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**TITLE:** Using ICT to learn at work: An evaluation of a pilot professional development system for Health Care Professionals

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### **ABSTRACT**

In South Africa, the National Strategic Plan for HIV/AIDS and STIs (2007-2011) was presented in 2007. It is essential to implement this plan to address the Millennium Development Goals and to halt and reverse the prevalence of HIV and AIDS in South Africa. This task is made difficult by severe shortages of Health Care Professionals (with estimates of over 30% of nursing posts being vacant). In addition, skills development for HCPs has been made a government priority, but time and logistical issues often make this difficult for HCPs. Mindset Health uses ICTs to reach this diverse and widely spread population with HIV and AIDS educational content and the potential for up-skilling.

Mindset Network is an NPO which creates open digital educational content that is aligned to national policies. The digital format of this content includes interactive lessons, video and print and is made freely available via satellite technology. A recent development is the initiation of an innovative professional development component to the content in order to enable HCPs to up-skill using this appropriate technology located on site. The Centre for Rural Health (CRH) argues that most nurses cite the lack of opportunity for further education and training as the main reason they leave their place of employment. They require access to information via various sources, including computers, the internet and satellite technology. The Mindset Health project enables the HCP to be assessed and potentially accredited on the content wherever they are located. This presentation provides a discussion on the merits and necessity of providing on-the-job training using national accreditation structures, the process of implementing this project, and the results of an initial evaluation of the project.

### **INTRODUCTION**

This paper directly addresses the outline of the Health theme provided by Huttly and Pringle (Pcf5 theme leaders):

*“Health workers are at the heart of our health systems, without their effective co-operation the systems malfunction. More effective training and access to up-to-date information are key factors in motivating and maintaining staff. ODL can help overcome some of the barriers to these factors in more cost-effective ways than conventional training which may take staff away from the work place. Is ODL better placed to offer effective in service training than conventional methods? Is there any evidence?”*

The Stockholm challenge (2008) has a finalist which has a programme of e-learning modules directed towards health professionals in Romania. The authors outline the costs of such a project that may mitigate against impact. These include:

- Economic costs – such as installation and equipment costs
- Operational and maintenance costs (including internet service provider costs, training in ICTs etc)
- Development of quality training material
- Social costs such as insufficient digital literacy
- Language difficulties

However, in spite of these concerns and constraints, the project has been found to be effective, but a challenge to implement.

The positive aspects of such a project may be listed as:

- Development of digital literacy which will support future training initiatives
- The development and provision of infrastructure to allow greater access to quality content

Orlando (2007) provides a summary of ICT in eHealth and notes that by far the biggest challenges to eHealth are human adaptability issues rather than connectivity issues. She lists the biggest problems encountered to be:

- connectivity,
- project timescales,
- leadership,
- costs,
- decision making,
- culture,
- organizational structure,
- management,
- change agents,
- system processes and
- end-user empowerment.

Ntiro and Mrema (2003) report on a conference on ICT for training development of Health workers in Africa. They argue that:

*“Healthcare providers are the most important asset of any healthcare system. To ensure that they can deliver high quality levels of care, they need to be ‘connected’ to learning, knowledge and information. In most developing countries however, rural health workers are mostly disconnected from such learning and educational opportunities and, aside from the threat to quality of care, this leads to lower levels of morale and commitment to their work” (pg. 3).*

Continuing medical education (CME), called CPD in South Africa, has been proposed as an option to this demand. And the demand has been seen to be incredibly high, but no completely effective solution has been found. Traditional paper and pencil, contact training has been found to be costly, often irrelevant, and provided little incentive to health workers to participate. (Past research by Mindset

Health could also add levels of motivation, initiative and little encouragement of HCPs). The authors questioned whether ICTs could fill this void and provide a possible solution.

Ntiro and Mrema (2003) conclude that the conference found that continuing education for health workers' delivery has new opportunities. ICTs may help to reduce barriers to training due to distance, they may reduce the distance to quality educational materials, they may enable learners' flexibility and choice in learning, and they allow interaction with 'experts' or facilitators far away. Four main reasons for using ICTs in health training were:

1. Training becomes more efficient as logistical planning is reduced and collaboration increases.
2. Learning can take place on demand.
3. Training and learning becomes more sustainable as costs are reduced and access to larger numbers is increased.
4. The mere fact of ICTs being used makes training attractive and is a motivator to participants.

However, limitations were also mentioned:

- ICTs need to be supported and integrated into policy and planning by government and officials
- The demands of the health workers needs to be taken into account – their need should drive development
- ICT skills and literacy of the health workers must be enhanced
- Infrastructure development needs to take place

In line with the above outline of challenges and opportunities for ICTs in health training and development, Mindset Health undertook a Professional Development programme pilot to address these issues.

### **Mindset Health Professional Development System**

Health Care Professionals (HCPs) in South Africa work under severe time, resource and personal constraints. This poses a challenge to both working conditions and continued training and updating mechanisms. HCPs continuously respond positively for offers of additional training provision. However, research by Mindset Health has shown that this additional training if provided as a flexible, voluntary distance learning approach leads to a stable, but not optimal level of uptake by HCPs. Barriers to the training have been listed by HCPs as a lack of time, and some levels of low confidence in ability to use the system. In order to provide a system that fulfils two overall objectives, a professional development system was piloted. The two main objectives were:

- Provide flexible, open, accessible and on-demand quality, relevant training materials to HCPs working in clinics and hospitals
- To provide an opportunity to utilize training offered on such an open platform to attain Continuing Professional Development points.

In South Africa, HCPs have to provide evidence of Continued Professional Development (CPD) – a points based system. However, HCPs face the challenge of accessing such a system due to lack of social and financial resources. In addition, diverse settings and limited access to trainers and training centers makes the CPD system requirements difficult for HCPs to fulfill.

Open Distance Learning provides an ideal mechanism for training HCPs in HIV and AIDS and related health issues. In the Mindset Health Professional Development system, this training is both directed at development of capacity and related better health services, as well as points or credit for completing the training.

As part of a pilot project to test a professional development system, Mindset Health has developed Professional Development Case Studies for facilitated education and training at nursing colleges and professional training institutions. The system makes use of computers linked to Mindset Health and HCPs can access modules and learning programmes in a free and open manner. Assessments are provided and a Learning Management System tracks and monitors progress. No direct costs are felt by the HCPs as the system is funded by Mindset Health funding and housed in their clinics. Indirect costs of setting aside time to interact with the system is, however, a commitment that HCPs need to make. This study evaluated the first step of the project- the efficacy of the case studies.

## **METHOD**

This pilot project evaluation focused on exploring the perceptions of training participants and facilitators towards these video case studies during education and training sessions at four institutions. The evaluation focused on general attitudes and perceptions, to determine whether there is a positive reception towards the case studies.

The Professional Development Case Studies include a DVD and a facilitation guide. The DVD contains eight video case studies, which range in length from approximately six and half minutes to 14 minutes. These case studies focus on:

- HIV, TB and African Traditional Healing;
- HIV, STI's and Substance Abuse;
- Cryptococcal Meningitis, Fever and Fatigue;
- HIV, Disclosure and Confidentiality;
- HIV, Prevention of mother to child transmission (PMTCT) and sexual assault;
- Occupational exposure to HIV and Post Exposure Prophylaxis (PEP);
- Antiretroviral Therapy (ART) and Lactic Acidosis; and
- HIV, the law and ethics

The facilitation guide provides a narrative of the video, key outcomes of the case study, and suggested facilitation questions and answers.

The use of the case studies was evaluated at two professional development institutions and two nursing colleges located in Gauteng, Mpumalanga, and North West Province. The case studies were incorporated into existing training programmes being offered by each institution. Each training session included both a text-based case study (which formed part of the existing training) and the Mindset Health video-based case study.

Participants were asked to rate (on a rating scale of five, ranging from strongly agree to strongly disagree) whether they enjoyed the training session. Overall, there was a positive response to the sessions with 87% of respondents indicating that they enjoyed the session. Few respondents (6%) responded negatively to the statement, whilst 10% were unsure.

**Table 1.** Enjoyment of Session

<b>I Enjoyed The Session Today:</b>	<b>Percentage of Training Participants</b>
Strongly Agree	20%
Agree	65%
Unsure	10%

<b>I Enjoyed The Session Today:</b>	<b>Percentage of Training Participants</b>
Disagree	4%
Strongly Disagree	2%

All facilitators strongly agreed that they enjoyed using the Mindset Health Video Case Studies and Facilitation Guide.

### **Emerging Themes**

#### ***Innovative and novel experience***

Training participants indicated that using the Mindset Health Video-Based Case Studies was a new and interesting method of education for them, that it was fun, humorous, interactive, enjoyable and well-produced.

#### ***Educational Value***

Participants indicated that the training session was an educational experience that allowed them to gain new information and update their existing information and skills. It was regarded as beneficial, informative and empowering.

However, the case studies were not regarded as educative by all respondents. One of the participants at Site Two indicated that she was not familiar with the medical terminology used in the session and another indicated that the video was not factual enough in all respects.

#### ***Understandability***

Many participants reported that the videos were easy to understand. One participant indicated that it reinforced her understanding and two participants mentioned that it stimulated critical thinking.

#### ***Visual Stimulation***

Across the institutions, participants pointed out that the visual and auditory nature of the videos was more stimulating and allowed them to remember the content more easily – ‘it is not easy to forget something you have seen’. One of the facilitators also commented that one of the strengths of the Mindset Health Video-based case study was that it was more visual, and thus invited comment.

#### ***Use of different media***

- Text versus Video Case Study - The facilitators and participants were asked to compare the text-based case studies with the Mindset Health Video-Based Case Studies, by rating them both on a scale from 1-4 (with 1=strongly agree and 4=strongly disagree) on the following variables:
  - Educational value
  - Interesting
  - Easy to follow
  - Stimulated discussion
  - Enjoyable

When comparing the Text-based Case Studies with the Mindset Health Video-Based Case Studies, the facilitators rated both case studies positively on all variables, rating the Mindset Health Video-Based Case Studies higher than the text-based case studies on all variables. The training participants, however, tended to rate the text-based case studies more positively (as shown in the table below).

**Table 2.** Comparison of Text-based case studies and Mindset Health video-based case studies (Training Participants, n=106)

	Strongly Agree		Agree		Disagree		Strongly Disagree	
	Text	Video	Text	Video	Text	Video	Text	Video
The case study was								
Educational	50%	38%	47%	55%	1%	4%	1%	4%
Interesting	42%	46%	52%	43%	5%	8%	1%	3%
Easy to Follow	41%	41%	48%	48%	11%	8%		3%
Stimulated Discussion	38%	19%	52%	53%	8%	18%	1%	3%
Enjoyable	31%	43%	58%	41%	8%	14%	1%	3%

- Mix of media - Participants enjoyed the variety of different media used in the session – the combination of lectures, text-based case studies and the video-based case study. As mentioned earlier, participants reported that the introduction of videos was new and different from the ‘traditional’ or ‘conventional’ methods of training. In addition, participants indicated that it helped break the monotony of the lecturing training session and created a ‘diversion from books’ and theory, sustained interest and assisted with concentration.
- Discussion and Interaction - Some participants also commented that the video case studies did not promote or stimulate much discussion and that therefore were not as informative as they could have been. One participant at Site Two mentioned that the video did not allow for feedback.
- Realism and Practical Value - Many respondents, across the institutions, indicated that they felt that Mindset Health video-based case studies were simple, practical, realistic and believable. The practical nature of the case studies made them easy to relate to, understand and follow, easy to identify with and ‘make associations with reality’.
- Correlation between Theory and Practical - Participants reported that they were able to correlate the theory that they learnt with the practical nature of the Mindset Health Video-based Case study.

### Future use of Mindset Health Video-Based Case Studies

All facilitators strongly agreed that they would like to use the Mindset Health Video Based Case Studies and Facilitation Guides in the future, as they address visual memory, made facilitation easier, and provide the learner with a chance to integrate theory and practice. Facilitators at the nursing schools were asked in what context they would like to use the material. Both facilitators indicated that they would like to use it in tutorials, and one indicated that she would like to use it in examinations and in lectures as well.

**Table 3.** I would like to have more Mindset Video Based Case Studies incorporated into Future Training Courses

	Percentage of Training Participants
Strongly Agree	36%
Agree	40%
Unsure	14%

	Percentage of Training Participants
Disagree	5%
Strongly Disagree	3%

Participants were asked to rate whether they would like to have more Mindset Health Video Based Case Studies incorporated into future lectures/tutorials. All Site Three respondents indicated that they would definitely like to have more Mindset Health Video Based Case Studies incorporated into future lectures/tutorials. Most of the respondents from the other three sites (76%) indicated that they would like to have more Mindset Health videos incorporated into future lectures or tutorials, with 14% being unsure and 8% not keen to use Mindset Health Videos in the future.

## CONCLUSIONS

In general, there was a positive reception to the introduction of the Mindset Health video based case study in the training sessions, and an interest in using the case studies in the future. The positive responses to the case studies include the case studies being educational, informative, and visually stimulating (thus lending themselves to being easy to remember, follow, and understand). The practical and realistic nature of the videos made the content easy to relate to, understand, follow, and remember. In addition, the introduction of videos provided a variety of learning materials thus presenting complimentary information in different ways and so creating and sustaining interest. It was suggested that the Mindset Health Video-based case studies be used in conjunction with lectures and text-based case studies, as together these methods provide more information, better understanding and a wider perspective on the subject of study.

The negative comments on the case studies included that some irrelevant background contextual information (that some found difficult to understand) was presented, and insufficient clinical information was included.

The role of the facilitator was reported to be central to the enjoyment and success of training. Whilst the video provided a platform for discussion and debate, participants pointed to the vital role that the facilitator plays in the discussion after the video. It is clear that good facilitation is vital to ensure educational value of the case study and to align the case study with the outcomes of the specific topic being covered. Therefore in ensuring that participants receive optimum benefit from the case studies, it is important that facilitators are well trained and are familiar with the material covered. Mindset Health might want to therefore explore the value of running short facilitation skills workshops for facilitators.

This formative research focused on the overall perceptions of training participants and facilitators towards the Mindset Health Professional Development case studies. It appears that, in general, participants find these video case studies to be a useful addition to the training of professionals and student nurses, although some specific recommendations for improvement were noted. Future research should focus on assessing the educational value of this approach. In 2008, research focuses specifically on the efficiency of incorporating the system into sites with the learner management system and assessment components.

## REFERENEES

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