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Eliciting data from participants using visual mapping as a collection technique

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Abstract

This paper uses the project evaluation of the School-Aged Therapy Service for children with disabilities in Western Australia as an example of alternative ways to gather qualitative data from participants. The purpose of the evaluation was to pave the way for considerable and quick developmental operational change in order to stem the complaints from users of the service and to provide more effective service delivery. With this in mind the research team determined it was necessary to 'map' the current model of operation as there was inconsistency from the staff as to their understanding, and their ideal model of operation before presenting a new model to management. To facilitate the change process the researchers conducted a final focus group two months after the formal evaluation to map the staff's perceptions of how the proposed new model would work and the challenges the changes would produce. This paper presents 'visual maps' that have been drawn by the staff to demonstrate that this technique provides rich, raw, timely, collaborative artefacts that are invaluable for organisations encouraging change.

Key Words: Focus groups, visual maps, change management.

Introduction

This paper uses the project evaluation of the school-aged therapy service for children with disabilities provided by a not-for-profit (NFP) organisation in Western Australia as an example of alternative ways to gather qualitative data from participants. The project used a qualitative research methodology and a collaborative Action Learning (Stringer, 1999) framework and included a mix of face-to-face and telephone interviews with key stakeholders, parents of children with disabilities and school principals as well as two focus

groups with therapy staff. Collecting data by conducting interviews represents the status quo for most qualitative research, however when it came to collecting data from the staff in the focus groups, it was considered it might be more efficient to capture their perceptions with a more creative methodology in the form of visual mapping. It was considered that this could provide an opportunity to capture the complexities of the models of service.

The evaluation of the program had one prime objective from management and that was to hear from the users of the program, the school and therapy staff and to use this information to create a new model of operation from which to run the program in the future. Therefore the purpose of the evaluation was to pave the way for considerable fast developmental operational change in order to provide more effective service delivery. With this in mind the research team determined it was necessary to 'map' the current model of operation as well as an ideal model of future operation according to the staff before presenting a new model to management. The justification of mapping the current operational model was that there appeared to be incongruence between management's view and the staff.

To begin the change process, two months after the commissioned program evaluation had been completed the researchers conducted a final focus group to map the staff's perceptions of how the proposed new model would work and the challenges the changes would produce. This paper presents the visual maps drawn by the staff: the current operational model, their ideal operational model and their reaction to the new proposed model. The paper argues that using a visual mapping technique within a focus group setting to elicit data provides rich, raw, timely, collaborative data that is invaluable when attempting to develop new operational models for organisations involved in a change management process.

Operational change

The process of operational change within organisations is complex, convoluted and time consuming. There is a wealth of literature on managing change in organisations stemming from the seminal works of Senge, Kleiner, Roberts, Ross, Roth, and Smith (1999); Kotter (1995, 2002); and Bridges (2003). The goal of organisational change is to improve work content, structures and relationships (Rusaw, 2007). The rationale behind change for this NFP was that the service had had significant growth in the number of clients in the program, and standards monitoring by the funding body had suggested some areas for service improvement, within the current funding. Management also had a commitment to the provision of more effective service delivery. However, tensions exist between staff embracing change and those fighting for things to remain as they are (Kavanagh & Ashkanasy, 2006). Some people respond positively as they recognise change as a chance to grow and learn, while others may react negatively to even the smallest change (Cole, Harris, & Bernerth, 2006). This is because organisational change makes demands on the individual employee in terms of their psychology and physiology (Sverke, Hellgren, & Naswall, 2002; Grunberg, Moore, & Greenberg, 2001). Resistance or support of any organisational change is in the end an individual decision (Armenakis, Harris, & Field, 1999; Cole et al, 2006). Budget constraints can also often hinder change and gaps in operational functions can occur (Oakland & Tanner 2007). The researchers were aware of the importance of involving the staff of the organisation when encouraging change and this influenced the data collection methods. In addition the proposed new model was developed with a clear view of the budget constraints.

Context of the project where the technique was implemented

The service is a not-for-profit organisation which provides therapy services to school aged children with disabilities. The service operates under the banner of a family-centred practice

model. There are two generally contended tenets at the core of the family-centred service philosophy: First, that families are the key decision makers and partners to any interventions in every stage of service delivery, and collaboration with them is essential to positive outcomes; and second, that there is diversity among families and within families and this will result in diversity of needs and goals in any designed interventions (Mandell & Murray, 2009; Park & Turnbull, 2003; Trivette & Dunst, 2007; McWilliam, Snyder, Harbin, Porter, & Munn, 2000). At the heart of family-centred practice is the relationship between the parent and the professional/s at all stages of service delivery. The success (or otherwise) of family-centred practice is most often based in this relationship and the communication that underpins it as well as the complex set of attributes and skills required by professionals to work with diverse families (Dempsey & Keen, 2008; Dinnebeil, Hale, & Rule, 2000; Park & Turnbull, 2002).

One operational outcome of the change process was to have their staff working as trans-disciplinary teams. In a trans-disciplinary team, each 'expert' shares their expertise with others. If all team members are committed to evidence based best-practice, then the potential for effective outcomes exponentially increases (Bundy, et al, 2008). This is further supported by the work of Argyris and Schon (1974) who stress the importance of training and mentoring of junior staff in their professional development – a trans-disciplinary team with members with diverse experience can provide multiple opportunities for this to occur (Law, Lindsay, Peacey, Gascoigne, Soloff, Radford & Band, 2002).

Rationale for using a visual mapping technique within a focus group

There is a long history within the literature that indicates the dilemmas of collecting qualitative data through face-to-face interviews and focus groups and the problematic nature of this interaction for researchers (Patton, 2002; Merriam, 1998; Denzin & Lincoln, 1994). While there has been a continual debate in the literature about 'what counts' as an interview,

it is the wide variations of this format of data collection that have made it such a universally popular instrument. Over time, researchers have developed a diverse range of ethnographic tools to elicit information from participants. The camera and pictures have a long history as a tool for data collection, but can also be used as mediating artefacts within the interview process to stimulate research subjects (Stanczak, 2007). The Rorschach Inkblot Test (Exner, 1986) is widely known and utilises inkblot shapes to encourage insight into a patient's unconscious world. Shani and Rosenberg (1992) developed a burn prevention educational programme for schools in Israel using pictures as a set of 60 slides that showed dramatic hazardous situations and the consequences of these situations in the form of injuries. Pine, Mogg, Bradley, Montgomery, Monk, McClure, Schweder, Ernst, Charney, and Kaufman (2005) conducted research into the use of picture-based visual probe tasks as a method to integrate research on adult anxiety, paediatric anxiety, and cognitive neuroscience. The Repertory Grid Technique (Kelly cited in Scheer & Catina 1996; Reger, 1990) is a form of interactive discussion where the subject is instrumental in designing personal constructs with the guidance of an investigator. Stock, Davies, & Wehmeyer (2004) conducted research in testing and assessment of individuals with intellectual disabilities using pictures. Lewis, Osofsky & Moore (1997) studied children's drawings to reveal children's perceptions of violence and their feelings of safety and trust. The use and analysis of drawings has been used as a method for clinical assessment of children's cognitive and emotional functioning, attitudes towards their families, and traumatic occurrences in their environment (Hammer, 1980; Hibbard & Hartman, 1990; Moore, 1996). Smith (2000) used dolls with very young children who were victims of sexual abuse as props so that children could indicate what they had experienced.

Drawing on the literature and past field experience, the researchers chose to be creative in their data collection techniques within the traditional focus group methodology and asked the participants to visually represent their views. The reason for this deviation from the norm was that it was felt that richer data might be obtained through the participants drawing their responses to the research questions rather than providing verbal responses in a traditional focus group. Additionally, researcher understanding of the complexities of a service model within an organisation requires an understanding of the layers and complexity in which staff navigate on a daily basis. Additionally, visually representing their responses required no transcription time and was a less expensive alternative to the traditional focus group whilst providing rich, raw data.

Background

The research project

This paper uses data gathered by field researchers in the evaluation of the school-aged therapy service in Western Australia (WA). This is a service contracted by the Disability Services Commission (DSC) to provide therapy for a number of children who meet the DSC eligibility criteria. In March 2010, the program was providing services for 827 students from years one[1] through to high school completion, attending schools within a targeted WA Department of Education region. Of this total number of clients, 173 students were aged between 5-8 years; 308 students between 9-12 years; 187 students between 13-15 years and 159 students 16-19 years. Because of population growth in the program and the service facing workforce challenges in recent years, with difficulty recruiting speech pathologists, occupational therapists and physiotherapists; access to services were prioritised. As a result

[1] Some children may have reached the age of five and be in pre-primary centres in Education Support Schools.

of the prioritisation process, some children did not receive services or received less service than their parents believed they needed, and the agency received several complaints.

Methodology and sample

A collaborative Action Learning (Stringer, 1999) framework was used throughout the study. Within an Action Learning methodology the aim is to identify learning gained from experience and to test program improvement strategies. An Action Learning methodology collects data at intervals during the project, and reviews findings collaboratively with the reference group established for the study. Action Learning methodologies also support sustainable and transparent change management processes.

An initial focus group for 8 staff was conducted, in line with an action learning framework. The staff focus group consisted of two physiotherapists, three occupational therapists and three speech therapists. The length of employment in the service for the staff ranged from 2 months to 8 years, with an average employment of 3 years. A second focus group was held two months after the formal evaluation was completed. This focus group was conducted with 20 staff: 6 managers, 3 physiotherapists (2 from the original focus group), 5 occupational therapists (1 from the original focus group) and 4 speech therapists (1 from the original focus group), and 2 therapy assistants. The purpose of this focus group was to determine the level of support for the new proposed operational model and to work through the challenges the changes created. It is the focus group data collection outputs that is the topic of this paper.

In the larger study additional data was collected from face-to-face semi-structured interviews with service provider representatives, and telephone interviews with seven parents of children and seven school principals who use the service.

Focus group outputs

In the first focus group staff was asked to draw their perception of the current operational model of the current program. Staff was divided into two groups (made up of equal proportions of staff qualifications) and given pens and large butcher's paper. The instruction was to map out their perceived current operational model. Figure 1 is a visual map drawn by the therapists that shows that in the assessment phase of the current operational model referrals are made to the service manager who determines eligibility, completes the administration requirements, and then sends the child's information onto the therapist. Once a child is accepted onto the program meetings are set up between the therapists, the school and the family. The initial goals for the child are determined and sent back to the office. The child receives ongoing therapy at school until they either move from the area, complete high school or no longer require therapy. At this point they exit the program.

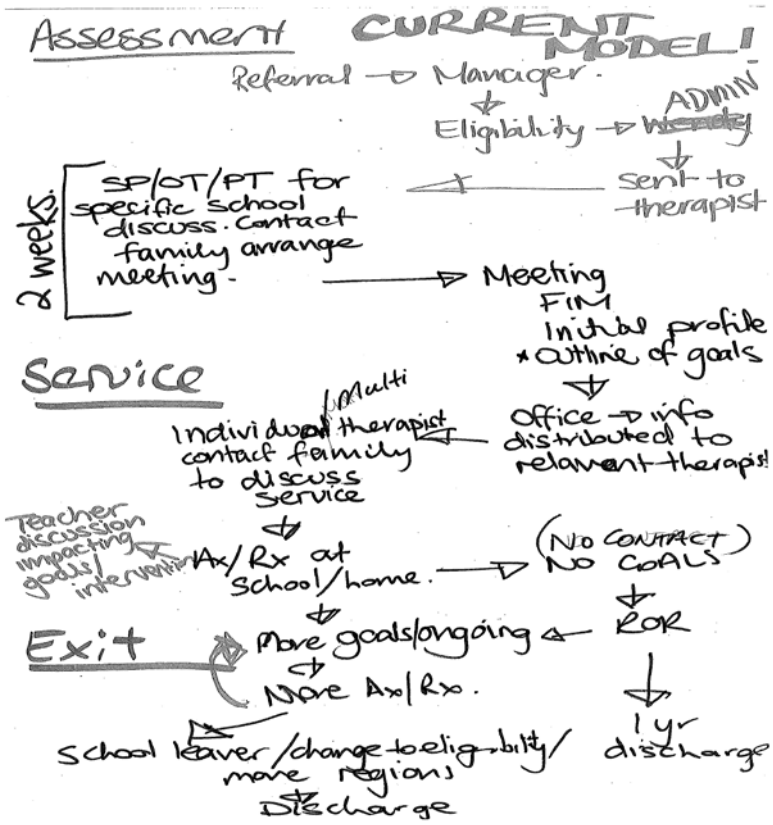

Figure 1: Therapist's current operating model

The weakness of the current model of service was that although the goals of the program were to provide high quality family-centred services, the operation of the program was constrained by a number of external factors. The program difficulties identified by the focus group appear in Table 1. Three main difficulties of the current model were identified: there were not enough staff to provide the required therapy (particularly one-on-one therapy); there was no additional behavioural support in the form of those with psychological and professional family/social support skills; and, there was a lack of resources such as equipment and aids to assist families. In addition, therapists reported communication problems with management, as well as inefficient intake of new graduates. They also felt there was insufficient mentoring support and continuing professional development for new graduates, and believed this contributed to staff turnover. Finally, the therapists identified that there was

little in place to assist families with children transitioning out of school. Staff claimed that families were often left unsupported during this phase and the therapists had limited knowledge on how to advise families.

The data confirmed that families were consulted about therapy, and that they were generally happy with many aspects of the service. However, there are many indicators that the services were not yet genuinely 'family centric', and, in practice therapists operated as a multi-disciplinary rather than a trans-disciplinary team (King, 2009). In this context, individual therapists developed programs for children and young people and communicated with both families and schools about how to implement programs. Communications between therapists, schools and families differed between therapists and schools involved. There was some evidence that families and schools did not always understand (or concur with) the service delivery model used.

Table 1: Gaps in service as drawn by the therapists

Time poor / lack of therapists

↳ Tasks take longer than they should / need to
↳ Stress / burnout for therapists / families / clients
↳ Guilt for not providing service that could be provided with more time. Feel like you are not a good therapist.
↳ Clients unable to achieve full potential
↳ Lack of time to do full assessment → resulting in more generic recommendations rather than client specific
↳ Proactive families miss out

Lack of psychology / social work services (behavioural support)

↳ Families in crisis
↳ Low socio economic areas

Resources

- Assessments
- Products (e.g. sensory aids)
- Office equipment (computers, faxes, printers, internet access, sink, air conditioning)
- Equipment to assist service provision (video camera's / DVD burner)

↳ Results in ⇩ quality of services

- Effective communication and management / approachability
- Geographical locations of office (distance, easily forgotten)
- Fight to get adequate resources is exhausting, time consuming and deflating
- Intake of new referrals this year – ineffective / inefficient
- Mentoring / training / PD for therapists (particularly new therapist), lack of senior therapists (particularly) and huge spread of offices
- School leavers / students transitioning out of service – no longer eligible for the limited services / → support for families → therapists limited knowledge of options.

The staff was then asked to map how their ideal operational model would look. Figure 2 maps the therapist's ideal operating model for the program. The therapists supported a more flexible model that worked collaboratively with families around their work and home life schedules in teams comprising of the same staff. They also viewed additional support for families in the area of psychology and family/social support as much needed changes to the

program as well as a specific intake/exit role. In addition they felt there needed to be a point when they couldn't take on any more cases; a point where the service was 'full' and future cases were moved to a 'wait list' for future review. To support exiting of program users there needed to be a clear contract of services established that had an end point.

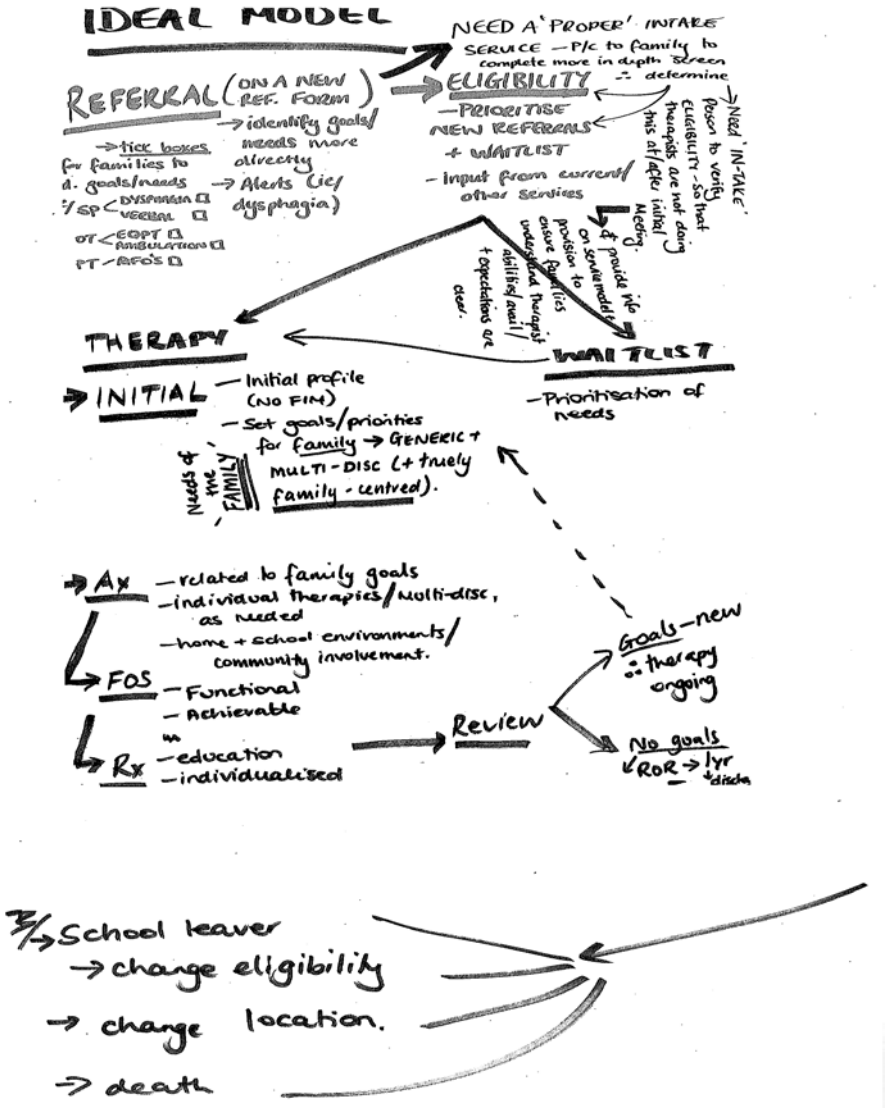

Figure 2: Therapist's ideal operating model

Benefits of the visual mapping technique

This paper does not present the new operational model recommended to the NFP in their change journey, but rather presents the visual maps drawn by the therapists as an example of

a tool that we found to be useful for both data collection and the underpinning change management process. A detailed discussion on the model development is the topic of a forthcoming paper. The operational model the researchers presented as an evaluation output was viewed favourably by management however, not all aspects were agreed to for implementation and the new model has since evolved. As part of the evaluation it was agreed that a second focus group with staff would be conducted two months after the review to help facilitate the planned operational changes and the gauge staff feedback on a proposed new model. This session had two positive results: it gave the staff an opportunity to be de-briefed as a team as they entered the change phase, and it was an opportunity for the researchers to give back to the participants. Management viewed this focus group as an information sharing session before significant operational change began. Figure 3 depicts the reaction of the therapists to the proposed new operating model. They were asked what they thought about the new model and the challenges they faced to implement it. The staff identified several challenges to the implementation of the new model; the most significant included:

- Getting each micro team working well together;
- Management of caseloads;
- Clarifying roles of therapists, management and family;
- Development of a comprehensive assessment to clarify client goals with family;
- Getting used to/understanding the trans-disciplinary model and including the family; and,
- Challenging the parents as being ‘experts’ in service delivery.

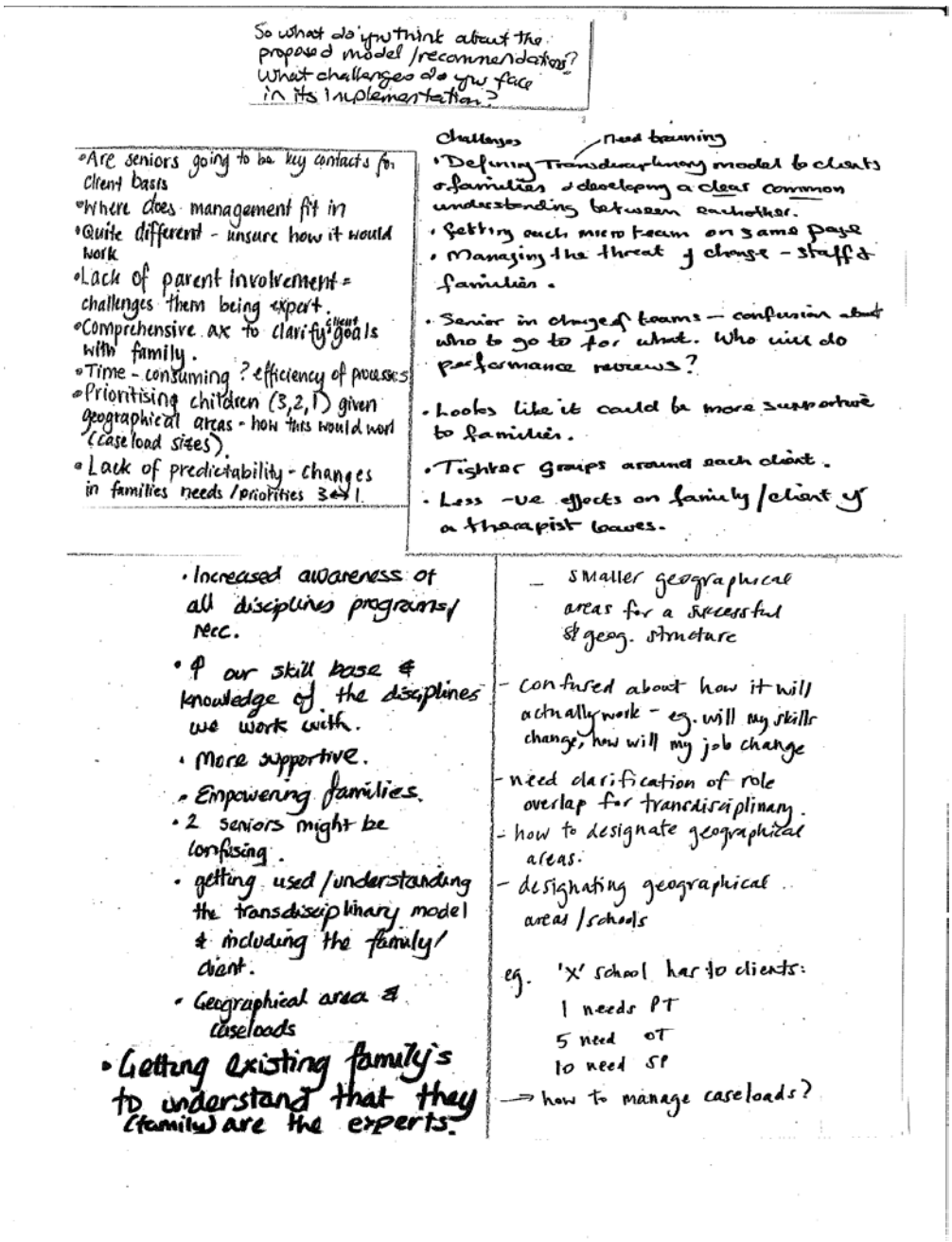

Figure 3: Therapists' perceptions on the new model and implementation challenges

Visual maps vs interviews

Using group visual mapping techniques to collect data in the two focus groups for this research project was a useful and data rich activity. Working as a group the therapists were able to clearly draw the current model, continually confirming with each other within the group that their drawing was an accurate account of not only their individual but also their

group understanding of the service delivery model. This was particularly useful for cross disciplinary understanding of their workplace practices. We argue that this discussion and confirmation process achieved a far more accurate picture of events than we could have derived from individual interviews or indeed from a focus group interview that involved merely discussion. One of the issues faced by researchers in an evaluation is the lack of lived experience of the informal understanding of the way an organisation or program works, and this method worked well as a communication tool between stakeholders and researchers.

The pictorial display as a research artefact, although crude, is a far more powerful yet simple tool. In addition, to gather data in this manner is less time consuming as it does not involve the lengthy transcription process of recorded interviews. A further advantage was the cathartic element for the therapists. Drawing the current model with all of the difficulties and gaps in the kind of service they as professionals would like to develop but could not do, acted as a 'de-brief' and support session. Frustrations were not only voiced but represented as a picture. In some instances words were written with extreme emotion, in bold and large size font. These also provided researchers with 'hints' regarding areas of service delivery that needed further interrogation.

The development of the ideal model too, was an exciting process for the therapists. All members of the focus group were active contributors. They moved from the negative, frustrated space of the current service model to a positive frame as they looked forward to working in their ideal therapy model. Each staff member discussed and conferred with other staff to develop this model. Howard & Hegarty (2003) found that staff who support each other together with a venue that allows expression, is important in reducing staff stress and increasing commitment. Thus this method provided both artefacts of the research and positive change management activities. This was indeed a collaborative, supportive environment that produced data for the research but also benefitted the participants. We argue that without this

activity the researchers would have had difficulty describing an ideal therapy model that would reflect the lived experience of the staff – a critical component to any future model. Traditional interviews or focus groups would not have produced such an accurate account.

The final focus group conducted two months after the completion of the formal evaluation brought together four of the original focus group members as well as other staff. The staff was asked to develop a pictorial account of their response to the proposed implementation of the new model and the challenges this would produce. The staff once again found this exercise a valuable experience and a further opportunity to support each other as they moved through the change process. As a process, this final session raised questions and fears as well as some useful answers to possible future issues and an element of excitement for change. While it was largely used as an introduction to the new model to begin staff understanding of possible future change, the exercise of visual mapping provided a tool for further idea development as well as an emotional outlet for the feelings they held around change.

Conclusion

Researchers conducting qualitative research use standard methods of face-to-face and telephone interviews and focus groups as data collection tools. This paper has presented an alternative method for collecting data within focus groups; visual mapping. We found that using this method produced rich, detailed artefacts that were a more accurate account of the operational model of a service delivery program for children with disabilities. This accuracy was a critical element of the research evaluation for us as researchers, as it enabled an understanding of the lived experience of the model by a major stakeholder group – and allowed for further focussed interrogation of other stakeholders. We argue that interview data

with individuals or focus group discussions would not have produced what we achieved pictorially. As the saying goes, 'a picture paints a thousand words' (Barnard, 1921).

References

Argyris, C., & Schon, D. A. (1974). *Theory in practice, increasing professional effectiveness.* San Francisco, CA: Jossey-Bass.

Armenakis, A.A., Harris, S.G., & Field, H.S. (1999). Making change permanent: a model for institutionalising change, *Research in Organizational Change and Development, 12*, 97-128.

Bridges, W. (2003). *Managing Transitions: Making the Most of Change*, 2nd ed., De Capo Press, Cambridge, MA.

Bundy, A., Hemsley, B., Brentnall, J., & Marshall, E. (2008). *Therapy services in the disability sector: Literature review*. NSW: NSW Department of Ageing, Disability and Home Care.

Cole, M.S., Harris, S.G., & Bernerth, J.B. (2006). Exploring the implications of vision, appropriateness, and execution of organizational change, *Leadership & Organization Development Journal, 27*(5), 352-67.

Dempsey, I., & Keen, D. (2008). A review of processes and outcomes in family-centred services for children with a disability. *Topics in Early Childhood Special Education, 28*, 42-52.

Denzin, N.K. & Lincoln, Y.S. (1994). *Handbook of Qualitative Research*. Sage, Thousand Oaks.

Dinnebeil, L. A., Hale, L. M., & Rule, S. (2000). Early intervention program practices that support collaboration. *Topics in Early Childhood Special Education, 19*, 225-235.

Exner, J.E. (1986). *The Rorschach: A Comprehensive System.* 2 ed. New York: Wiley 1986.

Grunberg, L., Moore, S.Y., & Greenberg, E. (2001). Differences in psychological and physical health among layoff survivors: the effect of layoff contract, *Journal of Occupational Health Psychology, 6*(1), 15-25.

Hammer, E. (1980). *The clinical application of projective drawings*. Springfield, IL: Charles C Thomas.

Hibbard, R.A. & Hartman, G. (1990). Emotional indicators in human figure drawings of sexually victimised and non-abused children. *Journal of Clinical Psychology, 46*(2), 211-219.

Howard, R., & Hegarty, J.R. (2003). Violent incidents and staff stress, *British Journal of Developmental Disabilities, 49*, 3-21.

Kavanagh, M.H., & Ashkanasy, N.M. (2006). The impact of leadership and change management strategy on organizational culture and individual acceptance of change during a merger, *British Journal of Management, 17*(1), 81-103.

King, G., Strachan, D., Tucker, M., Desserud, S., & Shillington, M. (2009). The application of a transdisciplianry model for early intervention services. *Infants & Young Children*. 22 (3), 211-223.

Kotter, J.P. (1995). Why transformation efforts fail, *Harvard Business Review, 73*(2), 59-67.

Kotter, J.P. (2002). *The Heart of Change: Real-life Stories of How People Change Their Organizations*, Harvard Business School Press, Boston, MA.

Lewis, M.L., Osofsky, J.D. & Moore, M.S. (1997).Violent cities, violent streets: Children draw their neighbourhoods, in J. D. Osofsky (Ed) *Children in a violent society*. Guilford Press: New York, 277-299.

McWilliam, R. A., Snyder, P., Harbin, G. L., Porter, P., & Munn, D. (2000). Professionals' and families' perceptions of family-centred practices in infant-toddler service delivery. *Early Education and Development, 11*, 519-538.

Merriam, S. B. (1998). Qualitative research and case study applications in education. San Francisco, CA: Josey-Bass Inc.

Moore, M.S (1994). Common characteristics in the drawings of ritually abused children and adults, in V. Sinason (Ed.), *Treating Survivors of Satanist Abuse*, New York: Routledge.

Oakland, J.S., & Tanner, S.J. (2007). A new framework for managing change, *The TQM Magazine, 19*(6), 572-89.

Park, J., & Turnbull, A. P. (2003). Service integration in early intervention: Determining interpersonal and structural factors for its success. *Infants and Young Children, 16*, 48-58.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Pine, D.S., Mogg, K., Bradley, B.P., Montgomery, L., Monk, C., McClure, E., Schweder, E., Ernst, M., Charney, D. & Kaufman, J.(2005). Attention Bias to Threat in Maltreated Children: Implications for Vulnerability to Stress-Related Psychopathology. *The American Journal of Psychiatry, 162*(2), 291-296.

Reger, R.K. (1990). Managerial thought, structures and competitive positioning. In A. Huff (Ed.), *Mapping Strategic Thought*. Chichester, Wiley.

Rusaw, C.A. (2007). Changing public organizations: four approaches, *International Journal of Public Administration, 30*(3), 347-61.

Scheer, J.W. & Catina, A. (1996). Empirical Constructivism in Europe – The Personal Construct Approach. *Giessen: Psychosozial Verlag*, pp. 13-17.

Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., & Smith, B. (1999). The Dance of Change: the Challenges of Sustaining Momentum in *Learning Organizations*, Nicholas Brealey, London.

Shani, E., Ayalon, A., Hammad, I.A., & Sikron, F. (2003). What Picture is Worth a Thousand Words? A Comparative Evaluation of a Burn Prevention Programme by Type of Medium in Israel, *.Health Promotion International, 18*(4).

Smith, C.M. (2000). Young children's use of dolls to represent themselves. *PsychINFO, Dissertation Abstracts International: Section B: The Sciences and Engineering, 60*(9-B), 4934.

Stanczak, G.C. (2007). *Visual research methods: image, society, and representation*, Sage Publications: California.

Stock, S., Davies, D.K., & Wehmeyer, M.L. (2004). Internet-Based Multimedia Tests and Surveys for Individuals with Intellectual Disabilities. *Journal of Special Education Technology, 19*(4), 43-47.

Stringer, E. T. (1999). *Action research (2nd ed.)* Thousand Oaks: Sage.

Sverke, M., Hellgren, J., & Naswall, K. (2002). No security: a meta-analysis and review of job insecurity and its consequences, *Journal of Occupational Health Psychology, 7*, 242-64.

Trivette, C. M., & Dunst, C. J (2007). Capacity-building family centred help giving practices. *Winterberry Research Reports, 1*(1), 1-10.