Proposal for a qualitative study of LIS students' self-assessment of growth and direction using Dervin's Sense-Making Methodology applied to intrapersonal examination of their ongoing eportfolio development

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Abstract
This paper presents ongoing work on the development of a study which will examine the use of Sense-Making Methodology applied to the intrapersonal consideration of personal electronic portfolios to assess growth and direction in a graduate level academic program. Brenda Dervin's Sense-Making Methodology has been applied to a myriad of situations in multiple contexts with a wide spectrum of people. It is applicable in contexts including intrapersonal, interpersonal, small group, mediated, organizational, and societal (Dervin et al, 2011). In this study it will be applied via intrapersonal self-interview to clarify direction in a graduate program through student examination of his or her eportfolio.

Keywords: sense-making methodology, eportfolios, reflection, self-assessment

Introduction
This paper presents ongoing work on the development of a study which will examine the use of Sense-Making Methodology applied to the intrapersonal consideration of personal electronic portfolios to assess growth and direction in a graduate level academic program. Many graduate level programs require students to complete a culminating course in which they create a project or thesis to demonstrate the knowledge they have acquired and their ability to apply what they know to a scholarly investigation or real life problem. A project of this nature - one that encompasses an entire term (sometimes longer) is a major undertaking. Ideally, a commitment of this nature is undertaken not simply to complete a program requirement but to further the personal and professional growth of the student. All students at the Queens College Graduate School of Library and Information Studies are required to complete such a culminating research course in which they design, either alone or working with a partner, a project that has been carefully researched and constructed under the supervision of the course instructor. The projects are substantial and a great many hours and much effort go into their creation. It is desirable for students to have some idea of what they would like to investigate fairly early in the term so that they might proceed with their project. This should be something that will be meaningful to the student researcher and, hopefully, support interests that have developed and/or matured during their course of study. Student understanding of the discipline and of their own interests and direction may change substantially during their course of study. Thus, an exercise in which the student reflects on what they have done, what they have liked and not liked, how things may or may not have changed for them, may be of great help in selecting the research topic for their culminating project. In the proposed study, graduate level students will administer a self-interview in conjunction with a review of their eportfolio. It is hoped that thoughtful review of the contents of their eportfolio and reflection via responses to the interview questions posed in the spirit of Sense-Making Methodology will highlight participants' interests and strengths, both enduring and developing, and give participants a better sense of direction and purpose as they move forward to their culminating project.

Eportfolios
Concrete portfolios have long been implemented in academic programs (Rhodes, 2011), especially, for example, in the fields of education and art, in order to collect/compile the works of an individual to demonstrate competence, talent, growth, direction. Concrete portfolios have largely been used by instructors and/or potential employers to assess the work of the creator of the portfolio. More recently, electronic portfolios, or eportfolios, have gained popularity for their ease of use and versatility. Lorenzo & Ittelson (2005) define an eportfolio as "a digitized collection of artifacts, including demonstrations, resources, and accomplishments that can represent an individual, group, community, organization. The collection can be comprised of text-based, graphic, or multimedia elements... (p. 2)."
Various aspects of eportfolios make them more convenient, flexible, and multi-faceted, and thus are considered by some to be a superior mode/format of portfolio. Therefore, many schools have begun to implement the use of electronic portfolios and numerous case studies are available (Jafari & Kaufman, 2006). Rhodes (2011) and Lorenzo & Ittelson (2005) link to examples of eportfolios and examples of student eportfolios can also be found at LaGuardia Community College (http://www.eportfolio.lagcc.cuny.edu/). Schools also may maintain support pages with tutorials and links to assist students in building their eportfolios such as the one found at the Queens College Center for Teaching and Learning (http://ctl.qc.cuny.edu/learn/eportfolio/).

According to Buzzetto-More (2010), eportfolios are a valid way to show student progress and encourage student participation in learning. Eportfolios help students understand goals, think about what they have learned, and reflect on the skills and knowledge they have acquired (ibid). Chang, Liang, & Chen (2013) examined self-assessment of their eportfolios by high school seniors and found that student self-assessments were consistent with those of their teachers and also in keeping with end of term exam results, therefore, indicating that self-assessment can be both valid and reliable as a method of assessment. In addition to using eportfolios for student assessment, evaluation of student eportfolios across a program can be used by administration for curriculum and program assessment (Buzzetto-More, 2010; Reardon & Hartley, 2007). Assignments or artifacts deposited by all students in a program in their eportfolios can be reviewed to determine if there is evidence that department objectives and student learning objectives are supported by course objectives.

Learning is a constructive process (Vygotsky, 1978) in which new information is assimilated into each individual learner's prior knowledge. Learners experience new information, reflect on it, and in doing so construct their own understandings and meanings - ways to make sense. Eportfolios provide a excellent venue for learners to piece together new and old information to construct personal understandings. Eportfolio achievement has been found to be positively correlated with higher order thinking skills i.e. critical thinking, metacognitive control strategies, self-regulation, and collaborative learning (Cheng & Chau, 2013; Alexiou & Paraskeva, 2010). Electronic versions of portfolios are better at prompting reflection on the part of students and students voluntarily spend more time on them (Tochel et al, 2009). Additionally, eportfolios have been shown to be a substantial tool in supporting student reflection by emphasizing both process and product in learning (Cheng & Chau, 2013). Thus, the eportfolio supports both formative and summative assessment.

Pragmatic issues related to the implementation of eportfolios include user buy in (both faculty and student), platform selection, financial support, tech support, training and user support. The proposal presented in this paper, however, addresses student reflection and self-assessment of direction and growth using their eportfolios together with Sense-Making Methodology. Thus coverage of pragmatic issues related to implementation are left to another examination. Interested readers may wish to look at Launching e-portfolios: An organic process (Andrade, 2013) as well as the information available at Educause (http://www.educause.edu/).

Sense-Making Methodology

Brenda Dervin's Sense-Making Methodology (SMM) was “developed to study the making of sense that people do in their everyday experiences” (1992, p. 61). SMM is, thus, a constructive process on the part of the information seeker. Sense-Making describes our movement from point to point in everyday life and our attempt to make sense of our situation which changes from moment to moment. Dervin sees this movement as a series of “step-takings that human beings undertake to construct sense of their worlds” (ibid. p. 65). The information or sense that the person is seeking may not be a set answer to a question or problem - the "situation foci may not be goal-oriented in the usual sense" (ibid. p. 70). So, for example, in the proposed project, participants will not be seeking a specific answer to a question but rather insight into their next steps in their course of study. Information is not something that exists apart from people but rather it is constructed by what each person understands during each moment of their behavior.

At the core of SMM is discontinuity. With each step we take in our everyday experience, our reality/our situation changes a bit. The person who is moving through his or her experience thus must conceptualize information moment by moment because of this discontinuity. When an individual comes to a spot and does not know which step to take next, he or she has come to a “gap.” When a person comes to a gap - a situation that they cannot negotiate - their “internal sense has ‘run out’...the person must create a new sense” (Dervin & Nilan, 1986, p. 21). "A person in a moment defines that moment as a particular kind of gap, constructs a particular strategy for facing the moment, and implements that strategy with a particular tactic" (Dervin, 1992, p.82). The person/sense-maker needs a bridge to traverse the gap so that his or her journey may continue. "The sense-maker is seen as potentially making some kind of use of whatever bridge is built across the "gap" the user faces” (Dervin & Nilan, 1986, p.21). In the proposed project, it is hoped that students’ eportfolios will help to bridge a particular gap.

In order to support the sense-maker in their gap bridging, Dervin has proposed interview queries posed so that the sense-maker is the focus of the query rather than any particular system. For example, rather than ask "What information can I get for you from our library?” a question might be “What has brought you here?” The first question
predicates a solution that is supplied by the library system. The second question focuses on the information seeker. SMM questions also attempt to understand the information seeker’s situation by asking about helps, hindrances, muddles, and feelings that the information seeker has experienced. Dervin makes use of what she terms “verbing” as opposed to “nounding” to emphasize the notion of discontinuity and constant change. “In simple terms, a nounding approach implies that we have come to a fixed understanding of a problem and its solution, whereas a verbing approach implies that we pay attention to how people are making and unmaking sense in the context of their lives” (Dervin & Frenette, 2003, p.236). The use of nouns solidifies ideas and sense. Focusing on verbs in Sense-Making reminds us that sense is constantly changing. Savolainen (2006) notes that “the designing of information (or fodder for Sense-Making) may be defined as a specific example of verbing” (p.1123). Student eportfolios are designed information uniquely constructed by each student over a period of time, constantly changing, and, thus, represent individual efforts at Sense-Making. And while the eportfolio of each participant in this project will contain a standardized rubric, Dervin (1992) notes that “[t]he standards humans use for personal as well as collective conduct are themselves constructed and created in interaction. From a Sense-Making perspective, the use of a standard is itself a constructing” (p.63). That is, each student has constructed the contents of the rubric according to their own understanding - that which makes sense to them.

SMM has been used in a wide spectrum of areas including but not limited to mass communication, political campaigns, journalism, religion and spirituality, popular culture, and library and information science. It is applicable in contexts including intrapersonal, interpersonal, small group, mediated, organizational, and societal (Dervin et al, 2011). In the proposed study it will be applied via student participant self-interview to clarify direction in a graduate program through student examination of his or her eportfolio. The application of Sense-Making Methodology to intrapersonal contexts has been described in several earlier efforts including Diggs & Clark (2002), Dervin (2008), and Dervin et al (2011).

**Rationale**

Sense-Making Methodology and learning via eportfolios both embrace constructivist ideals, value reflection and self-guided direction. The eportfolio is constantly changing and reshaping as is the student experience as interpreted by SMM. SMM is a means to study the constructing that people do to make sense of their experiences (Dervin, 1992). Eportfolio construction is a means to gather and arrange experiences/information to organize it and make sense of it, both for self and for others. Dervin (1992) describes the Sense-Making Triangle of situation - gap - help/use. In this instance, the situation may be construed as the movement of the student through their program of study. The gap is the point at which the student needs to decide on a culminating project and may need assistance crossing that gap. The bridge allowing the student to cross the gap will be the SMM questions applied to the student’s experience as reflected upon and represented in their eportfolio. The eportfolio constructed over time in the program will assist the student in recalling past activities, interests, successes, failures, likes and dislikes. Dervin notes that Sense-Making is not necessarily a linear process and, indeed, examination of their eportfolio may cause a student to reconsider a path previously assumed and change direction. Because SMM focuses on behavior changes over time, pairing SMM with the eportfolio reflection may be a means to help connect the discontinuity to a point where sense is made and a gap can be bridged. The pairing of these two tools for this project to support students’ Sense-Making, thus, seems reasonable.

**Methodology**

**Background**

During the years 2008 and 2009, faculty members from the Graduate School of Library and Information Studies (GSLIS), Queens College, CUNY and the Queens College Department of Education participated in Making Connections: An ePortfolio Mini-Grant & Seminar Program, Years I (Cooper et al., 2008) and II (Cooper et al., 2009) As part of this grant, we participated in collaborative sessions, held approximately once a month, with other educators from a wide geographic area. During these sessions we learned how electronic portfolios had been successfully implemented at LaGuardia Community College and other schools and worked together to plan similar initiatives in our own schools. We shared what we had learned with the Queens College Center for Teaching and Learning to support an eportfolio initiative at our own college. On the department level, we began giving workshops for students in how to construct and maintain their own eportfolios. In the early stages of our eportfolio development, students constructed their eportfolios using a template designed by one of our faculty members. It became apparent that a common platform would be more workable for the students. This would allow them to focus on the content and personal presentation that would support their growth rather than wrestle with technical issues. Additionally, it would allow for all student portfolios to be reviewed, and, in the future, assessed, more easily by faculty. Working together with the Queens College Center for Teaching and Learning and constituents across campus, a decision was made regarding the eportfolio platform that best suited the needs of all constituents.

**Participants**

The Library Media Specialist (LMS) program at GSLIS is a graduate level teacher education program leading to state teacher certification as a school/teacher librarian. Students in
this program are working adults, most with jobs and families. We are a commuter school and students travel to class once or twice a week, usually after work. Approximately half of the students in our LMS program are already certified teachers in some other area. The other half of our LMS students are working toward their first teacher certification.

Eportfolios were first implemented on a regular basis in GSLIS in the LMS focus area. The program coordinator for this area was one of the faculty participating in the original eportfolio grant described above. An eportfolio became a requirement in the first course in the sequence for this focus area. LMS students were required to construct an eportfolio using the platform selected earlier by GSLIS and the Center for Teaching and Learning. This eportfolio was to contain a Learning Matrix configured by the program coordinator to reflect which assignments, both in this course and other LMS focus classes, met the standards for the American Association of School Librarians (AASL). Students needed to reflect upon their work and the AASL standards and then place each assignment or artifact in the matrix cell corresponding with the standard or standards they thought it supported. Additionally, students could opt to place work they were most proud of in a special “Showcase” area of the portfolio. These LMS students were encouraged to maintain their eportfolios throughout their course of study in the department. Assignment articulations of other courses in the LMS focus sequence reminded students to place their work in their AASL Learning Matrix. Thus, at the end of the LMS sequence, these students should have an easily visible record of their work throughout the sequence. Because of these things, LMS students were chosen as potential participants for this proposed study.

Participants for the study will be self-selected and solicited via a posting to the general student list serve directed to the attention of LMS students who have both maintained their eportfolio AASL Learning Matrix throughout their course of study and plan to take the culminating research course during one of the following two terms. Results of this study will, of course, reflect only the thoughts of the participating students as interpreted by the researcher and cannot be construed to represent a wider population.

The interview questions

The self-interview questions designed for this study were constructed in the spirit of Dervin’s (2008) core questions to be used in Sense-Making Methodology interviews. Their articulation was influenced by the questions posed by Diggs & Clark (2002) in an SMM self-interview. Examples of several self-interviews are also referenced by Dervin (1983). Dervin’s core questions were originally referred to as neutral questions (Dervin & Dewdney, 1986), however, they have been renamed by Dervin as SMM questions or SMM-questioning (Dervin, 2008). These questions attempt to focus on a person’s movement through time and space by querying situations, gaps, bridges, outcomes, struggles, evaluations, and helps. In a more genuine SMM interview session, each event queried would be broken down into many more questions about that particular event so that the participant would need to more deeply examine thoughts, emotions, questions, confusions. Questions would be recursive in that they would focus, surround or triangulate around each issue to get at the core of each response. In this first attempt at designing SMM questions, a modified approach as per Diggs & Clark (2002) was taken. While each of the questions posed to participants can be directly linked with Dervin’s core questions, in this iteration of the study, triangulation to focus more deeply on each question will not be undertaken. This is done partly to simplify the process this first time and partly because of time constraints. A full SMM interview might take up to 4 hours (Dervin, 1983). In the following section, after each question to be posed, related core SMM question area are suggested in italics and in parenthesis. These parenthetical points are broadly stated so that the reader might see the relationship to Dervin’s SMM Questions and is done for purposes of demonstration in this paper. These parenthetical points will not be included in the questions presented to participants.

Self-interview session

When participants arrive to complete their self-interview, they will be conducted to a room with a computer on which they can view their eportfolio. Participants may use their own laptops if preferred. The prompt and questions will be as follows:

Dear Student,

*Thank you for your participation in this study!*  
Please DO NOT write your name on this questionnaire. Responses to this questionnaire may be used as data to support research in the area of Sense-Making as well as to improve overall program and curriculum development at GSLIS. All contributions are voluntary and anonymous. By contributing and submitting your anonymous reflections you are agreeing to its use to support this research.

This exercise is meant to help you toward a better sense of your direction and focus as you move to begin your course 709 Research in Library and Information Studies. This will also help me understand your needs better and reflect on my own purposes and approaches as we interact.  
Please do your best to respond to the following self-interview. There are no right answers and the purpose is to assist you in digging deeply into your recollections, thoughts, questions, and feelings. Please review all parts of your eportfolio, especially the Learning Matrix which notes the assignments you have entered, to assist in...
recalling aspects of your progress through this program, both helps and hindrances, before you respond to these questions.

- What led you to enter study in library and information science? Think here not only of events and experiences but also struggles, questions, and conclusions. (This question queries, for example, situation, struggles, gaps, bridges.)
- What did you hope to accomplish...what were your interests at the time you decided to enter LIS study? (This question queries, for example, outcomes sought.)
- As you moved through your studies, what were the big things that helped you and how did each help you? (This question queries, for example, bridges that helped to cross gaps.)
- What did you like doing the most in your LIS studies? What do you think explains your liking? (This question queries, for example, outcomes sought or obtained.)
- As you moved through your studies, what were the big things that hindered you and how did each hinder you? (This question queries, for example situation and gaps.)
- What did you like doing the least in your LIS studies? What do you think explains your disliking? (This question queries, for example, struggles and situation.)
- Thinking about your LIS studies, would you say there were experiences from your life before coming to LIS that impacted you during your studies? What were these and how did each impact you? If more than several, can you choose one or two that stand out the most in your mind? (This question queries, for example, situation and outcomes.)
- Thinking again about your LIS studies, would you say there were current life experiences that impacted you during your studies? What were these and how did each impact you? (This question queries, for example, situations and outcomes.)
- Now, towards the end of your studies for an MLS, how does your outlook or destination differ (if at all) from your sense of these at the beginning of your studies? If you see things as having changed, how did they change? What do you see as accounting for the change? (This question queries, for example, evaluation.)
- At this time, what is your sense of what you would like to do in your culminating project? How do you see this as potentially helping you -- serving your needs and interests? (This question queries, for example, outcomes sought.)

The researcher will not be in the room during the self-interview. Participants will self-interview by reading the questions and writing their response below each question. Question response sheets will be anonymous. Completed sheets will be deposited in a common envelope so that question response sheets will not be associated with any particular participant. In exchange for completing and submitting the Sense-Making Methodology reflection and accompanying questions, participating students will receive a gift card from a bookstore or cafe worth $15. Participation is expected to take approximately 30 minutes.

Planned Analysis and follow-up
This inquiry is intended to be a grounded attempt (Glaser & Strauss, 1967). The plan at this point is to examine responses for broad concepts emerging from the data, although this plan may change depending on the situation. Concepts emerging from the data will be placed into groups having a commonality as noted by the researcher. Groups will be examined for insights into participant experience, growth, and perceptions and any other attributes of interest.

One idea under consideration for follow-up is to invite participants to respond to a second group of questions regarding what they learned, if anything, from participating in the SMM study (Dervin, 1983). It would be of interest to know if participation in this study affected participants’ choice of topic for their culminating project and/or the way they approached that project and future endeavors. The SMM experience may affect participants’ outlook and/or self-knowledge in other ways. It would be of additional interest to know how, if at all, construction and reflection of their eportfolios affected participants in their studies and elsewhere. Finally, the researcher would like to include Dervin’s ‘magic wand’ question: “If you had a magic wand, what would you like to happen?” (Cheuk & Dervin, 2011, p. 10).

It is hoped, that reflection at this point in their studies may support participants in more informed decisions as they move towards their culminating project. It is further hoped that pairing SMM with participant reflection of their eportfolio in this instance may lead to wider application within the department. Additionally, data collected from these SMM reflections may inform the department regarding improvements that can be made in overall program and curriculum.

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Curriculum Vitae

Dr. Linda Z. Cooper is Associate Professor and Coordinator of the Library Media Specialist Programs at the Graduate School of Library and Information Studies in the City University of New York. She received her Ph.D. from the School of Communication, Information and Library Studies at Rutgers University. Her background encompasses study in information and library science, education, and art. These, together with her work as a teacher with children in school libraries and with adults at the graduate level, has informed her research and is reflected in her areas of interest which include how people understand, cognitive categories for information, the information behavior of children, visual information, and learning.