

Using Computer-Assisted Self-Interviewing (CASI) Questionnaires to Facilitate Consultation and Participation with Vulnerable Young People

This paper explores computer-assisted self-interviewing (CASI) as a methodology for consulting with vulnerable children. The authors provide a brief review of the literature in this area, indicating that computer-mediated environments for self-administered questionnaires can be particularly helpful in enabling data to be obtained about sensitive subjects. A case example is provided of Viewpoint Interactive, a CASI application in use in the UK in local authority children's services, education, and in learning disability child care practice. The paper concludes that CASI as a methodology can assist with consultation, and that it may provide a useful additional tool in the complex process of moving beyond consultation alone to the development of increased and more effective participation for vulnerable children in the provision of their care. Copyright © 2005 John Wiley & Sons, Ltd.

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Traditional interviewing techniques and other methods for facilitating communication and participation with vulnerable children, for example through the child's cultural context including music, photography, video, dance or drama,

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or through groupwork or youth forums, etc., are important and represent a fast-growing area (Hill *et al.*, 2004, p. 85). Where questionnaires are seen as relevant, however, asking questions electronically in a graphical and stimulating computer-based context seems to yield surprisingly rich and useful information from vulnerable children, whose views hitherto may have been hard to reach. This seems especially to be the case where the issues involved are seen by children as being sensitive or potentially embarrassing.

Putting children's views and wishes at the forefront of decision-making in social care in a 'culture of participation' (Kirby *et al.*, 2003) has increasingly become a fundamental guiding principle in practice and legislation. Practice experience, however, may indicate that some children and young people find it hard to express their views to adults, especially to adults in authority roles, and that they may have difficulty or be reluctant to put their feelings into words. This child care practice dilemma was a significant trigger for the development of the computer-assisted self-interviewing (CASI) application, Viewpoint Interactive, through which computer-mediated approaches were developed building on traditional interviewing techniques. The later inclusion of the audio facility (audio-CASI) into this application, where the computer's software is enabled to 'speak' questions aloud to the interviewee, who will usually wear headphones when completing the questionnaire, has been a significant development in this and a number of other applications worldwide, some examples of which are considered and discussed in this paper.

The changes in organizational culture required to develop and implement more inclusive and participatory processes are, however, significant, and while most child care agencies appreciate fully the potential of initiating a wider range of methodologies for consultation and participation, some agencies are able to integrate such innovations into their systems more holistically and more quickly than others, an area which may benefit from further research.

Using Computers for Communication and Participation

Collecting Data about Sensitive Subjects

CASI was used by Watson *et al.* (2001) in New Zealand for a national adolescent health survey. It has also been used by the National Institute for Public Health in Denmark (Helweg-Larsen *et al.*, 2003) for collecting youth data in an anonymous survey related to sexual abuse in young people under the age

of 15. Gribble (2004) reports on methodological issues associated with data collection on sexual behaviour in the USA, observing 'that CASI technology has fundamentally altered the interview context for measurements of sexual and other sensitive behaviours' and that CASI can have a substantial effect on the willingness of people to report activities that may be embarrassing, stigmatizing or illegal. In matters concerning health and other social risks, early intervention is often preferable. In this context, Bobula *et al.* (2004) report on CASI applications developed on handheld computers in the USA, aimed at ease of access for children aged 9–11, as part of a large multisite national study to prevent substance misuse.

CASI has also been used in other fields characterized by a high incidence of online research (Havermans, 2003). Bronner (2003) reports on the successful use of CASI in a national readership survey for the Dutch magazine industry, where formerly response rates using other methods had been poor. Bronner observed that 'CASI-on-line seems to be the data collection method of the future' (p. 1). In fact, the use of CASI reaches back 20 years, with Waterton and Duffy (1984) reporting an example of a prototype of CASI questionnaire being used in a survey concerning alcohol consumption in the early 1980s. A more recent example is given by Erulkar *et al.* (2004) of audio-CASI being used in rural Kenya, where a household survey of adolescents was conducted about sensitive behaviours, including sexual initiation, risky sexual behaviour, coerced sex, and drug and alcohol use. The adolescent respondents easily adapted to the computerized interview and were able to complete the survey with minimal assistance, although in some areas there was confusion about the confidentiality of the data collected.

Newman *et al.* (2002) found, in their study of the differential effects of using CASI or conducting face-to-face interviews for the assessment of the involvement of drug-using individuals in a syringe exchange programme, that face-to-face interviews elicited more evidence of psychological distress than did CASI. However, CASI was more effective in generating data about stigmatized behaviours. Newman *et al.* suggest that responding to potentially sensitive questions should not be seen as merely 'providing data', but rather as an activity with complex motivations. These motivations can include maintaining social respect, obtaining social support and altruism. Therefore, in consulting young people, practitioners may need to develop and maintain a range of options, of which CASI could be one to consider. Engaging in direct interviewer/interviewee relationships may remain a first choice on occasions in preference to CASI, or perhaps alternatively choosing

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computer-assisted interviewing (CAI), where the interviewer takes a more proactive role (Calam *et al.*, 2000).

Some Elements in the CASI Process

Self-administered questionnaires enable the interviewee to retain the locus of control, where the more leisurely pace can provide time to understand the meaning of the question and retrieve and compose an answer (De Leeuw *et al.*, 1997). De Leeuw and Collins (1997) further suggest that this is particularly helpful when interviewing special populations such as children, adolescents and older people. The sense of privacy afforded by CASI appears to make the interviewer obsolete and response effects associated with the socioeconomic characteristics of the interviewer or the social desirability of the response alternatives appear to be reduced significantly (Bronner, 2003).

The issue of interviewee literacy is important when administering questionnaires without the presence of an interviewer. Rew *et al.* (2004) report on this in Texas, USA, when using audio-CASI to interview school-age children. Rew and her colleagues found that using CASI with questions articulated through audio headphones as well as being presented as on-screen text was especially enabling for children where English was their second language or for children with poor literacy skills. The use of headphones with audio-enhanced CASI text was also reported by Black (2000) as being effective in interviewing children about maltreatment.

The insertion of individual user profiles into questionnaires prior to completion, except of course when using intentionally anonymous questionnaires, can be helpful and motivating. This provides the interviewee with the powerful experience of the computer ‘knowing’ their name, where they live and the names of significant others and places in their lives. However, it is important, as suggested by Brave *et al.* (2005), that software-driven electronic on-screen assistants are fully empathic with the user’s perspective and that they are not designed to be self-oriented and representative only of ‘the computer’.

Some Issues in Children’s Participation

Vulnerable and socially excluded children experience the limits to their participation in many direct ways and may not, perhaps, consider the opportunity to complete a CASI questionnaire as a participatory act in itself. Indeed, Hill *et al.* (2004) suggest that ‘participation means the direct

involvement of children in decision-making that affect their lives, whether individually or collectively . . . (and) consultation is about seeking views, normally at the initiative of the decision-makers' (p. 83). Hill further adds, 'Consultation may be a means of enabling children to participate but it can also be a substitute for participation, in that decisions are made without the direct involvement of children' (p. 83). Hill quotes Brown (1998), who suggests that the absence of the authentic voice of children themselves in the public discourses about childhood is one of the reasons why they occupy such a marginal and vulnerable position in society. But it is likely that CASI will only be as good as the conception of inclusiveness that informs the ways in which the questionnaires are designed and the ways in which young people are enabled to become involved. Even then, CASI is only as good as the critique of the professionals who, after capturing the data, make their choices about how those data are deployed, recognizing the reality in practice, confirmed by Kirby *et al.* (2003, p. 24), that 'building participatory cultures is a complex and dynamic process.'

Alderson (2001, p. 139) suggests that 'respect for children's participation recognises them as subjects rather than objects of research, who "speak" in their own right and report valid views and experiences . . . (and) to involve children more directly in research can rescue them from silence and exclusion and from being represented, by default, as passive objects.' Other authors (Clark, 2001; Worrall, 2000) discuss the opportunities and issues relating to the training and involvement of young people as social researchers. In a tentative way, therefore, CASI, and in particular online CASI, with the truncated timescales made possible by online data collection, collation and analysis, may offer a useful additional tool in the process of bridging the gaps between consultation, participation and research.

Children's Access to Computers and the Internet

The report commissioned by the Scottish Parliament for improving consultation to incorporate young people's views into relevant aspects of policy-making (Borland *et al.*, 2001) acknowledges that online consultation offers an important opportunity to participate, in addition to other methods such as conferences, youth forums, individual interviews and traditional questionnaire-based surveys. Borland accepts, however, that not all young people have access to computers and that in many situations, especially when computers used for CASI are located in schools, there is a significant risk of children's

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responses being unduly influenced by teachers or by peers. Indeed, Aquilino *et al.* (2000) conclude that when using CASI, bystander presence can influence responses, especially if bystanders are seen by the interviewee to be authority figures.

Facer and Furlong (2001) warned that information poverty may soon become a key indicator of social exclusion, and it is probably a myth to consider every child as a ‘cyberkid’ with fluent and easy access to information technology. Livingstone’s (2005) 2-year study of children’s internet usage presents a more upbeat overall picture, however, suggesting that the vast majority of children and young people have access to the internet and that ‘talk of a binary divide between haves and have-nots, or users and nonusers, applies much less to them (children) than to the adult population’ (p. 3). For poor children with ‘internet-illiterate’ parents, though, Livingstone concedes that the picture is much less optimistic. The methodology for Livingstone’s study included computer-assisted personal interviewing with an interviewer present when asking young people about their internet usage, and the study also incorporated an additional and private (CASI) self-completion section of the survey for children’s responses to sensitive questions. A general message from this may be that while online CASI is likely to be an increasingly inclusive option in the future, there will remain for some time to come particular groups of adults and children for whom other options must be considered.

The Development of Viewpoint Interactive

Viewpoint Interactive is in many ways a typical audio-CASI application, but designed with children in mind. It incorporates multimedia with colourful graphics and speech functions, with questions and instructions presented in audio and in text. There are time-limited breaks for computer games, animated on-screen assistants, and the interviewee wears headphones to create a sense of privacy and personalization.

Viewpoint audio-CASI was first developed in 1994 in order to improve the engagement of children and young people in the completion of a paper questionnaire survey tool to measure children’s perceptions of service quality (Davies, 1991). The developers felt that a different approach to data collection was necessary and that a graphical, computer-based method would be a more effective means of undertaking this, particularly with young people (Dotchin and Davies, 1995). The original developers of the Viewpoint audio-CASI approach were from varied backgrounds, including children’s

services, software development and training. There was also experience in the group in producing course materials in engaging formats for access on university intranets.

The Viewpoint Organisation itself was later formally established in the UK in 1999, in order to develop further the Viewpoint audio-CASI approach and to promote the application of this new methodology to social welfare organizations. The newly established organization was able to pioneer the application of audio-CASI with looked after young people in three authorities in the UK, demonstrating benefits in relation to the establishment of a more child-centred approach (looked after children and young people are those, in the UK, who are in the care of the state).

The need for more effective consultation methodologies was given impetus in the UK in the late 1990s by the Government's 'Quality Protects' programme. This was part of the Government's response to the Children's Safeguards Review (Utting, 1997), which made a number of recommendations, including the requirement for a more child-centred approach and for greater monitoring of young people's experiences of service provision. At that time, the importance of empowering children and giving them a voice by encouraging their participation in the planning and development of local services also received recognition in local and regional government in the wider European community (European Union, 1999).

The Viewpoint Organisation has developed a wide range of questionnaires since that time, enabling young people to express and record their views, informing assessments, decision-making and planning. In addition to the catalogue of questionnaires, one-off or specific application questionnaires and customized versions of existing questionnaires are also available. In social services departments, Viewpoint Interactive questionnaires are used for looked after children reviews, child protection reviews, individual assessments and service quality monitoring. In Youth Justice, they are used to complement Youth Justice Board assessment tools, for substance misuse assessments and to expand young people's participation in reviews of detention and training orders. Applications in education include bullying surveys, self-esteem, emotional intelligence and health and lifestyle surveys.

Most of the questionnaires are multiple-choice, with two, three or four responses (Figure 1), but multiselect and sliding scale options are available, as well as open-ended free-text questions. The questions and responses are displayed on the screen and also spoken by an animated electronic assistant incorporated into the software. The 'assistant' acts as host, talking users through the process if required. Instructions,

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Figure 1. Example of a multiple-choice question from a Viewpoint Interactive audio-CASI questionnaire.

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questions and responses can be repeated as often as the user wants by moving the mouse over the relevant area on the screen. The experience of the Viewpoint Organisation has been that even quite young children, and young people with limited reading and writing skills, demonstrate that they can use the system quickly and fluently. Questions and instructions can be personalized, for example with the user’s name and the words they use to describe the service or the names of key individuals known personally to them. Young people report that this makes the experience more interesting and relevant.

The authors have had direct involvement with the development and application of Viewpoint Interactive. Davies is a director of The Viewpoint Organisation, the producers of Viewpoint Interactive, and Morgan, now a lecturer in the Faculty of Health and Social Care at the Open University, was formerly a manager in a local authority children’s department using Viewpoint Interactive with looked after children. Inevitably in presenting this paper there is for the authors a potential conflict of interest, as Viewpoint Interactive is a commercial product licensed to the end-user delivering the questionnaires. With this caveat, however, the authors have attempted to present this material as an example of work-in-progress, and in the absence of specific formal research, offer their views and observations as a summary of feedback from a large number of participating agencies and young people in the UK over a 10-year period.

Examples of Using Viewpoint Interactive in Practice

Looked After Children

In recent years, there has been direct government support and funding for the provision of computers for looked after children and many authorities have offered young people the opportunity to contribute their views to reviews using information technology. About a third of local authorities in England and Wales use Viewpoint Interactive currently. In one authority, participation rates of around 80% have been consistently achieved when using audio-CASI to consult young people in advance of their statutory reviews.

Looked after young people are prompted to think about a wide range of areas of their care when using Viewpoint Interactive. Many local authorities have been reassured by the finding that a majority of young people are satisfied with the care they receive. However, the apparent sense of neutrality that using a computer creates for young people seems to have enabled a significant number to express concerns that, until then, had not so clearly emerged elsewhere, or in some cases had not emerged at all. For example, an initial survey of 25 young people in a London borough revealed that most of the young people were positive about their experiences of being looked after, but that five of the young people had identified a large number of concerns. The authority had been unaware of these concerns and immediately responded to the needs of the young people, and also later extended the use of the survey in the authority.

In a further example, data from Viewpoint Interactive highlighted one young woman who had been placed in foster care in a rural county having lived all her previous life in an inner city area. She wanted to express her continuing discomfort about living in a totally different environment, which was something that had not previously been discussed and of which the authority had been unaware. Another young person in residential care reported significant bullying taking place and a failure by the establishment in which he was living to provide him with his own clothes. In his residential home it emerged that all clothes were shared between the young people, a practice that was unknown to the local authority. In another example, three young people in a large residential unit took the opportunity to voice their concerns about serious physical abuse.

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Child Protection Reviews

Some authorities are extending the use of computers to child protection reviews, enabling young people to more successfully and independently present their views to their review. Viewpoint Interactive questionnaires enable and encourage young people to think about their circumstances in a structured way, especially about how safe they may feel in the environments in which they are considered to be at risk. In one authority, the arrangement was for a young person to complete a Viewpoint Interactive questionnaire before any review at which it was likely that their name could be removed from the child protection register.

Core Assessments

A few local authorities and other agencies have extended the use of Viewpoint Interactive to the core assessment process (the statutory assessment mechanism for the planning and management of complex child care work). DfES guidance recommends that carrying out a core assessment should always be done in a way that helps parents or carers, young people and other relevant family members have their say and be encouraged to take part. In response to this, Viewpoint Interactive questionnaires have been developed to enable young people to comment on each of the recommended development dimensions for the young person's assessment.

Children with Disabilities

The Viewpoint Interactive module for use with children with disabilities has provided young people in both respite and long-term care with new and potentially more reliable opportunities to comment on their circumstances. Computer-assisted interviewing (CAI) has been used for some time in clinical psychology and mental health settings (Calam *et al.*, 2000), providing a useful structure and helping children and vulnerable adults to describe their experiences. Staff using Viewpoint Interactive with learning-disabled children report also that CASI provides a more comprehensible working framework for consultation and participation, especially the facility of being able to incorporate speech, text and symbols to enable and to support communication.

Using computers and computer interfaces can enable a wide range of disabilities to be responded to and the computer can be modified to be operated by different switches, joysticks or touch-screens. The colour of backgrounds and text can

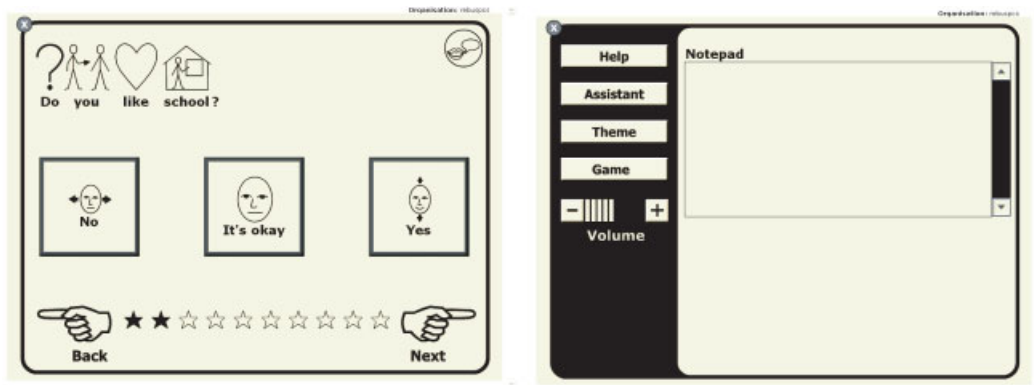


Figure 2. Viewpoint Interactive audio-CASI input screen, adapted for learning disability.

be varied to meet the requirements of those with a visual disability, and less complex backgrounds can be inserted to avoid the distractions of more graphical interfaces. Computer software also provides the opportunity for text to be supplemented by symbolic-language images or photographs, providing substantial opportunities for more personalized interfaces.

While some young people are able to use such customized interfaces without assistance, those with more severe and profound disabilities require the support of someone who knows and can communicate with them. Even when support is required, the use of a computerized questionnaire provides a standardized approach to the interview process, assisting staff who may be less confident to engage with disabled young people or adults. In the illustration (Figure 2), the facilitator can use a combination of keys to reveal the notepad (right), to add comments from the young person or to change colours or introduce games, working at a pace that is comfortable for each individual.

‘Provides a standardized approach to the interview process’

Using Data in Service Planning

Managers and practitioners use Viewpoint Interactive to record the views, wishes and experiences of young people more accurately and effectively. Managers have reported that the availability of data in this form can make a significant contribution to assessment, decision-making and planning in the direct delivery and in the strategic planning of services.

Viewpoint Interactive collects information in an electronic dataset that is immediately available for analysis to the user, to the practitioner or to the researcher. In more traditional data collection, there can often be long delays for the researcher in collecting and collating their data. With a computer-based

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system, however, especially an online one, predefined or user-defined datasets and reports are available as soon as the responses have been submitted.

Standard reports produced from Viewpoint Interactive datasets include monitoring performance against key targets, monitoring the quality of care and other services provided, comparing young people in different circumstances and being informed about specific or localized concerns. These reports provide accurate management information to assist with service improvement and help in setting targets and in monitoring performance. Managers using Viewpoint Interactive report to the Viewpoint Organisation that they have much greater confidence that their base data are up-to-date, welcoming the facility to have more accurate real-time knowledge of how representative their datasets may be. The organization has also been able to support authorities in the production of quarterly and annual reports, measuring trends in the responses of children and young people.

It is important that the issue of confidentiality for individuals completing questionnaires is at the forefront in the questionnaire's delivery and when making use of the results. With this in mind, the terms and conditions of confidentiality should be negotiated and specified in advance for each questionnaire. Some questionnaires are entirely anonymous, while others have varying degrees of specificity written in that may ultimately identify the individual, up to and including the person's full name. Young people need to know who will have access to the information after it is given and what the consequences may be, for example, should their foster carer, social worker, teacher or any other person be told, or inadvertently discover, what they have said. It is usually the responsibility of the professionals administering the questionnaires to ensure that participants are fully briefed, in advance, regarding these issues. Moreover, young people should be allowed to participate only in the context of informed consent based on assurances about who will or will not have sight of their information.

The Practicalities of Completing Questionnaires

The Viewpoint Organisation worked with one authority which had identified a range of locations where young people could go with practitioners to complete questionnaires. They could use their residential or foster placements, but also some schools, family centres and youth centres were identified. Informing young people about different locations seemed to be helpful in offering choice and demonstrating a commitment

from their authority to make facilities available. It has also proved to be particularly helpful for training to be provided for foster and residential carers on the safe use of computers and safe internet behaviour for looked after children. This usually includes providing advice on appropriate locations for computer terminals, avoiding locations that are too private, and for the monitoring of the time and duration for which computers are used.

Consultation and Participation

In one local authority, managers and elected members had for some time met with representatives from their looked after young people for regular consultation sessions. The young people were enthusiastic but felt unrepresentative of their looked after peers, a situation that had been hard to resolve equitably. However, through the use of Viewpoint Interactive in the authority, and over a period of time, the young people were given direct access to the statistical reporting data from the responses of their looked after peers. As a consequence, subsequent meetings with the managers and elected members reversed the power balance on some issues. The young people would arrive at the meeting with charts and statistics expressing the collective and recently collected views and wishes of their peers, which proved to be an effective and meaningful experience of participation for those young people involved. This is an example of where participation and representation were usefully combined, moving the barrier forward a few steps from consultation alone.

An Early Evaluation of Using Viewpoint Interactive

In 1998, the Viewpoint Organisation undertook an early in-house evaluation of young people's responses and reactions to using Viewpoint Interactive in practice. This evaluation took place in three local authorities, one in London and two in county areas. The 150 young people, aged between 7 and 18 years, who were involved in the evaluation were all looked after by their respective authorities and were living in residential or foster care. Generally, the young people were positive about the experience and reported that the process helped in creating a neutral environment, gave them confidence to say what was important to them, and that it enabled them to communicate their views. There was a general preference for respondents to link completing the questionnaires to their statutory

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reviews, rather than being asked to complete specific single-issue questionnaires. This may reflect the observations of Borland *et al.* (2001) that children and young people, like adults, have other priorities in their lives and may not want to give up their valuable time to meet the needs and wishes of adults intent on consulting with them.

Overall, however, since this early and very limited evaluation, it has been the experience of The Viewpoint Organisation that, while participating young people may have varying abilities and may be located in very different settings, such as in sixth form colleges, young offender institutions, primary schools and family centres, they rarely offer negative comments about the experience of completing audio-CASI questionnaires. Occasionally, though, a young person may not be fully engaged and lose interest, or may want more video-game type graphics, but such comments have been from a very small minority. On the other hand, in practice, there are more blocks and barriers from adults who may be anxious about technology, or find the process too time-consuming, may not spend time working with young people, or who seem generally not really to want to hear from young people. However, the experience of The Viewpoint Organisation from the early evaluation and subsequently has been that if adults make the commitment positively to provide audio-CASI, young people welcome the opportunity and are able to engage quickly with both the concept and the process.

Viewpoint Interactive Online

The rapid expansion in the speed, availability and usage of the internet in recent years has made possible a method for delivering Viewpoint Interactive that was anticipated but which in the early days was not achievable technically. In recent years, however, The Viewpoint Organisation’s experience in delivering the online version of Viewpoint Interactive has been that most young people seem entirely familiar with the concept and the reality of the internet. They see it as commonplace and unremarkable to consider entering personal data into a computer, to be recorded and evaluated remotely.

The online version of Viewpoint Interactive first became available in 2002, delivered via the world wide web. In this format, questionnaires with the appropriate permissions and passwords are completed on any computer connected to the internet. Likewise, the person with permission to collect and analyse the data will similarly have access from anywhere and for any number of questionnaires simultaneously within the

agreed permissions. The raw data from Viewpoint Interactive online are recorded and held on secure servers by The Viewpoint Organisation, as the application service provider. This means that new questionnaires and software updates are available without adjustments being required for individual end-user computers and that young people may complete questionnaires from an almost unlimited number of locations to suit their circumstances.

Some local authority managers report, however, that while online questionnaire delivery offers in many respects a much wider range of options with increased flexibility, there remains considerable value in the process of having dedicated and trained assistants from, for example, a local authority participation team taking laptops to children to complete the questionnaires in their own environments. Children completing questionnaires in this way are said by some managers to welcome the commitment made by their local authority and it is also seen to introduce an important element of consistency into the questionnaire completion process. In addition, the 'bystander effect' is reportedly minimized and better regulated in this way, with the visiting assistants being viewed by the children as neutral data collectors rather than as authority figures who may potentially influence their responses. This offers a different form of adult support from those situations where a foster carer or a residential worker is present for the child's completion of a questionnaire online.

Conclusion

The literature in this area suggests that CASI, and in particular audio-CASI, may have a significant role to play in the process of consulting individuals about sensitive subjects. This has also been the experience of The Viewpoint Organisation in their work with vulnerable children, especially with the option of an online facility and the incorporation of software features such as profiling and on-screen assistants. In addition, feedback on the use of Viewpoint Interactive over a number of years has indicated that audio-CASI seems to provide the opportunity for difficult to say things to be said more safely, to be heard more effectively and to be acted upon more accurately.

While practitioners and interviewees using Viewpoint Interactive frequently report that using the software is understandable, intuitive and immediately useful, so far there has been only limited formal research to either establish the need or evaluate the usefulness of this and other similar applications specifically designed for, and used in child care practice

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beyond applications used in specialist clinical psychology and mental health settings. This applies especially to the need for research into the difficulties inherent in the organizational changes necessary to embed CASI methodologies into large service delivery organizations.

CASI may well become an increasingly important consultation and participation tool of the future. However, for many children and young people who already regularly express their views through CASI, the future to some extent is already here. Government plans to expand the availability and use information and communication technology to tackle social exclusion (ODPM, 2005) raise the prospect of many more families and vulnerable adults having online computer access. It is possible, therefore, alongside the work with vulnerable children, that audio-CASI applications may usefully be developed across a wider range of service user groups in the future, to broaden the scope and quality of consultation, service delivery and participation.

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