A Graphic and Tactile Data Elicitation Tool for Qualitative Research: The Life Story Board

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Abstract: Data collection methods for qualitative research are varied and have a rich history. The Life Story Board (LSB) is a game board-like tool that is used to construct a visual representation of a person's narrative and his/her related context. In our study, we comparatively assessed the LSB as a data elicitation tool for social science research. We reviewed eight Canadian research projects that have used the LSB as data elicitation tool for qualitative research and assessed the LSB on the feasibility of its use, on its effectiveness to elicit information, on aspects that facilitate and/or hinder its use, and how it compares with conventional interview approaches. Our findings suggest that the LSB can be used with study participants of different gender, age, ethnicity, and life circumstances; that it is effective as a data elicitation tool, and that it facilitates engagement with interviewees, without presenting any major hindrances.

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1. Life Story Board (LSB)

Data collection methods for qualitative research are varied and have a rich history. Among some of the most frequently used methods to collect qualitative data are in-depth interviews, semi-structured interviews, focus groups, journals, and participant observation. Over the last several decades, new modalities such as photovoice (WANG & BURRIS, 1997; WOODGATE, ZURBA & TENNENT, 2017), body mapping (GASTALDO, RIVAS-QUARNETI & MAGALHÃES, 2018; GASTALDO, MAGALHÃES, CARRASCO & DAVY, 2012) and genograms (McGOLDRICK, GERSON & PETRY, 2008) have emerged. One promising new tool is the Vidaview Life Story Board (LSB). To assess the utility of the LSB as a qualitative data collection tool for social science and health research, we

compared and analyzed eight recent research projects that utilized the LSB to gather data. [1]

Conceptually the LSB is a visual schema with which to map out various elements and associations, internal and external, related to a personal situation, lived experience or area of narrative inquiry. Mental and verbal content is made visual, which opens up new perspectives and ways to engage with the material. The emerging *lifescape* is multidimensional, depicting inter-related layers like a composite map of the session's conversation. [2]

The LSB is a game board-like tool that is used to construct a visual representation of a person's narrative and related context. The LSB facilitates the conversation between interviewee and interviewer. It consists of a kit of magnetic card sets of elements, markers, guide sheets, and accessories, with a 19" × 26" trifold magnet-receptive play board. The board's colored zones correspond to the personal self (yellow), family and close relations (green), the community and environment (blue), along with a red timeline across the top of the board (Figure 1). Element cards of different shapes placed on the board represent persons and other entities, activities, temporal events, places, and internal, mental, affective components (e.g., feelings, roles, relationships, values). Figure 2 shows the LSB kit itself before use, and Figures 3 and 4 show two examples of completed LSB lifescapes providing a multi-dimensional visual composition of aspects arising from the interview session.
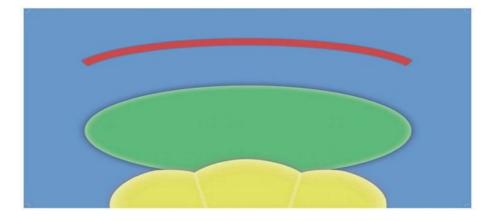

Figure 1: LSB board

Figure 2: LSB kit

Figure 3: Life-scape example (Aboriginal males study)

Figure 4: Life-scape example (Newcomer workers study) [3]

Introductory training to use the LSB is typically offered in one or two day small group workshops that include demonstration and experiential components. The content and process of the training may vary based on the objectives and interests of participants. The standard LSB kit includes a 40 page manual and several guide sheets that introduce LSB concepts and explain the Elements card sets, marker sets and other components. The purchase of the LSB ($300 US) is associated with a one- or two-day small group training workshop, and two to three hours of individual orientation, in-person or via web-video. [4]

An LSB session differs from face-to-face verbal dialogue in that the storyboard becomes the focus of attention and interviewees are both subject and observer of their own narrative self-schema. This has the potential to open personal reflections and ways to share and disclose. For the interviewer, the use of the LSB opens avenues of exploration, dialogue and understanding. In the course of a storyboard session, connections often "come into view" as a novel experience for the interviewee. [5]

The LSB was developed by Dr. Robert CHASE in the mid-1990s as an adaptation of the genogram (McGOLDRICK et al., 2008), constructed with cards on a painted canvas surface as a way to help war affected children attending an innovative expressive arts program in Sri Lanka (CHASE, 2000). Further trials in various developing country settings refined the process for more open-ended narrative mapping (CHASE, 2008). In Canada, early pilots were with Indigenous adults (CHASE, MIGNONE & DIFFEY, 2010) and school counselors working with newcomer students in Winnipeg schools (CHASE, MEDINA & MIGNONE, 2012). In 2010, the current format of a tactile game board was devised for clinical applications in counseling and therapy in an office setting. The initial study of its

use by counselors with newcomer immigrant adults found the LSB to be helpful for disclosing difficult life events (CHASE & LUDWICK, 2016). Its success in overcoming communication barriers and eliciting rich therapeutic information led to opportunities to explore its use as an interview tool in qualitative social science and health research (CHONGO, CHASE, LAVOIE, HARDER & MIGNONE 2018; STEWART-TUFESCU, CHASE, HUYNH & MIGNONE, 2018). [6]

In the context of qualitative research methods, how the LSB is applied in a given setting is determined by the session's purpose and the relative merits of the LSB's properties: visual-spatial, task-based, cognitive, communicative, expressive, reflexive, or performative. Adopting the LSB as interview tool typically involves selecting which activities and components in the LSB kit (e.g., graphic marker sets, clay, colored chips, scale cards) are to be utilized in the interview protocol, and adapting the researcher's questions to the format and process of a LSB session. [7]

Most researchers who consider using the LSB as interview tool are already fairly clear about the purpose and scope of their anticipated project. The session process can be directive and methodical, or non-directive and responsive to the conversation flow. Storyboarding can be a process of co-construction, facilitated by empathic, engaged listening; it is flexible whether physical storyboarding is by the interviewee, led by the interviewer or shared. [8]

Factors to consider when choosing to use the LSB include its influence on the researcher's stance, positioning, and his/her relative role in co-construction; interviewee-dependent factors; overall study methods; and the anticipated data to be generated and analyzed. Hands-on storyboarding practice and the experience of being both interviewer and interviewee in LSB sessions informs how to adapt the draft question guide and interview protocol into the format of an LSB session's opening, body and closing phases. Other factors to consider are the physical setting of where the interviews will take place, length of time required, as well as choices of audio/video recording and photographing of the lifescape. [9]

We will begin with a review of the literature on data elicitation techniques, followed by identifying the study questions (Section 2). After that we will describe the research projects in our review (Section 3), and detail the methodology of the study (Section 4). We then provide a thorough presentation of the findings (Section 5), and conclude the article with a discussion of the findings (Section 6). [10]

2. Data Elicitation Techniques and Review Questions

Several authors (PATTERSON, MARKEY & SOMERS, 2012; UMOQUIT et al., 2008) argue that in qualitative studies, data collection approaches that combine verbal interviews with graphical diagrams and timelines may be more amenable to marginalized participants and can facilitate more diversified exploration and representation of participants' life experiences. More so, KOLAR, AHMAD, CHAN, & ERICKSON (2015) discuss the value of "power-conscious epistemology" where interviews with marginalized groups are approached as an "active, co-constructive process between the interview participant and researcher" (p.16). Other authors (GRINGERI, WAHAB & ANDERSON-NATHE, 2010; NICHOLLS, 2009; SMITH, 1990) argue that this provides a shift in perspective. In the words of KOLAR and colleagues (2015, p.16) "a researcher moves away from conventional approaches that treat interviews as pipelines between the research 'subject', positioned as the passive conveyor or object of knowledge, and the researcher, who is the source of objective authority eliciting information." [11]

To address these concerns, numerous researchers have developed different albeit confluent elicitation techniques, several of which share aspects with the LSB. KOLAR and colleagues examined the use of visual timelines to supplement and situate semi-structured interviews. WALL and HIGGINS (2006) designed a visual drawing task in the interview process with the intention of reducing the tension between interviewers and children participants. The self-portrait and the relational map utilized by BAGNOLI (2009) allowed youth participants (age 16-26) to construct their own representations as the basis for further interviewing. Similarly, HAIDET et al. (2008) utilized life-circle diagramming in a participant-led process of elicitation with medical student participants whereby they would draw a diagram of the relationships that influenced them to become doctors. [12]

In contrast, researcher-led diagrammatic elicitation involves the researcher drawing the diagram during the data collection process (with the participant's active input) for discussion or the participant editing a researcher-prepared diagram (UMOQUIT, TSO, VARGA-ATKINS, O'BRIEN & WHEELDON, 2013). Overall, these techniques can be categorized as visual, graphic and tactile elicitation tools in that they involve drawings, diagrams, and hands-on tasks, complementing the verbal interviews. The LSB fits into these categories, and thus an assessment of its relevance as a visual, graphic and tactile data elicitation technique is merited. [13]

To our knowledge, the LSB has been utilized in eight studies to date. We review them here with a focus on assessing the utility of the LSB as a data elicitation tool for qualitative research. Specifically, to identify strengths and vulnerabilities in a critical way, we sought to answer the following questions: 1. How feasible is the LSB as a tool for interviewing? 2. How effective is the LSB as a qualitative data collection tool? 3. What aspects of the LSB process play a role in facilitating and/or hindering data collection? 4. How does the LSB compare with conventional face-to-face interviews? [14]

3. Research Projects

This section presents a brief description of eight Canadian research projects that used the LSB for data elicitation purposes reviewed in our study.

· *A Training Report to Use Lifestory Board™ to Address the Met and Unmet Needs of Vancouver's Homeless/Street Involved Youth* (Street Involved Youth) (NAPASTIUK, 2015): A social work student researcher examined the met and unmet mental health needs of homeless youth in Vancouver, British Columbia under the auspices of a child youth care agency. LSB was chosen to allow for a more free-flowing interview process, respecting that youth are natural storytellers and authors of their own life stories. The researcher interviewed four homeless teenagers (19-22 years of age) and used a narrative analysis of their extended accounts.

· *Expanding Conceptualizations of Harm Reduction: Results from a Qualitative Community-Based Participatory Research Study With People Who Inject Drugs* (Harm Reduction) (BOUCHER et al., 2017): Health researchers in Ottawa, Ontario, had previously established a community-based participatory research partnership among people who use injection drugs in order to conduct surveys regarding drug use, housing, and use of social, health and mental health services (LAZARUS et al., 2014). Recognizing that surveys alone fail to capture lived experience and that trauma and stigma hinder access to health and social services, researchers adopted LSB methods hoping to overcome challenges of face-to-face interviews, such as barriers of power, trust and discomfort sharing difficult experiences. The study aim was to enhance the understanding of harm reduction practices among people who use injection drugs in Ottawa. Twenty four LSB interviews were conducted by three peer interviewer-storyboarder pairs. Content analysis generated themes and sub-themes that were validated in focus groups with the peer research associates. Seven researchers and peer interviewers conducted the study.

· *The Life Story board: A Promising Task-Oriented, Visual Research Tool to Explore Children's Perspectives on Well-Being* (Children's Wellbeing) (STEWART-TUFESCU et al., 2018): The research team chose to use the LSB for its suitability with children's evolving capacity, as a hands-on task-based activity, and its visual schema to depict narrative information in diverse ways. The study was embedded within a larger international Children's Worlds study (BEN-ARIEH, DINISMAN & REES, 2017) that aimed to understand children's subjective well-being and how they experience daily activities within their families, neighborhoods and schools. The LSB interviews were conducted in child centers in Winnipeg, Manitoba, with 21 children ages 8 -12 (boys=8, girls=13).

· *Newcomer Workers Voices Matter: Learning From the Group Story* (Newcomer Workers) (CHASE & LUDWICK, 2016): The study objectives of this participatory research project were to test LSB methods with immigrant workers in a Winnipeg food processing plant as a way to better engage newcomers not fluent in English, and to facilitate a collective process to review common experiences in their personal stories. LSB methods were

chosen to diffuse some of the attention on the interviewee and to map out different aspects and challenges of the participants' jobs, workplace dynamics and their journey of migration. Seven semi-structured LSB interviews with an interpreter were digitally recorded (video and audio) with a camera mounted above the storyboard.

- *African Immigrant Women Living With HIV: An Exploration of Care and Support* (African Immigrant Women) (MIGLIARDI, 2017): This community-based study took place within a larger HIV prevention and awareness project in Winnipeg connected to the Sexuality Education Research Centre. The participatory research used an ethnographic approach within established relationships between staff and a group of HIV-positive immigrant refugee women from African countries who struggle with poverty, gainful employment, education (including access to English classes), childcare, and stable housing. The study purpose was to generate biographical narratives of care and support in order to piece together a fuller story of how care services mesh in the women's lives. Seven women, ranging in age from early 20s to mid-50s, were interviewed with the LSB. Two of the interviews were done with an interpreter.

- *Experience Talks, Resilience Shapes—Revisiting Historic Trauma: Impact on Treatment in Aboriginal Males Living With HIV/AIDS in British Columbia* (Aboriginal Males) (CHONGO, 2017): The study's author explored the impact of historic trauma on treatment outcomes among Aboriginal males living with HIV/AIDS in Vancouver, British Columbia, with a focus on adaptive/life maintaining practices (i.e., how the experience of historic trauma affects male survivors' ability to adhere to treatment) across age groups and residential school survivor status. The researcher used interpretive description incorporating a cultural safety lens as the methodological framework based on interviews (without the LSB) with thirty-six male survivors of historical trauma. As a complementary method, the researcher used the LSB to re-interview five of the study participants (aged 43 to 63).

- *Exploring the Impact of the Abecedarian Early Childhood Intervention on Parents and Caregivers in a Subsidized Housing Complex* (Abecedarian) (KOSHYK & WILSON, 2018): The Abecedarian approach is an early child education intervention program aimed at increasing the language and literacy development of vulnerable children from birth to age 5 within a nurturing, play-based environment (SPARLING, 2011). The program was implemented in 2012 in a subsidized housing community in Winnipeg with a history of social challenges. The goal of the larger research study by early childhood educators at Red River College, Winnipeg, Manitoba, was to capture the broader influence of the intervention on the adults around the young children. LSB interviews with seventeen parents and caregivers of children enrolled in the program explored their experiences.

- *Embodied Transnational Lives Among Filipina/o/x Youth in Urban Educational Spaces* (Filipina/o/x Youth) (TICAR, 2018): This study investigated the impact of transnational family separation and reunification through Canada's Live-in/Caregiver Program on the identity and sense of belonging of Filipina/o/x newcomer youth, and their experiences of schooling in Toronto urban high

schools. Twenty two Filipino youths (14-19 years of age) who recently immigrated to Canada were interviewed using the LSB. Utilizing a critical performance ethnographic approach, the youth engaged in oral history and artwork projects. The information was triangulated with focus groups and individual interviews with mothers and community leaders to understand the youths' sense of place-belonging and agency. [15]

Case	# of LSB interviews	Participants, Setting	Solo	Team	Set up
Street involved youth	4	Homeless youth 19-22 years of age	x		1 interviewer
Harm Reduction	24	14 men, 9 women - median age 50		x	1 interviewer 1 story boarder overhead camera
Children's Wellbeing	21	8 boys, 13 girls 8-12 years of age		x	1 interviewer
Newcomer Workers	7	Middle age (~range 40-55) 6 with translation		x	1 interviewer 1 story boarder 1 translator overhead camera
African Immigrant Women	7	20s-50s - 2 with translation	x		1 interviewer +/- translator
Aboriginal Males	5	HIV positive aboriginal males with residential school experience 43-63 years of age	x		1 interviewer
Abecedarian	17 parents/caregivers	Females - 25-50 age range		x	1 interviewer
Filipina/o/x Youth	22	Male/female Age 15-19	x		1 interviewer
total	107		4	4	

Table 1: Research projects summaries [16]

4. Methodology of the Review

The principal investigators from each of the eight research projects were contacted and asked if they were willing to share documentation and information about their use of the LSB in their studies. All agreed and after ethics approval was obtained from the University of Manitoba's Research Ethics Board, the documentation was collected and interviews were done with researchers from each study. [17]

Data sources used in the study were: 1. study documents from each case including study proposals, interim reports and final reports, if completed; 2. subsequent articles published in peer reviewed journals (in four cases) and; 3. face-to-face key informant interviews with the researchers who conducted interviews with the LSB for each project. The documentation as noted was provided by the principal investigators of each of the eight projects. The interviews for the review were conducted by two of the authors of this paper. The interviews were done face-to-face lasting on average 60 minutes each. They were audio recorded and transcribed verbatim. A total of eleven interviews were conducted. [18]

A content analysis of the data was conducted. From an etic perspective, the co-authors of this paper developed and used an analytical framework (Table 2) to analyze the data within each case and comparatively across the eight cases. An emic approach to analyze the data by way of thematic analysis was used to refine the subthemes in each category of the final framework (BRAUN & CLARKE, 2013).

Feasibility	Characteristics of interviewees
	Length of time of interviews
	Set up and convenience of the LSB interview
	Training of interviewers in using the LSB
Effectiveness	Verbal vis-à-vis visual aspects
	Value of task-based process
	Degree of recollection
	Quality and depth of the data obtained
Aspects of the LSB that facilitate or hinder	Use of the LSB set elements
	Inquiry sequence in LSB interviews
	Engagement of interviewees and rapport established
	Locus of control: who had the most control of the interview

Comparison with conventional interview approaches	

Table 2: Analytical framework [19]

5. Findings

With the research questions as our analytical guide, the findings are reported as follows: 1. feasibility; 2. effectiveness; 3. aspects of the LSB that facilitate or hinder, and 4. comparison with conventional face-to-face interviews. [20]

5.1 Feasibility

To assess the feasibility of using the LSB for data elicitation purposes, we examined: characteristics of interviewees; length of time of interviews; skill levels of the interviewers and convenience of interviewing with the LSB. [21]

5.1.1 Characteristics of interviewees

Across the eight research projects the LSB was used to interview a total of 107 individuals of different ages (from 9 to 63), gender, ethnicity, and life circumstances. It is noteworthy that in seven of the eight cases, study participants were considered marginalized or disadvantaged (Table 1). This was in fact one of the reasons why researchers sought to use the LSB, thinking that it could be more conducive than conventional interview approaches (i.e., face to face verbal interviews without the involvement of any non-verbal medium). Overall, the LSB was well suited to use as data elicitation tool with study participants of different characteristics. [22]

5.1.2 Length of time of interviews

The time length of the interviews averaged 60 minutes, ranging from 20 minutes to 100 minutes. The variability in length of time was mostly within studies, not across studies. The length appeared to be for the most part related to particular interviewees rather than other factors. For instance, age of interviewees, research topic, and settings of interviews did not seem to play a role. Nonetheless, most interviewers mentioned that the use of the LSB made the interviews slightly longer than they may have been without the LSB, in part because of time spent showing and explaining the board to the interviewee. [23]

5.1.3 Set up and convenience of the LSB interview

The logistics and set-up of using the board varied. In most cases, the space of a standard table was sufficient, approximately four square feet of surface, with space beside the board for the element bins, and palettes for markers and guide sheets. In most cases the interviewee and interviewer sat side by side, both

facing the board. In the Newcomer Workers and the Harm Reduction studies a camera was set up above the table to record visual information on the LSB board alone (video or sequential photographs) during the interviews. [24]

In the case of the Children's Well-being study, the interviews were conducted in child centers and smaller children's desks were used. In this instance, the reduced space was seen as somewhat inadequate. Two unique settings were during two interviews in the Aboriginal Males study. One interview took place at the home of an interviewee and another in a hospital room. Overall, the logistics of using the LSB were not experienced as being particularly cumbersome by interviewers. They did not report that interviewing with the LSB was inconvenient or burdensome; all felt that the extra effort required in set up and handling was worthwhile. [25]

5.1.4 Training of interviewers in using the LSB

In the case of the four solo researchers (as per Table 1), training in the use of the LSB was provided in person for the Aboriginal Males and the Filipina/o/x Youth researchers in two four-hour sessions. The African Immigrant Women researcher participated in a one-day small group workshop. The Street Involved Youth study interviewer received orientation via web video with an above-table webcam to view storyboarding in a roleplay scenario related to the research context. [26]

The feedback from researchers emphasized practice as key to feeling comfortable interviewing with the LSB. For instance, a researcher from the Harm Reduction study stated "I found it a very hands-on thing ... it is not something that you can just tell somebody ... until you actually see it work through ... I couldn't see how this was going to work until it was actually practiced." The Street Involved Youth researcher who used the board for only a few interviews confirmed this when stating "I wish I would have used it a little bit more ... I wish I had more practice." All interviewers reported, as may be expected, that their skill level with the board increased after several interviews. [27]

5.2 Effectiveness as a data elicitation tool

When assessing the effectiveness of the LSB as a data elicitation tool, we examined: 1. verbal vis-à-vis visual aspects; 2. value of a task-based process; 3. degree of recollection, and; 4. quality and depth of the data obtained. [28]

5.2.1 Verbal vis-à-vis visual aspects

Most of the researchers who were interviewed confirmed that the visual aspect of the LSB was helpful. For instance, in the Harm Reduction study it helped interviewees tell the story of their involvement since the beginning of injection drug use. The pictorial aspect of the tool seemed to assist with tracking the temporal narration of life events despite digressions in the conversation. As one researcher explained, the interview could go as follows

"In 1997 you were incarcerated, okay. Then they could ... talk about 'While I was incarcerated, I got Hepatitis C' ... Now they know exactly. There's a little symbol for incarceration, 1997. Everybody in the interview knows exactly where they're at." [29]

Furthermore, the researcher argued that the visual aspect of the LSB seemed to also help the interviewer, i.e., "it gave me a little bit more insight as to being able to visualize other people's experiences." The researchers explained that the storyboard was underpinning the conversations that arose, that it functioned as a "visual grounding tool." [30]

Researchers from the Newcomer Workers study indicated that the use of the LSB helped the interviewer to later return to a particular theme that had been previously mentioned "without a jarring change in direction or tone." They observed that the pictorial aspect of the LSB seemed to be particularly helpful when talking about bodily injury and/or soreness. The interviewers used a body map figure that is part of the LSB toolkit, whereby the localization of physical pain corresponded to the cycle of job rotations or injury events. [31]

The researcher in the Aboriginal Males study explained that the visual aspect of the LSB allowed interviewees to "look at the board and see their life being unfolded on a board ... that it helped them to reflect, to actually look at where they were (before) (and) where they are now." The interviewer from the Abecedarian study stated that the LSB's strength was precisely the fact that it is visual. She argued that "it was really good in terms of being able to map everything out to see what's connected with what and what they feel is most important or relevant to a certain part of their lives." This was supported by the Filipina/o/x Youth study researcher who stated that the visual component helped her see it as

"performing their life in front of me ... even though they weren't talking, they were drawing ... to me it was like it embodied what their life is ... to me that was part of the performance ... there was one student who wrote poetry on there." [32]

These examples demonstrate that the visual aspect of the LSB provides an additional medium for the participant to reflect on the interview questions. [33]

5.2.2 Value of a task-based process

The LSB offers a structured process that is task-based at the same time as it evokes conversation. The task-based aspect of the LSB was highlighted by researchers from several of the studies. The Street Involved Youth study interviewer thought that the game aspect of the LSB was particularly helpful when interviewing young people. Similarly, the fact that the LSB involved tasks was instrumental as a "prompt to get topics going ... I think the board would kind of prompt something and then they would talk for a while." This was also mentioned by Filipina/o/x Youth researcher who explained that the LSB was helpful, "simply because the youth (if) they didn't have a word to say ... they had a meaning for their drawings." [34]

The value of the LSB being task-based was also noted by the Harm Reduction study researchers. They mentioned a particular instance where the interviewee said that

> "he had talked to counselors or social workers in the past, and usually, the social worker has a note pad and is taking notes ... that made this participant ... sometimes paranoid or uneasy, because they don't know what's being written about them" [35]

whereas working with the board changed this dynamic. According to researchers from the Children's Well-being study the board offered children an active and tactile experience during the interview that helped to express themselves. They thought that it had allowed them to obtain a level of information from the children that would have been difficult to obtain with conventional face-to-face interviews. Interviewer feedback from the different studies emphasized that the board has intuitive, visual or non-verbal aspects, i.e., a task-based nature that lends itself well to a deeper exploration of interview questions. This balance between visual and task-based appears to be an important strength. [36]

5.2.3 Degree of recollection

Researchers from most of the studies mentioned that the use of the LSB seemed to help interviewees recall experiences. For instance, the researcher from the Harm Reduction study explained that

> "once they (interviewees) can visually see what they spoke of and using the visual cues, the school, maybe jail, a concrete thing on the board that gave them their memory started to trigger ... you could see that, 'Oh yes, this happened there. This was how I was feeling at that time'." [37]

This property was particularly relevant for the Harm Reduction study because most interviewees had a long history of drug use that had negatively impacted their memory. [38]

The researcher from the Aboriginal Males study also noted that

> "just putting all the pieces there on the board helped them to look at that, because to me it gave me a sense that they may not necessarily say their story in chronological order if they were asked only one-on-one questions. The LSB allows them to, when they remember something, to go back to it. That is powerful." [39]

Furthermore, the interviewer from the Abecedarian study explained that

> "one of the best parts about being able to use the board ... I would describe it is kind of like jogging people's brains...they're able to be like see everything and be like, 'Oh, I forgot this' or 'Maybe I should add this' or 'I didn't even think about this. Can I put that down'?" [40]

The feedback from the interviewers strongly suggests that the use of the LSB enhanced the degree of recollection of study participants. [41]

5.2.4 Quality and depth of the data obtained as per each study's purposes

By quality and depth of data, we refer to data that provide researchers with thorough and consistent information as per the purposes of their studies. Ultimately, the criteria were based on the researchers' subjective viewpoint. Researchers from all studies mentioned that the LSB had assisted study participants to provide strong content during the interview process. For instance, according to the researchers from the Harm Reduction study, the use of the LSB was very helpful to depict peers' histories of harm reduction, and their histories of drug use. They stated that "participants felt really attached to the board." The researchers argued that the information from the interviewees seemed more in-depth and the participants were much more engaged. "I felt like ... you were getting their real thoughts, their real feelings. Because they could see unfold a lifetime of their use and how it related to harm reduction and harm." The Street Involved Youth study researcher considered that "the stories they told me were very rich and I feel like I got to know them in a certain sense." [42]

The purpose of the Children's Wellbeing study was to understand how children experienced well-being in their lives and to allow them to share their perceptions of the world. In that sense, the researchers assessed that information gathered by the interviews with the use of the LSB "was rich ... it allowed the team to discover several common themes." The researcher from the African Women's study stated that the interviews were "quite packed for the most part ... they were emotional at some point...because of the issues around HIV and life in general." The interviewer explained that the conversations were around "stigma, non-disclosure, and linked to support and lack of support" and indicated that they "ended up with plenty of data." [43]

The Filipino/a/x Youth study researcher explained how the literature mentions difficulties that Filipino youth have in talking about their experiences, that they were not in-depth. The interviewer explained "I found the same thing too, when I was talking to them verbally. But when they were able to use the storyboard, that's when they really immersed themselves in their experiences." She added

> "(the LSB) definitely was a good tool for ... an excellent tool, actually, for first of all, getting them to speak about issues, and then for recommendation purposes, for my purpose for trying to identify the gaps in the system, school system for migrant workers as well." [44]

The researcher from the Street Involved Youth study thought that interviewing with the LSB supported youth's broad narrations of their life stories. She attributed it to the LSB taking some of the pressure off the youth, as if they were thinking "Oh, maybe this won't be all fun. But this is kind of, like, creative." In a different way, interviewers from the Newcomer Workers study mentioned that among the benefits of interviewing with the LSB was the quality of the

conversation that "in some ways would be deeper or more focused, or you could switch focus by having the board to make reference to." The consensus among all researchers was that the depth and quality of a participants' response, especially when guided by a skilled interviewer, was sustained and deepened by the use of the LSB. [45]

5.3 Aspects of the LSB that facilitate or hinder

The research team also reviewed what aspects of the LSB may specifically facilitate or hinder data elicitation. The following sub-themes emerged and will be discussed: use of LSB element sets; enquiry sequence; engagement of interviewees and; locus of control. [46]

5.3.1 Use of the LSB set elements

The LSB includes the magnetic board and sets of elements, markers, guide sheets, and other accessories. Consequently, it was important to understand how practical it was to use which elements during the interviews, and in particular, if their use had hindered the interview process. [47]

A researcher from the Harm Reduction study mentioned that the board was somewhat small for the participants of this study, because of their age and time injecting: "Small to be able to depict their entire life story and their experience of drug use." On the other hand, another interviewer from the same study felt that there were different aspects of the board that some people may not need to use. When interviewing children using the LSB, the researcher from the Children's Wellbeing study found that even towards the end, and despite the initial explanations, "some children are not totally comfortable with putting pieces on the board on their own." She observed "that boys have been more open to grabbing pieces and putting it [sic!] on the board; whereas girls, they're more chatty." She did not observe differences in relation to the age of the child and how they interacted with the LSB. According to the interviewer, any difference was mostly related to the personality of the child. For some children "it kind of interrupted the kids that talked a lot and then just wanted to keep chatting and chatting ... and then I didn't put pieces on." [48]

5.3.2 Enquiry sequence in LSB interviews

The LSB can be used in different variations of enquiry, for instance chronologically in a horizontal way, or with an initial attention to specific issues in what could be described as a vertical approach. In most of the cases, the enquiry sequence of use started with the Person Card representing the interviewee him/herself. The Aboriginal Males study researcher explained that he would start with that card and follow the path of the conversation "building up the story like that. Just putting pieces on and then saying, 'Okay for this one, we can talk about it ... You don't just start putting things on the board haphazardly ... you actually do it step-by-step." He also provided an interesting reflection, "it also helped that they felt 'we're building meaning together'. So they felt really comfortable doing it

and they felt they were in control of it." One of the researchers from the Newcomer Workers study indicated that a potential liability of using the LSB is that "if you start storyboarding details about what they're talking about, it can slow the process of sharing more information. It breaks the narrative flow, and it becomes a stop-start process around details." The research team concluded that the most effective way of using the storyboard is to listen to an extended period of narrative, and then to pause at an appropriate time to replay or revisit the narrative in a storyboarding process with the interviewee. [49]

A different approach was that of the Abecederian study interviewer who described

"The questions are happening without the board open. Then once we got through the big questions that's when I introduce them to the board. It was already sitting out on the table. It was closed ... Then ... I told them a little bit about the board 'We're going to be using it to review everything that you said. We'll be placing pieces down'." [50]

The interviewer also stated

"It was very repetitive in the sense that we were putting things down on the board that had already been said a lot of the time, but it kind of helped me think back about what they were saying and click things into place." [51]

The interviewer from the Filipina/o/x Youth study intentionally used the zones of the board as a guide to sequence the interview questions. She stated: "The four zones on the board, the timeline, and the three colored zones, were used all four very much in ... sequence (in the) questioning approach." She then explained in more detail the sequence "When I would ask the questions I would give them some time to draw...the questions would be asked first." These examples show that the LSB has different ways in which its use can be sequenced. Interviewers saw this as a particular strength of the tool, albeit a few mentioned the importance of gaining experience to feel confident about using the most appropriate sequencing for each particular research focus and context. [52]

5.3.3 Engagement of interviewees and rapport established

With few exceptions, across all age groups and life circumstances of interviewees, the use of LSB did not seem to hinder their engagement in the interview and the rapport established during the interview. In fact, most of the evidence indicated increased engagement. [53]

In relation to children, the interviewer of the Children's Wellbeing study indicated that all children had enjoyed using the board, in part because they "could see" what they were talking about. In terms of specific pieces the interviewer stated that "more girls said that they enjoyed having the like emotional pieces or like those faces and stuff. On the other hand, the boys … they liked it but did not explain why." [54]

Those researchers who interviewed youth argued that the LSB seemed to facilitate the engagement of study participants. For instance, the Street Involved Youth study interviewer stated "Three of the four (interviewees) really liked it ... my sense was that youth are open to different methodology and ... to games and visuals." The researcher also considered that it operated almost as an ice-breaker, making the interview process less formal. This was corroborated by the researcher from the Filipina/o/x Youth study who stated:

> "They came up and told me that they found it fun. They found that the hour went by really quickly ...They would tell their settlement worker that they enjoyed it a lot and they learned a lot about themselves through the storyboard actually." [55]

When interviewing adults with the LSB, there was general agreement that it was helpful. Among advantages, the researchers from the Newcomer Workers study thought that using the storyboard was a way to deal better with the cultural and the language challenges, resulting in improved interactions. Also, they stated that storyboarding seemed to give more tangibility to the fact of being listened to. As one interviewer from this study explained "If I'm telling you things and you're just sitting there listening, yes, I'm assuming you're listening, but maybe the confirmation of the listening may be through the board." According to the Aboriginal Males study interviewer, study participants enjoyed the LSB in part because it seemed a very open conversation. [56]

5.3.4 Locus of control: Who had the most control over the interview?

The interviewers of the different studies reported a number of instances where the LSB seemed to shift the locus of control of the interview to the interviewee. According to the interviewer of the Street Involved Youth study, two young males

> "didn't want to talk about their fathers and it (the LSB) just allowed them to sort of shut it down ... it was just implicit that they were gonna put it in the safety zone or use the secret cards that they didn't have to talk about it any more and they didn't even have to explain why ... they were quite comfortable with that." [57]

Another instance was mentioned by researchers from the Harm Reduction study

> "what was nice about this was that it was all in the open, and accessible to the participants .. .and if they noted that if the story boarder had made a mistake in interpretation, have misconstrued what they are saying, well, they could correct them." [58]

This matched well the intention of the study; interviewers had been trained with the idea that the interviewee would be the main controller of the interview. "Even though I had to prompt questions...once it started it became other than asking a few key questions here and there, the control was almost equal between the three parties" (i.e., interviewee and the two interviewers). [59]

The Filipina/o/x Youth study researcher explains that she started the interviews somewhat structured,

> "but then the rest was up to them, what they wanted to include or not …. just letting them be, was really the way that I found very helpful to approach it ... so I let them lead it a lot. And that's where I found a lot of the rich information came from ... I gave them guidance, but then I let them do what they needed to do on the board. They really took to that, yeah." [60]

5.4 Comparison with conventional interview approaches

Although we did not design the review to directly compare the LSB with conventional face-to-face interview approaches, we did capture information that offers tentative inferences. With the exception of the Aboriginal Males study researcher who interviewed study participants with and without the LSB, none of the others did so. Nonetheless, the researchers from the other studies had prior experience conducting face-to-face interviews, and they commented about how interviewing with the LSB compared to doing so without it. We summarize some of the main thoughts researchers had about this comparison. [61]

The Street Involved Youth study researcher had the impression that using the LSB compared favorably to interviewing youth without it, because "I think youth like novel things ... they like something that other people aren't doing ... they like it when it's not just talk, talk, talk." Researchers with the Children's Well-being study mentioned that "the LSB offers the children something more active, visual and tactile, more task oriented." They compared it to the experience of other researchers (this study was part of a multi-country study) who had interviewed children without the LSB and indicated that some of these other researchers seemed to have struggled "with getting children to talk and to talk deeply ... I don't think we had that problem." [62]

Researchers from the Newcomer Workers study stated that

> "there was a way that you could summarize your hopes and dreams and the learning experience through a lifetime with the storyboard ...They could see their lives and see so much of what they had talked about coming back to them ... I can't think of any tool that probably offers a middle ground to capture and then revisit the story collectively, than the storyboarding." [63]

The Aboriginal Males study was the only one of the eight research projects where the interviewer interviewed the same study participants with and without the LSB. According to the researcher, one interviewee mentioned that in conventional interviews he is asked something and he replies to what they want, whereas with the LSB he felt that he could talk from his own perspective. The researcher was adamant that in several interviews, the participants would not have said what they said without the LSB, even though he was asking almost the same questions on both occasions. The Aboriginal Males study researcher stated

"Because you're asking the next question to supplement the one before, to build up on something ... you will remember that you want to talk about services, so if you mention something about a service, you go into that. And while we're talking about services if you mention something about how he takes his medication, you go into that. So you're not following a particular order, but you're picking [sic!] on what he's saying as well, so it feels like it's more a conversation ... that's how it was different." [64]

6. Discussion

The Life Story Board meant engaging in a task-based activity of lifescape construction that accompanies the interview conversation; this aspect was valuable in its own right, apart from the visual end product. The findings suggest that LSB-based interviews generated worthwhile verbal transcripts which, given the challenges some researchers faced researching marginalized or reticent interviewees, was no small accomplishment. In at least two cases (Harm Reduction, Newcomer Workers) the research would not have been contemplated, had there not been a viable alternative to conventional face-to-face interviews. Table 3 summarizes the findings of how the LSB works as a visual tool.

For whom?	Qualitative researcher/interviewer
	Study participant/interviewee
For what purpose?	Overcome barriers to verbal conversation (e.g., literacy, language, trauma, attention span)
	Increase engagement in interview process (e.g., among children)
	Help focus on sub-themes of interest in the narrative, given that visualizing a particular theme on the storyboard can assist in returning to it to delve more deeply into it and identify sub-themes
	Facilitate reflection on narrative material, deeper, reflexive analysis and values. The visual references to spoken material contextualized in the lifescape provide opportunity to corroborate and explore further
	Shift locus of control of the narrative process toward the interviewee
In which theoretical context?	Narrative analysis/content analysis
	Interpretive description
	Ethnographic approach

Table 3: Summary of findings [65]

We were not able to assess what has been suggested by other authors (JENKINGS, WOODWARD & WINTER, 2008), that "the use of diagrams in data collection can be viewed as primary data themselves" (UMOQUIT et al., 2013, p.7). Although potentially possible, none of the cases in our review analyzed the

lifescapes themselves as visual data. Furthermore, the LSB is capable of depicting quantitative data, for example using scale cards and markers to denote relative significance or intensity across elements in the lifescape. However, none of the projects that we reviewed did so. [66]

Our study was the first to assess the LSB as a data elicitation tool for social science and health research. LSB augments an increasing literature on what can be categorized as visual, diagrammatic, graphic, tactile, data elicitation techniques (BAGNOLI, 2009; GASTALDO et al., 2012; GASTALDO et al., 2018; UMOQUIT, TSO, BURCHETT & DOBROW, 2011; WANG & BURRIS, 1997). Having varied data elicitation approaches for qualitative researchers to choose from, enhances the potential to obtain rich data for diverse research purposes, settings and populations. [67]

A major limitation is that the review exclusively analyzed the notions and experiences of the experts (i.e., researchers working with LSB) reflecting their beliefs and assumptions. Also, the review lacks information from those interviewed using the LSB. As well, the majority of the studies reviewed were with disadvantaged or marginalized participants, which raises the question if the findings would be similar among other population groups. Although we did not find any specific reason why this would not be the case, the range of review was not wide enough to reach a conclusion in this regard. Among other limitations, none of the cases reviewed were designed to directly compare the LSB to conventional face-to-face interviews, limiting comparative findings. For this purpose, a case-control or crossover study design would be most suitable, whereby the quality of data elicited, and the experience of the interviewee and researcher as interviewer, with or without use of LSB, can be compared and contrasted. This will be a priority for future research for which we welcome collaboration from other researchers. In future research on the LSB we will also focus on concepts such as graphic ideation (CRILLY, BLACKWELL & CLARKSON, 2006) that may contribute to the advancement of theories underlying the use of graphic, visual, and tactile data elicitation techniques. [68]

In relation to potential barriers of using the LSB, the review of the eight studies suggests that the LSB can be used with study participants of different gender, age, ethnicity, and life circumstances. UMOQUIT and colleagues (2011) detail a number of reasons for choosing diagrams for data collection from research participants, among them to overcome linguistic, cultural, social or intuitional barriers. In fact, a number of the research projects we reviewed had chosen the LSB precisely for its potential to reduce barriers, and all interviewees reported that it had been valuable in this regard. [69]

In terms of the logistics and time needed for using the LSB, the review suggests that they were not substantially greater than for conventional face-to-face interviews. It was found that basic training and some prior practice were needed. The findings suggest that its visual and task-based approach was valuable, that it facilitated recollection, and that quality and in-depth data was obtained. What was most significant was that the use of the LSB facilitated rapport building with most

study participants, and that they had more of a sense of control over the interview. BAGNOLI (2009) argues that "the inclusion of non-linguistic dimensions in research, which rely on other expressive possibilities, may allow us to access and represent different levels of experience" (p.547). This was clearly the case with the LSB. HUOT and LALIBERTE (2015) mention that "visual methods have been described as interactive exercises because participants interact with the image ... and with the researchers, by telling stories as they draw" (p.144). These effects were corroborated in the reports of the researchers who used the LSB. [70]

Based on existing classifications of data elicitation tools, the LSB fits within the broader category of graphic representation as defined by RICHARDS (2002), in that it includes diagrams, drawings, timelines, and tactile aspects, in conjunction with the verbal component. It also has elements of being a task-based tool. The findings suggest that the LSB combines in one tool the elements found in a variety of other data elicitation techniques. Most importantly, the LSB it is a tool that works well with a variety of study populations, it is practical to use, and can draw rich qualitative data. The LSB seems to share a number of strengths of other graphic data elicitation techniques. MAGEARY et al. (2015) discuss how "visual reflection itself is an act of externalizing" (p.56), an experience that a number of the researchers who used the LSB observed among study participants. FÄNGSTRÖM, SALARI, ERIKSSON & SARKADI (2017) argue that in order to create a "positive interaction and an atmosphere where the child feels safe and relaxed" researchers and clinicians recommend using different techniques "such as age appropriate play, drawing or playing a game" (p.2). Our review corroborated that interviewing with the LSB operates in a similar way, albeit not only with children but also with youth and adults. [71]

The LSB includes as a central component a timeline. Several authors have mentioned the benefits of using timelines (KOLAR et al., 2015; PATTERSON et al., 2012). Many of the benefits identified by these authors emerged in our study. Among them, study participants stated that they were able to refer back to events discussed in the timeline and to navigate the interview space through reflection and boundary setting around their experiences. Our study also suggests a shift of locus of control towards the participants during the interviews when using the LSB. KOLAR et al. (2015) also discuss a shift in "the power dynamic away from the conventional ask-and-answer of the verbal interview ... to facilitate more participant control over the structure and direction of the conversation" (p.16).They identify the combination of graphic elicitation methods and the use of timelines as valuable when interviewing "marginalized participants as well as to allow for diversified exploration of participant life experiences" (ibid.). Overall, the review found a positive experience among the qualitative researchers who used the LSB as a data elicitation tool. [72]

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