and DVDs. Mindset is partnered with the South African government departments of Health and Educational and provides leadership and innovation in the arena of ICT.

In September 2004, the Department of Education, South Africa, published the white paper on e-Education. The aim of this paper is and was to accelerate learning and teaching within the developing world. The challenge that the developing world faces is to build capacity among educators and educational policy makers in order to implement and utilize the opportunities that ICTs present. To this end, Mindset Network, in collaboration with an educational specialist from the Commonwealth of Learning, designed and developed a two-week capacity building workshop focusing on developing digital educational materials for distance and open learning. Educational representatives from various developing countries in Africa and Asia attended.

The workshop was participatory in nature with Mindset facilitating the learning and production of digital content in print, video and multi-media. The project was evaluated consistently and in a triangulated manner, across all levels, for efficiency, effectiveness, impact, sustainability and relevance. Results demonstrated that positive features of such a capacity building workshop rested on key areas: participation with ones peers, sharing knowledge and experiences, being able to implement new lessons, consistent feedback and evaluation. The format and lessons learnt from this workshop are presented.

INTRODUCTION

Caswell, Henson, Jensen and Wiley (2008) in a review of open education, argue that open education's role has evolved as technology has advanced. Whereas open education was often constrained by the costs of material development, production, reproduction and distribution, the advancement of technology has allowed these costs to be lowered and a larger audience reached. While content development is still within the same cost frame, and production may be costly initially, reproduction costs are now negligible, and reach is so much greater. This allows the goal of providing education to everyone to be more feasible and timely. As Caswell et al. (2008) argue:

“These technologies, and the associated changes in the cost of providing access to education, change distance education's role from one of classroom alternative to one of social transformer”.

Wiley (2006) argues that open source material is essential as all people have both the potential and right to education. Being able to electronically produce material makes it possible and vital to reach many people in a meaningful, and one can add, quality manner. As Caswell et al. (2008) state:

“We cannot in good conscience allow this poverty of educational opportunity to continue when educational provisions are so plentiful, and when their duplication and distribution costs so little”.

Hylén (2006) argues that there are 6 main reasons why institutions engage in OER programmes or projects:

- Altruism – the Open Access movement is characteristic of the motivation to share knowledge.
- Leveraging taxpayers’ money – Educational institutions should use the money invested from taxpayers to develop knowledge to share this equally with the people who paid for it – the public.
- Sharing – by allowing free access to content, people are able to build upon it, comment on it and develop its quality. In this sense, it is collaborative knowledge generation without everyone having to start from the beginning again.
- Good PR – having free and open access to information is good public relations as it enables prospective students, learners, and contributors to see the institution as valuable.
- Model building - Institutions need to find new models of business with increasingly free and open access to materials on the internet.
- Quality building - Open content strengthens the process of developing new materials, quality assurance and innovation.

Hylén (2006) also points out that individuals (researchers, educators and other individuals) need to share the content they develop. The possible reasons for this are:

- *Altruistic reasons.*
- *A desire to sponsor or stimulate innovation.*
- *A wish to share with others for creative, educational, scientific or research purposes. The pleasure of being involved in peer production.*
- *A strategy for enhancing the commercialized version of the content. Creating an open content version of the material, e.g. a draft (pre-print) or a chapter, may in fact be a strategy for enhancing*
- *the final, commercial product.*
- *Publicity, “egoboo” or reputation within the open community.*
- *“What is junk to one may be gold to another” – the off cuts or digital junk of one person may be the building blocks of knowledge and creative genius for another. (pg 3-4)*

There are numerous reasons why these individuals do not share resources, and they range from lack of time, lack of ability, no tangible rewards, and lack of motivation. Any programme drawing on using OERs and requiring participation and quality input needs to address these barriers. There are numerous instances of programmes and open resources that have built on a dedicated, trained team of participants to build a repository, with the reward that if one person provides quality input for others to use, they will in return be able to draw on others’ quality work. However, there is no gatekeeper mechanism to

make this a trade or bargaining situation and the participants must accept that everyone has access but that the strength of the system relies on everyone making a contribution.

Mindset Network and Capacity Building

Mindset Network is an NPO based in South Africa that designs, develops, produces and provides access to quality assured, relevant educational materials. The content is curriculum and/or national priority aligned and is provided free of charge as it is created under a creative commons license. In South Africa, the content is broadcast into primary and high schools for use by educators to supplement and enhance their teaching content and methodology. As such, it is open learning and incorporates and supports technological advancements in education. Using such a model to develop quality materials for open learning and distance education provides an opportunity to reach a wider audience with quality materials, to utilize and normalize technological advancements in developing countries and to foster educator and educational institutions' capacity levels.

In order to address the aims of the MDGs to provide universal primary education and eradicate poverty amongst others, a model of providing accessible and free quality educational materials and communication strategies is necessary. In addition, these methods and the manner in which they are utilized should be context relevant, which primary means that they should be developed by developing countries themselves instead of 'importing' too-broad and non-relevant content. Mindset partnered with COL to provide a workshop on digital material development to two educational representatives each from: Kenya, Lesotho, Bangladesh, India, Zambia, Uganda, Tanzania, Malawi and Namibia. As this was the first time such a capacity building workshop had been offered, a rigorous and in-depth evaluation of the process, content and outcomes was undertaken. The lessons learnt from this experience serve to inform future inter-county capacity building workshops.

The Workshop

The objectives of the workshop were to build capacity in the area of digital content, including input into video, multimedia and print as well as the integration of media. The purpose of the workshop was to build confidence, exposure, knowledge, skills and values around the area of ICT in participants from countries that are developing these areas or would like to develop these skills in their institutions.

The workshop was performed over two weeks and participants were given the opportunity to apply the skills they had been shown in participatory presentations. This production was then facilitated and instant and consistent feedback was provided to and by participants. There were also opportunities to tour Mindset, see certain Mindset content examples, and also view the manner in which Mindset creates products. Although not explicitly planned for, participants also indicated they found the observation of Mindset colleagues beneficial in terms of team work, professionalism and ability to work in the area that Mindset colleagues demonstrated. An overall perception of quality and dedication was perceived from participants about the Mindset organisation.

In this manner, the workshop's objectives were:

- To build capacity in digital content development in the African and Asian setting. The aim of this was to encourage the dissemination of skills implementation
- To secure relationships with various representatives from diverse organisations to build a community of learning
- To change pedagogic practices and develop a greater understanding of ICT and its possibilities in developing countries.

The above objectives specifically fulfil the following strategic objectives of Mindset Network:

- Changing pedagogic practices in line with changing educational practices in Africa. *“Mindset’s strategy will be to support the continuous improvement in pedagogical practices”*.
- Mindset aims to be a “one-stop-shop” in content development, distribution and usage, in the area of large-scale educational technology projects. *“In seeking to develop capacity in this area, Mindset will also focus on becoming a ‘thought leader’ in the field of educational technology through networking, conference participation, innovative testing of technologies and methods, publishing results of research and other work”*.

Approach to the workshop

The workshop took the approach of providing participants with the knowledge and lessons learned that Mindset has accumulated in the area of digital content development. Dialogue around these lessons learned were facilitated, with the focus being on discussions, knowledge sharing and interaction and learning by all participants (Mindset and other countries’ colleagues alike). Participants were then presented with various digital content developments and productions, with the aim of their being able to develop their own content and produce this with the resources they have available. In this manner, the participatory, action-oriented approach of the workshop aimed for the most effective and long lasting learning.

Table 1. Results Framework Template

Name of project	Short description of the project	Objectives for the project	Impact goals for the project <i>(these are the expected outputs from the Mindset interventions)</i>	
			Intermediate	Long term
Developing Digital Content Capacity building workshop between Mindset and COL	<p>Effectiveness: Two week, participatory, capacity building workshop with 2 representatives from Bangladesh, India, Lesotho, Malawi, Namibia, Tanzania and Zambia education institutions and 2 representatives from Kenya Institute of Education (KIE).</p> <p>Impact: There is a need to build capacity in developing content for digitisation.</p> <p>Relevance: Relevance for this expertise lies in the policy documents of the various educational institutions and their respective countries.</p> <p>Sustainability: This project complements the</p>	<ol style="list-style-type: none"> 1. Share experience about digital content (interactive lessons and video) development 2. Develop skills in digital (interactive lessons, print and video) content development 3. Develop skills in digital content production 4. Utilise Mindset Network experiences as a foundation and knowledge 	Promote greater understanding of digital content development and production in an African & Asian context	<p>Develop partnerships with African & Asian Educational representatives</p> <p>Build capacity in ICT in Africa</p> <p>Change pedagogic practice</p>

	Tafakari project as a fore-runner to implementation. In addition, this project will run as a pilot for training and capacity building workshops that Mindset may run in future.	resource for capacity building		
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The following table outlines the table of input, process, output, outcome and impacts.

Table 2. M&E processes of the project

Monitoring			Evaluation	
Input	Processes	Outputs.	Outcomes	Impact
Mindset expertise in digital content development	1. Present the developing world context of digital content development and production	1. Understanding the developing world context in digital content development	1. Understand the developing world context of digital content production (context applicable)	Promote greater understanding of digital content development and production in an developing world context
Mindset expertise in production of digital content	2. Present and discuss Mindset's content development approach	2. Understand Mindset's content development approach	2. Evaluate the merits and de-merits of different content media (video, print and interactive lessons) development approaches	Develop partnerships with developing world Educational representatives
Mindset's past experience and lessons learned	3. Present and discuss the merits and demerits of different formats (video, multi-media and print)	3. Evaluate the different formats	3. Use lessons learnt at Mindset to apply content development skills	Build capacity in ICT in Africa
Mindset training and facilitation expertise	4. Participation/facilitation on developing content for video	4. Develop content for video	4. Use lessons learnt at Mindset to apply production lessons learnt	Change pedagogic practice
	5. Participation/facilitation on developing content for multi-media	5. Develop multi-media content		
	6. Present Mindset's experience and approach to video production	6. Understand and experience video production at Mindset		
	7. Participation/facilitation on print production	7. Understand and experience print production at Mindset Network		

FINDINGS AND CONCLUSIONS:

Eight countries sent two participants each to the workshop with an almost equal gender split to ensure equal knowledge building and technology empowerment for women who are often under represented in this area. The geographic diversity of the participants emerged as a strength as well as a challenge in the workshops. Most significantly, the ability to work with one's peers, from different contexts and with different solutions and responses to similar challenges was highly valued by participants. However, this diversity also meant that some participants had different levels of exposure to digital content development than others. In addition, speaking in a second language was also a challenge for some participants, although having a partner from the same country aided the learning process. However, all participants indicated that they learnt something new, were excited about the area and wished to continue their development indicating, that the level at which participants entered the workshop was not as significant as the benefits they perceived themselves to have attained.

The pre-workshop evaluation found that participants had a clear, if broad idea of what they were expecting: input into digital content. They were also asked to rate the organisation of the workshop to date and the use of the Yahoo! Groups as a means of communication. The participants mentioned certain organisational difficulties for individual participants that were related to organisational delays from their countries or organisations, but a clear positive perception by most participants was emphasised. The Yahoo! Groups analysis demonstrated that not all participants necessarily registered but the majority did read the electronic notice-board and this served as a useful exercise.

The post-workshop evaluation by participants demonstrated that participants felt the objectives were met, that their knowledge and skills had increased and changed, and that their perspective on pedagogy in the area of ICT was altered. Interpersonally, participants felt that they were more confident and demonstrated enthusiasm about the area. Concrete and useful suggestions for change were made.

Table 3. Overall evaluation findings of the workshop

Evaluation question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The workshop fulfilled my expectations.	50%	50%	0	0	0
There were things that I think the workshop left out	0	50%	6.3%	6.3%	12.5%
I found the workshop very useful	81.3%	12.5%	0	0	0
Being able to produce my own content was helpful.	56.3%	43.8%	0	0	0
I found seeing how Mindset worked useful	68.8%	31.3%	0	0	0
I would have liked to learn more about content development.	56.3%	31.3%	12.5%	0	0
Being exposed to print media (print, video and interactive lessons) was beneficial to me.	62.5%	37.5%	0	0	0
Being exposed to digital video media was beneficial to me.	62.5%	31.3%	0	0	0
Being exposed to digital interactive lessons was beneficial to me.	56.3%	37.5%	0	0	0

The workshop was well facilitated.	81.3%	18.8%	0	0	0
The facilitators knew what they were talking about.	93.8%	6.3%	0	0	0
Being able to discuss material and the learning process with my colleagues was helpful	56.3%	37.5%	0	0	0
I would recommend this workshop to my colleagues	87.5%	6.3%	0	0	0
The workshop was well organized	75.0%	18.8%	0	0	0

Interestingly in the explanations of the above ratings, the participants felt that the workshop left elements out, and that they would like to learn more. This was directly related to the fact that they felt 2 weeks was not long enough and that they wanted to build on the learning that had begun.

All participants stated that the workshop fulfilled their expectations. Specifically, participants were asked to list the expectations that were met.

Table 4. Comparison between pre-workshop and post-workshop reported expectations

Pre-workshop expectations	Post-workshop expectations
<ul style="list-style-type: none"> • Digital content material development • Multimedia production • Video production 	<ul style="list-style-type: none"> • Digital content development (including specific areas of video and multimedia production)
<ul style="list-style-type: none"> • Scripting 	<ul style="list-style-type: none"> • Writing for digital content
<ul style="list-style-type: none"> • Creating a cohesive product – video, print and multimedia 	<ul style="list-style-type: none"> • Seeing all media together
<ul style="list-style-type: none"> • Participatory approach 	<ul style="list-style-type: none"> • Mindset as a model of a digital content developer • Knowledge sharing
<ul style="list-style-type: none"> • Relevant material 	<ul style="list-style-type: none"> • Theory and practice of content development – theoretical understanding of the background and the opportunity to apply it • An understanding of the context in which ICT may be used
<ul style="list-style-type: none"> • Facilitation 	<ul style="list-style-type: none"> • Participatory approach

In summary, this workshop provided Mindset with the opportunity to host a capacity building workshop, to learn useful and specific lessons at a personal and organisational level, and to build capacity in designing, developing and producing open educational resources. This addresses a key barrier to context relevant OER: capacity and motivation. Ultimately participants were required to return home to produce proposals for their organisations to develop digital content capacity internally.

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