Videotaped interviews as a medium to enhance cross-cultural programme evaluation

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SUMMARY
Evaluation is a required component of interventions. Written data are the predominant source. However, video recording is used in many applications to evaluate a range of encounters and practices. We report assessment of the role of videotaped interviews in programme evaluation. Interviews using a consistent script of open-ended questions were recorded during evaluation of an international child-health promotion programme in Uganda by individuals with basic training and equipment. Participants were a convenience sample of programme team members (six school teachers, and six Ugandan and 12 Canadian health-care trainees) who had completed the annual written evaluation questionnaire. Evaluators reviewed each participant's videotaped interview and questionnaire, content coded the responses against a criterion-based check list, documented how many times factual information was contributed on each question and compared the data. Videos were also assessed for strong positive or negative emotion. Videotaped interviews provided more comprehensive responses than written questionnaires, and were more accurate where mis-comprehension of question meaning occurred. The video interview, unlike the written questionnaire, allowed rephrasing for clarification. The video interview medium enhanced programme evaluation by providing more facts, greater insight into the effects of the interventions and clearer direction for future activity. Hence, video-recorded feedback has great potential value in applied research for comprehensive programme evaluation.

Key words: evaluation; health promotion programmes

BACKGROUND
Today’s world is visually driven; our everyday experience dominated by images from television, the Internet and mobile phones, influenced by advertising and framed by cinema, photography and art.

Video-recording techniques and technology contribute significantly to the images we see and provide context that influences their impact and our interpretation. When used as a data collection method for qualitative research video-recording provides ‘an outside view’ of the phenomenon under study (Paterson et al., 2003), by combining the factual statements of the respondent with elements reflecting the influence of emotion, behaviour, language and interactions with others on the participants’ responses (Andersen and Adamsen, 2001; Lotzkar and Bottorff, 2001). Although this medium encompasses a number of methodological approaches (DuFlon, 2002; Van Vlaenderen, 2004) and is widely used in many applications, including sociology, anthropology and ethnography (Pink, 2001; DuFlon, 2002; Rosenstein, 2002), analytical studies are few
(Mondada, 2009), and video recording does not appear to have been widely used in the context of evaluation of social and educational programmes involving health promotion.

In contrast there is broad literature describing the use of video in a range of other applications in fields such as medicine and nursing (Scheidt et al., 1986; Carbine et al., 2000; Andersen and Adamesen, 2001; Riley and Manias, 2004; Roter et al., 2004; Rosengren et al., 2005; Oakley et al., 2006; Bahl et al., 2009; Ozacakar et al., 2009), education (Paul et al., 1998; Krouse, 2001; Makoul and Altman, 2002), industrial relations (McAndrew and Phillips, 2005), geographic research (Kindon, 2003) and jurisprudence (Wilson and Davies, 1999). There is also discussion of issues as diverse as the ethics, legality, ownership, the validity of video and approaches to quantitative and qualitative analysis of various forms of interview (Simco and Warin, 1997; Wilson and Davies, 1999; Rosenstein, 2002; Rosengren et al., 2005; Ziebland and McPherson, 2006; Gelbart et al., 2009). Description of all the recognized forms of video recording, which include participatory, observational, reflexive, historical, photo voice and video diary, (Cousins and Whitmore, 1998; DuFlon, 2002; Rosenstein, 2002; van Vlaenderen, 2004) is beyond the scope of this report.

In 2002 Rosenstein described the use of video technology in programme evaluation as a form of applied research where the main purpose is to ‘observe, analyze and feedback into the program’ to assist the stakeholders, rather than to provide insights for academic purposes (Rosenstein, 2002). In this context, video recording focuses on the evaluation on the programme as a whole rather than on the performance of individuals or relevance of single concepts. Described as ‘seeing with a camera’ (Mondada, 2009) this medium has been suggested for comprehensive programme evaluation because it can ‘capture unforeseen yet observable data’ (Bessette and Tighe, 1988); when analysed this provides feedback able to promote improvement, generate change or confirm the validity of the programme or intervention being studied.

For 2 years, we have included a videotaped interview component into the annual evaluation of a health promotion programme being conducted collaboratively by Ugandan and Canadian University faculty and students in partnership with teachers at four rural schools in Uganda. This programme, ‘Brighter Smiles’, is an oral health promotion initiative originally begun in remote Canadian Aboriginal communities (Macnab et al., 2008). It is school-based and addresses important health issues via health curriculum content and daily conduct of healthy practices (e.g. tooth brushing). This programme is driven by communities in partnership with University collaborators. This health-promoting school model was introduced to Uganda in 2006 with the aim of engaging schools in rural Ugandan communities in health promotion, and providing community-based learning opportunities for university health sciences students at Makerere University (Macnab et al., 2010, 2011). The varied educational opportunities, research and evaluation components, objectives, setting, implementation and health benefits of the programme have been described (Macnab et al., 2010; Macnab and Kasangaki, in press).

To be successful a trusting relationship between the partners (community and university), a desire to learn from each other, and agreement to collaborate is required. Although oral health is the initiating focus, health promotion expands to address other community-identified concerns as confidence develops through success with the initial focus of oral health promotion (Macnab et al., 2008; Macnab and Kasangaki, in press).

Health-promoting schools use ‘a whole-school approach to enhance the health and educational outcomes of children through teaching and learning experiences initiated in the schools’ (Nutbeam, 2000; St Leger, 2001). In our programme, teachers, university students and faculty all have defined roles, experience a range of individual and shared learning opportunities and develop personal and collective perceptions of importance related to programme delivery, impact, evolution and sustainability.

A conventional annual evaluation process is in place that captures these perceptions, and allows documentation of changes in the participating children’s knowledge, behaviours and oral health status (Macnab et al., 2010; Macnab and Kasangaki, in press). In this paper, we describe a trial where videotaped interviews were added to the conventional written questionnaire component to assess if these enhanced the scope and content of our evaluation process. The idea to do this came from experience with media reporting on our original Canadian
health-promoting school initiative (Macnab et al., 2008). On-camera responses from teachers delivering the programme, community health professionals and members of the elders contained more comprehensive feedback than we had obtained from written questionnaires, and the issues they felt passionate about and their priorities for the future of the programme were only fully evident through the visual medium. Others have also described video feedback as superior to other forms of evaluation in other applications (Scheidt et al., 1986; Krouse, 2001; DuFlon, 2002; Bahl et al., 2009; Ozcakar et al., 2009).

METHODS

Videotaped feedback was obtained from a convenience sample comprised of members of three groups participating in the delivery of the programme: Ugandan university students, Canadian university students and Ugandan teachers from the health-promoting schools. Interviews were videotaped in 2008 and 2009 during the yearly collaborative assessment visits of the University team, in addition to the annually administered evaluation components of the programme which have been conducted since 2006 (Macnab and Kasangaki, in press). Evaluation comprises written questionnaire and physical examination components. There are three questionnaires: the first is completed by school teachers who ask each child the questions in a one on one dialogue and record the answers; the second is completed anonymously by all the university students participating in programme delivery and the third by programme’s school teachers. The examination includes all participating children and is a comprehensive evaluation of oral health status which includes a validated score to record the number of decayed, missing and filled teeth.

In Year one, which was essentially a trial to establish the video techniques and resources required, a good quality amateur digital camera with external microphone was used and the video interviews were conducted using a combination of structured questions and open ‘conversation’.

In Year two an individual was recruited who had received basic training in film and sound recording, who used semi-professional equipment to ensure that video with the visual and sound quality required was obtained during field recording (DuFlon, 2002). The videography skills required were mastered in ~12 h of training with a professional videographer, and reference to on-line tutorials on how to videotape an interview (Sleight-Brennan and Newberg, 2010). We also only used a structured format so that the same questions were included in all interviews; and most were open ended. The questions such as ‘What has been your experience with Brighter Smiles program in this community?’ ‘What bearings has this program had on the children, their families and the community?’, were developed iteratively by the evaluation team and incorporated into a script that was followed for each interview. The content categories for the interview questions matched the categories included in the written questionnaires (Tables 1 and 2). A script was developed to make sure the interviewer presented the interview questions to each respondent in the same way. The interviewer was

<table>
<thead>
<tr>
<th>Table 1: Evaluation content categories of teacher questionnaires and scripted interviews</th>
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<tr>
<td><strong>Contributions of teachers</strong></td>
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<tr>
<td>lessons learned; programme efficacy/value; empowerment;</td>
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<tr>
<td>challenges; sustainability; programme evolution/new HP topics;</td>
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<tr>
<td>written questionnaires</td>
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<tr>
<td><strong>Impact on children</strong></td>
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<tr>
<td>health benefits; health knowledge; health practices;</td>
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<tr>
<td>motivation/enthusiasm; participation/attendance; self-esteem;</td>
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<tr>
<td><strong>Changes at school</strong></td>
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<tr>
<td>curriculum content; timetable/routine; absence from school;</td>
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<tr>
<td>academic performance; health culture; stature re other schools</td>
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<tr>
<td><strong>Collaboration with partners</strong></td>
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<tr>
<td>logistics of orientation/support; contribution of ideas/content;</td>
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<tr>
<td>participation in delivery; partnership in development; role in evaluation; educational value</td>
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<tr>
<td><strong>Effect on community</strong></td>
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<tr>
<td>impact on siblings/peers/family; awareness of programme;</td>
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<tr>
<td>engagement broader community; health knowledge; health practices; feedback provided</td>
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instructed not to comment or pass judgment on the responses, but to be prepared to rephrase a question if it was not understood.

The recorded videotapes were edited by an independent professional videographer who separated material of poor quality; inserted time codes to enable individual interviews and each question to be readily identified during analysis and for subsequent review and copied the edited compilation of responses onto CDs for ease of handling. This editing, CD formatting and incorporation of numeric time codes facilitated analysis, ensured accurate identification of each sequence, and aided later retrospective review; but professional ‘polished’ editing (McAndrew and Phillips, 2005) was not required for the analysis undertaken, which saved costs.

A check list was developed that included the content categories in Tables 1 and 2 to enable the responses anticipated during interview to be collated and quantified for analysis. Two observers, not involved in the data collection, then jointly viewed the video interviews and content coded each response, which also allowed the number of times factual information was given related to each content item to be quantified; in the event a given fact was repeated it was only scored once. In addition, each response was also assessed for the presence of strong positive or negative emotion, indicated by changes in the respondent’s voice, posture, facial expression or gesture. Each participant’s written responses on their questionnaire were then content coded and quantified for factual content in the same manner. Finally, comparison was made of the analyses of the videotaped and written responses of each participant to assess the consistency of responses to each question in each medium, and quantify differences in the factual information each provided.

Institutional ethical approval and individual consent from each participant was obtained.

Results: Six teachers and six Ugandan and 12 Canadian health sciences students completed videotaped interviews. Four recordings (all from Year one) were excluded from analysis (three from teachers due to poor sound quality, one from a Ugandan student as all scripted questions were not asked).

All 20 video interviews analysed contained responses to all the content categories captured in the respondents’ written questionnaires—31 categories for teacher evaluation (Table 1) and 10 for students (Table 2). In 17 (85%) of the interviews (three teachers, three Ugandan and 11 Canadian students) >20% more factual information was obtained via the respondent’s video interview than from the corresponding written questionnaire. Responses from the teachers were especially rich regarding the impact of the programme on the children and their siblings and families, changes affecting the health culture of the school and personal vision regarding programme evolution. Students contributed more regarding their interactions with children, novel educational opportunities (Wang et al., 2010), and new directions in their anticipated career path (Macnab et al., 2011), with 10/18 (55.6%) indicating their intention to now include elements of rural practice or health-promoting school activity. The additional content from Ugandans emphasized community-based learning, collaborative research and evaluation opportunities, and the cultural and educational richness of the international partnership; while Canadians spoke with increased awareness of issues related to global health and the impact of determinants of health, and the value of cultural competence and Ugandan/Canadian partnership opportunities. Fourteen (70%) interviews (three teachers, five Ugandan and six Canadian students) had instances where verbal and non-verbal cues associated with responses were assessed as showing strong emotion; in 32/36 instances (89%) the response was positive, reflecting enthusiasm, satisfaction and the importance of the improvement in the health, knowledge and practices of the children and benefits for the

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**Table 2:** Evaluation content categories of University student questionnaires and scripted interviews

| Participation in programme | educational opportunities; community-based learning; new knowledge and practices; school-based model for HP; collaborative learning/research/evaluation; insight into global health/determinants of health; experience teaching/working with children; cultural competency/international collaboration; ability to effect positive change; impact on future career choice; unexpected benefits, outcomes |

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school and broader community. Strong negative emotion (11%) was predominantly expressed in the context of regret that all children in a school could not be included in the programme, or concern that the programme might not continue.

In four instances involving three respondents (teachers) a clear lack of comprehension or significant misinterpretation of the question was evident. The content of the initial response on the video matched the written response on the questionnaire, but in each instance reframing the question was associated with a significantly modified response, and body cues and language suggesting comprehension. Three instances related to ‘What challenges have you experienced delivering the program?’ where challenge was perceived initially as meaning personal doubt, or being forbidden to contribute, but when reworded as ‘difficulties’ yielded responses related to practical considerations, having the necessary knowledge and logistic necessities implicit in programme delivery. In the other instance the term ‘empowered’ was initially misconstrued. English was not the first language of these respondents and review of the videos identified background noise that may have made hearing the question somewhat difficult.

DISCUSSION

In this cross-cultural programme evaluation the content of all the videotaped interviews corroborated the responses obtained via written questionnaires. However, the interviews were richer in terms of factual information, enabled lack of comprehension to be detected and rectified where it occurred, and allowed not just the passion and enthusiasm of the respondent to be gauged but also any dissatisfaction and negativity as well. Observations and opinions related to the impact of the programme were more clearly articulated and included elements not captured in writing. Input intended to guide the future direction of the programme was also more detailed and reflective of the questions asked. These findings indicate the potential for programme evaluation that incorporates videotaped material to obtain more comprehensive information than when written questionnaires are used alone.

Incorporating video recording into our evaluation in Uganda was straightforward. There were obvious costs and logistics involved, principally the camera; professional editing and analysis components; having a skilled operator; the need for additional ethical approval; the extended time frame required for the interviews and attendant scheduling complexity. However, we believe using evaluation methodology that is as comprehensive as possible is warranted because of the fiscal and human resources invested in a programme such as ours, which, during the period reported, involved four schools, 16 teachers, >2500 children and 18 University faculty and student team members. Year one was essentially a trial of the logistics of filming and although material of value was recorded much could not be used, principally because of poor sound quality. In Year two all the videos were better in terms of audio and visual clarity, and the succinctness and completeness with which the responses were captured, and were used for analysis. Key contributing factors included a trained camera operator, use of an entry-level professional camera with external microphone and adherence to a consistent script so questions were asked consistently. Learning how to interview is a complex and challenging endeavour (Roulston et al., 2003) and beyond the scope of our project. The relevance of attention to scripting for the inexperienced in this form of interview if the novice interviewer is to obtain representative recorded material from multiple contributors (McAndrew and Phillips, 2005) is of paramount importance, in contrast to participatory video which is a more open and reflexive process (Kindon, 2003).

Prior literature supports our findings that video-recorded interviews provide more detailed data than is gathered by questionnaire (Coutts et al., 2009) and are valuable as a means of comprehensive programme evaluation (Bessette and Tighe, 1988). An evaluation that includes both video recorded and written feedback enables methodological triangulation of results that potentially increases accuracy. The value of video is perhaps explained in part by the greater time allocated to the interview when compared with questionnaire completion; however, it was our impression that the invitation to contribute on video also acted as a catalyst for a higher level of dialogue, and others have commented on how well this medium...
provides observation, analysis and information that can be fed back into the programme to promote improvement, change or confirmation of strategies (Andersen and Adamsen, 2001; Lotzkar and Bottorff, 2001; Rosenstein, 2002; Coutts et al., 2009).

We recognize limitations in our report. The number of interviews included is small, and improvements can undoubtedly be made to the methods used to content code and compare the videotaped responses to written answers on the questionnaires. Accurate inference of the emotions experienced by respondents requires ‘empathetic accuracy’ (Ickes, 2003; Barone et al., 2005) and awareness of the cultural and emotional norms of participants. We did obtain Ugandan team member feedback on each interview at the time of recording, and included a reviewer with many years experience of African culture and dialogue to aid interpretation of positive or negative ‘passion’ based on tone of voice, altered body posture or reinforcing gesture. And, as reported by others, video does capture gestures, facial expressions and other visual interaction cues that enable important information to be derived (Rosenstein, 2002; Uitterhoeve et al., 2009; DuFlon, 2002).

We believe this description of the contributions our pilot use of video technology made to the evaluation of a cross-cultural health promotion programme has relevance; and hope it prompts others to use this medium in similar ways, and the evolution of more robust comparative methodology for incorporating video interviews into medical sociological research; including the evaluation of learning outcomes using control groups debriefed through other methods (McAndrew and Phillips, 2005).

We anticipated that our videos would prove to be a comprehensive component of our programme evaluation, as others have described the superior nature of such feedback in other applications (Scheidt et al., 1986; Krouse, 2001; DuFlon, 2002; Bahl et al., 2009; Ozcakar et al., 2009). However, there were several unanticipated benefits. The ability to identify where a question was misunderstood and generate a valid response by rephrasing it is important. Having a video record that can be replayed is valuable as the images and commentary can be reviewed from different perspectives. This medium also enables elements to be explored that were not noted at the time of taping (DuFlon, 2002). Members of the programme team not able to be present in the field during the evaluation can become active participants in the review process by viewing the interviews. Consequently it could be argued that incorporating a video component in the evaluation of an international project can reduce the number of team members needing to travel. The reduced budget for air travel should balance the costs of the video component. This might result in actual cost-benefits and could perhaps even add a ‘green’ element to such projects. Video also has educational value providing material for vignettes used for stakeholder discussion, to inform and engage potential programme collaborators, set the scene at research presentations (Ross et al., 2009) and as curriculum content for global-health education of university students.

CONCLUSIONS

Based on analysis of the responses of participants in a school-based cross-cultural health promotion programme, video interviews are a practical means of enhancing programme evaluation that enriches the data obtained, and adds a means of verifying the comments made on written questionnaires and the comprehension of respondents. Material of sufficient quality can be recorded with modest investment in the skills of the personnel and the camera equipment required.

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AUTHORS’ ROLE

A.M. co-developed the health promotion programme and the evaluation tools, piloted video recording of programme stakeholders, planned the research, developed the content coding criteria, conducted analysis, interpreted the data, contributed to literature review and wrote the manuscript.

W.C. co-ordinated video recording in the field and the editing and coding of interviews,
contributed to data analysis, literature review and writing the manuscript.
A.K. co-developed the health promotion program and the evaluation tools, planned the research, supervised the program in the field, interpreted the data and contributed to literature review and writing the manuscript.

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