DOCUMENT RESUME

ED 454 238 TM 032 836

AUTHOR Livingstone, Phaedra; Lemelin, Nathalie
TITLE Doing Collaborative Museum Education Research: A Comparison of Findings from Two Case Studies on Educational Delivery at a Canadian Science Centre.
PUB DATE 2001-04-09
NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Attitudes; *Cooperation; Educational Facilities; Foreign Countries; *Instructional Effectiveness; *Museums; *Professional Development; Qualitative Research; *Research Methodology; Researchers; *Science Teaching Centers; Teaching Methods
IDENTIFIERS Museum Educators; Ontario (Toronto)

ABSTRACT

Researchers examined two independent museum education studies conducted at the same large science center in Toronto, Canada, and considered the implications of both studies for museum education. Study "A" explored museum development practice and its relation to casual visitor understandings of key concepts. Study "B" engaged science center educators in critical reflection on their pedagogical practices related to the delivery of a design and technology workshop. Study A was a multiple method qualitative case study that included semi-structured interviews with 10 exhibit development staff members and 25 visitors, exhibit content analysis, text analysis of more than 3,000 visitor comments, and a scan of boxes of exhibit development documentation. Study B used a naturalistic inquiry approach to the reflections of museum staff. Reflecting on the studies together, in a sort of meta analysis, provided insights into the nature of informal science learning in the museum. The dialogical reflection of the researchers resulted in several insights, the most significant of which related to the mapping of inquiry competencies into available professional museum competency schemas. This exercise highlighted gaps in which the analytical skills of front-line staff are not recognized or valued. Results demonstrate the usefulness of shared reflection and the recognition of research and reflective inquiry as "pan-museum" professional skills. (Contains 27 references.) (SLD)

DOING COLLABORATIVE MUSEUM EDUCATION RESEARCH:
A Comparison of Findings from Two Case Studies On Educational Delivery at a Canadian Science Centre.

Phaedra Livingstone & Nathalie Lemelin
Doctoral candidates
Dept. of Curriculum, Teaching and Learning
Ontario Institute for Studies in Education of the University of Toronto

Paper presented at the annual conference of the
American Educational Research Association, Seattle, WA, April 9, 2001.

Contact
P. Livingstone: *plivingstone@oise.utoronto.ca*, N. Lemelin: *nlemelin@oise.utoronto.ca*

INTRODUCTION

> Adults and children are exposed to many potential educative sources in their daily activities, and it is from such out of school sources that most people learn for most of their lives.
>
> Lucas, 1983, p. 1

This paper will briefly discuss two independent museum education case studies, conducted by educator/ researchers at the same large science centre in Toronto. We will discuss the relative methodologies used for the two studies, and then focus on the collaboration we established for making sense of the findings in terms of broader implications for the educational role of the museum and the professional development of its practitioners. It is our hope that informal learning researchers and educators may be encouraged to reevaluate studies conducted at their own informal learning setting to determine whether or not those studies might in fact be a useful source of comparative data for further research or reflection.

Our paper is intended for anyone who has an interest in informal learning/ learning in non-school settings, or museum education research methods. Our findings will also be of interest to museum staff involved in education, exhibit development or public programming. More generically, this paper will interest anyone wishing to expand his/ her understanding of reflective practice.

The Case Studies

Two very different studies in educational design were recently conducted independently at a large science center in the Toronto area. One study ("study A") looks at exhibit development practice and its relation to casual visitor understandings of key

concepts in a particular exhibition, and is being conducted for Livingstone's doctoral dissertation. The study Lemelin was associated with ("study B") engaged science centre educators in critical reflection on their pedagogical practices pertaining to the delivery of a design and technology workshop.

Study A (in progress) is using a multiple method qualitative case study design to look at the development and communicative effectiveness of an issues-based science centre exhibit. Data sources for this study include: semi-structured interviews with exhibit development staff (N= 10) and visitors (N= 25), exhibit content analysis using two published protocols, and text analysis of more than 3000 visitor comment sheets plus material gleaned from a scan of 7 banker boxes of exhibit development documentation.

It has been found that the educational *goals* of the exhibit in question were clearly defined from the outset of the development process. During interviews, for example, in order to explicate the intended message of the exhibit as they understood it, exhibit development staff were asked to call on memory to "describe one the exhibit displays with which you were involved in development." In response, most staff interviewed focused their discussion on the *content* of a specific display. Somewhat less attention was paid in these recollections to *how* a display functioned, or how it fit into a dominant exhibit narrative. Thus, visitor learning does not seem to have been as clearly conceptualized during the development process.

Visitor comments (both written and in interviews) demonstrate mixed results as to the efficacy of the exhibit displays in communicating key concepts in the absence of additional assistance from a museum educator/ animateur. Nonetheless, visitor responses

do demonstrate considerable engagement and contemplation of abstract exhibit concepts on the part of many visitors.

Study B used a naturalistic inquiry approach (Guba and Lincoln, 1988) and emergent research design. Personal construct theory was looked to in the development of a case study that describes the science centre educators' reflective pedagogical practice. Through a series of workshop observations and semi-structured repertory grid interviews it was found that the educators' primary role is one of support to the public school system. In that capacity, educators developed programmes that are closely linked to provincial science curricula. It was found that the science centre educators are often perceived by visiting schoolteachers as "expert scientists" or "expert technologists". Museum educators also self-define their role as including research into what technologies are available, learning about scientific investigation, and making new technologies available to school visitors (Bencze & Lemelin, 2000).

Recognizing a need for an emphasis on doing science and technology, educators at the science centre introduced a design and technology workshop for elementary clientele. These sessions were planned to engage students in open-ended, student-directed design projects, after having taken part in apprenticeship lessons and activities. Bencze &Lemelin (2000) reported that this innovative workshop succeeded in allowinf students to take control of their learning. The educators were successful in shifting the locus of control to students and implementing the workshop as planned. In spite of these successes, however, two factors acted as barriers to this shift in the knowledge construction in education programmes at this museum.

As Bencze & Lemelin (2000) report, students' designs were often limited by the technologies available to them and the instruction offered within the first half of the workshop pre-determined student designs (*technological determinism).* Also, while this science centre's chief pedagogical mandate is to support formal science and technology education by tailoring its educational experiences to match needs of and practices in schools, the workshop suffered somewhat from a *general disconnectedness between formal and informal education.* Finally, the museum did provide schools with a previsit resource package on the nature of design and technology, yet most students arrived unprepared for the workshop. Consequently, the museum educators expressed concern about the degree to which the workshop was being integrated into regular school programming, and considered ways to improve the situation.

The Collaboration

In the Fall of 1999 the authors established a peer mentoring partnership within our doctoral program in Curriculum Studies. Having both worked as museum educators, we drew on our experiences to problematize and illustrate perspectives in our conversations about curriculum theory. In time, our conversations also began to draw on our respective graduate research projects. At the same time, we shared and discussed relevant literature from museology, cultural studies, critical pedagogy and curriculum.

Having established a collaborative ethic through this process, we began to see the possibility for a similar approach to research and professional development in the museum. Having previously witnessed the problem of research reports collecting dust on museum shelves soon after publication, we wondered in particular how education or

audience studies might best speak to one another and so expand their relevance to museum professionals. Although a number of OISE research projects were being conducted contemporaneously at the same science centre, these projects were not formally sharing information. Interested in exploring the potential for some sort of meta-analysis in broadening the relevance of our research findings, we decided to report on our collaborative experiment.

CONTEXT AND THE STATE OF THE FIELD

Policy documents such as *Excellence and Equity* (AAM, 1992) write public education as an institution-wide objective of museum practice. Scholarship (principle 4), collaboration (principle 6) and professional development (principle 9) are among the 10 principles *Excellence and Equity* suggests are central to an action plan to answer the call to greater accountability in public service. Although *objectives* for implementing such an action plan are likewise offered, the principles and recommendations demonstrate an introspective vision for change. One objective offered within the scholarship principle, for example, is to (better) "explain the important role of research in museums to the public through exhibitions, programs, publications, and electronic media" (AAM, 1992, p.18). It is clear from the explanation of the principle and the other objectives offered that it is collections research that is implied here. Research on visitor learning and inquiries into what *the public* actually wants in a museum experience are not part of the vision offered. Nonetheless, the need for reflective museum practice (Worts, 1990; Teather, 1991) and research (reflective or not) on/ in museum education has been recognized (Woollard, 1999; Roberts, 1997).

In our experience of museum educational discourse, we have witnessed the problem of compartmentalization of knowledge according to particular disciplines (e.g., Education, Anthropology, Botany) or museum-types (e.g., science centre, art gallery, zoo). The average visitor's approach to museum knowledge, however, is interdisciplinary. The demand for greater public accountability in museums necessitates the questioning of traditional interpretive strategies in order to ensure the museum is engaging the visitor more on their own terms. In order to address the needs of diverse visitor "interpretive communities" (Hooper-Greenhill, 1999, pp. 13-14), museum educators need to form their own practical interpretive community. "A greater knowledge of the interpretive strategies employed by different communities of visitors would be helpful. This, of course, means in-depth research work" (Fish cited in Hooper-Greenhill, 1999, p.14). So, while there is new recognition of (1) the educational role of the museum, and (2) the communicative role of the museum educator, there still exists a gap between this theoretical conceptualization of museum education and actual front-line educator practice.

The following examples illustrate the fact that this transformation is not yet complete. Our own "in-service" training as front-line museum educators did not encourage dialogue or reflection on a vision for the educational role of a museum as a whole. Rather, we both received site-specific training that largely entailed modeling our practice on that of more senior educators. In this process, our prior teaching experience and training got us 'in the door' but was not treated as relevant to the job. Further, we found few opportunities for professional development, sharing notes with our peers, or exchanges with staff from other departments. Thus effectively isolated from a community of practice, the situation was exacerbated by limited exposure to professional/ research literature. Within the same

context, however, education department managers do have access to professional development and interdepartmental contact.

The hope for widespread implementation of *Excellence and Equity*, or similar policy, assumes certain standards in museum practice are ubiquitous. National and international museum associations have recently established standards and a common language for professional development in the form of professional competency frameworks. Examples include: the Canadian Museum Association's (CMA) *The Workforce of the Future* (1997), and the International Council of Museums' (ICOM) *Curriculum Guidelines for Museum Professional Development* (2000). These lists of competencies are for use across the various museum professions and over the course of a career. Both have "shared" (CMA) or "general" (ICOM) competencies-- ones all museum staff are expected to acquire-- including research, and evaluation. ICOM also defines general "museology" competencies for all staff.

Under the heading "evaluation methods", ICOM lists the following general competencies: analysis of data, data collection, project design, purpose, and report methods. Under "research" is listed: ability to seek out and acquire new information, apply learning to tasks, critical thinking, methodology. The CMA's shared competencies include similar skills and are further distinguished by five levels of proficiency-- from "most general level to the expert level", where the more expert the level, the closer the competency comes to a specialist functional competency (1997, p.11).

Within the ICOM public programming *specialist* competencies, research is not listed as a specialized skill, despite the call for museum education or audience research cited above. It is, however, within the domain of the specialist *management* competencies to

not only conduct audience research, but also engage in reflective practice. Like the CMA functional specialist competencies, ICOM's specialist competencies are functionally more advanced than the generic ones and so, in practice, do represent a hierarchy of professional knowledge. In particular, this translates into managers alone having the reflective practice skills needed to facilitate change-- an assertion we challenge. Further, this distinction contradicts the logic of the ICOM competency model as research and reflective practice skills are thereby not actually shared across the museum professions.

The skills gap implied in the professional competencies listed is echoed in the perceptions of the field related to Eisner and Dobbs' in interviews they conducted with directors and education curators in 20 large and medium-sized US art museums. Findings in their 1986 report, *The Uncertain Profession*, demonstrate the low status of education departments within the museums in question, and assert that morale, training, research methods and salaries for museum educators all need improvement. This confirms our experience where front-line educators are workers who implement plans but do not contribute to the development of the plans.

Implementing policy and transforming practice requires shared vision and 'buying into the plan'. Where is the voice of the front-line educator in the re-visioning of the educational role of the museum? Are education curator/ managers solely responsible to operationalize the new programming principles embraced in museum policy, while also keeping the disparate interests of visitors as the organizing principle? Obviously, there is an outstanding need to bridge the gap between idealized professional competency frameworks and the need for advice as to *how to* operationalize the necessary changes in interpretive strategies.

OBJECTIVES FOR THE COLLABORATIVE ANALYSIS

By discussing our respective studies undertaken at one science centre, we endeavored to draw a more complete picture of the current educational role/s of one public museum, by developing a sort of meta-analysis (c.f. Scott, 1998) through co-reflection. We saw the case studies as complimentary as one looked at school programming and the other at exhibit programming. Further, we felt collaboration between different departments in the institution would be a step toward better understanding the *nature* of informal science learning in this science centre. We believe the potential of such partnerships goes beyond the project's 'nuts and bolts' to include how people from different educational cultures might come together to develop innovative ways of presenting information to visitors of all ages and backgrounds.

In sharing notes on our relative research projects, our collaboration had a number of objectives. These were:

1. To compare the educational roles of museum educators with those of other museum staff (i.e., exhibit development staff) who help to shape the visitor's museum experience;

2. To offer suggestions regarding ways to operationalize change in museum education, by adopting research and reflective practice as GENERAL COMPETENCIES rather than specialized functional ones. This is key in opening up the responsibilty for public education across the museum;

3. To experiment with new methods of analysis in museological/ museum educational research.

The opportunity to experiment with new methods of analysis precipitated this particular inquiry. It is the exploration of possible ways to better implement the

professional museum competency guidelines for museum education practice that we focus on below.

THEORETICAL FRAMEWORK

Despite the number of studies that in some way look at museum learning, the definitions of learning used tend to be "unique, idiosyncratic and often implicit" (Leinhardt & Crowley, 1998). Many studies demonstrate the importance of the *idealized* visitor experience in the conceptualization of exhibits and programming (Falk & Dierking, 1992; Hein, 1998). Further, the *institutional* intentions, definitions and theories of what constitute museum education or museum learning are usually vague if defined at all. There is, after all, no universal definition of the educational role of the museum; there are still many museums and galleries where education is regarded as no more than the "provision of formal – often very academic – lectures or guided tours" (Boylan, 1999).

In our work, social constructivism (e.g., Lave and Wenger, 1991) offers a model for how museum learning operates. Study A was also informed by mass communications theory (Hall, 1993; Hooper-Greenhill, 1995). For the content analysis conducted in study A, feminist poststructuralist (e.g., Harding, 1998) and cultural studies (e.g., MacDonald, 1996) literatures were looked to in the interpretation of issues attached to the gendered and scientific representations displayed. Study B used personal construct theory (Kelly, 1963) to help describe museum educators' reflective pedagogical practice.

In our collaboration we considered both studies in terms of what the findings could offer in relation to developing museum professional literacy. Linking the principles of reflective practice (Schön, 1983), participatory research (e.g., Patton, 1997, pp. 87 ff.)

and action research (Kemmis and MacTaggart, 2000) enabled us to conduct critical reflection in a community of learners. Here we see the espousal of general research and reflective practice competencies and their adoption by educators as empowerment, comparable to Friere's description of *conscientization* in developing adult basic literacy (1970).

METHODS

Collaborative qualitative inquiry is recognized within social research as both a methodological decision and a form of community development (e.g., Reinharz, 1992; Patton, 1997). Voices supportive of collaborative innovations in museological research include Krapfel's interest in hybrid inquiries (1998, p.12), and Bailey's (1998) recognition of "cross-fertilization" during museum educational inquiry. In a similar spirit of collaboration, we conducted an experiment in reflective analysis and interpretation, whereby findings for two independent case studies at the same science centre were considered for broader implications for educational practice in museums. Through this process we developed *dialogical reflection.*

Over the course of our collaboration, methods used included:

1. Sharing notes on our relative studies,
2. Comparing literature sources on informal science learning/ museum education research,
3. Undertaking a joint lit search on museum professional development and participatory inquiry,
4. Tape-recording meetings, and
5. Through a dialogical process shared insights into the professional development issues raised within the two case studies discussed.

FINDINGS

The following excerpt is taken from a conversation we had over the course of one of our tape-recorded meetings. We discussed definitions of what reflective practice entailed for us as museum educators and educational researchers.

P: "Maybe we should start with a definition of what we mean by self-reflective because there's been a lot of talk about that. Doug Worts was writing about reflective-practice and Teather too, but they're just of gesturing nice ideas. Not situated in specific examples and saying 'you should be doing this and this and in this situation there are differences.' It's sort of a universal statement saying 'think about this.' Not even going to the level that Roberts does with a specific example. So that could be our starting point, going through a history of the dialogue about reflective practice. There's been a lot of attention to Schon, but that hasn't necessarily been built into Museum Studies curricula for training educators."

N: "But she (Roberts) acknowledges the fact that even within the educators, in the same institutions, there is a variety of training, philosophies, and goals for education, so with such disparities, what do you do? And she is sort of stating the fact, she doesn't offer any suggestions. I mean what we could work on here is maybe a working model, is that too ambitious?"

P: "Well, we could, well maybe not a model, because we want tobe case specific and question specific, and be sensitive to a variety of choices in terms of a variety of techniques and that sort of stuff. And I don't see that in a lot of museum research. There's a cookie cutter approach where people are satisfied to have a consultant come in and cut and paste from their old reports, do whatever it is they want them to do for the cheapest amount, but they don't necessarily use or understand and take up the results of that research. It's almost just to have the report on the shelf to say you've done some research. It's not a living exercise."

...

"Sometimes people out there will just do research because it's required by a funding body. You have to do some evaluations to see if what you did was okay... or successful. Or the way that research is done is not questioned, the results are all that are looked at. It's not brought into the type of programming that is done, not as far as I can tell anyways... I mean say there was something done in the education department at the ROM, if a good number of the teachers had been involved in the study, enough of them would be around so that they'd remember if not the details, then at least that there is a report sitting on the shelf. So there would be more institutional memory and it would be more of a living phenomenon and you would have some continuity. In part because they would be part of the process and in part because the questions would have been more meaningful."

N: "And if you had a participatory model, I mean based on successful studies that have been published, it creates a habit of mind. You're constantly questioning your practice and reflecting on what you're doing ... and making changes."

P: "And part of that process has to do with what is it you all mean when you're sitting around that table? There's going to be a learning curve as far as when you say research what do you mean. I mean, you can compare the competencies almost with this sort of a process. Those competencies don't really speak to me as living phenomena. These are the result of a committee sitting down and saying here are some nice ideas. But I wonder how many of them do research on a regular basis given those sorts of statement. That level 5 is not a level 5 (CMA). It's not the ultimate goal... unless the level is what everyone at every level should aim for in every day practice."

Through such discussions, we challenged one another's assumptions and analyses, in pursuit of a richer understanding of educational practice/ the educational role in museums. Both researchers benefited from this collective reflection in a number of ways:

1. We each gained analytical skills and insights into the research process;
2. We each developed a broader understanding of educational practice within the case study site. This broader understanding would have been impossible to attain individually given the same timeframe and resources;
3. We bridged the theory/ practice divide in our conversations, allowing us to both make sense of our past experience in a theoretical way, and inversely, to critique museum policy/ museology curricula based on our grounded knowledge of the field.

The academic partnership we had previously established was enriched through the collaborative experience. Establishing a new co-learner partnership for such an exercise, however, would likewise have been a benefit to both participants. As graduate students in a marginal field of educational inquiry we both found community. Just as action research is negotiated in a community of collaborators, this form of reflective practice happens in community.

The most significant insight we gained in terms of practice related to the mapping of inquiry competencies into available professional museum competency schemas. This exercise highlighted the gaps in the ICOM and CMA frameworks, whereby *analytical* skills in front-line staff are not recognized or valued-- echoing the educator disenfranchisement attested to by Eisner & Dobbs (1986) and ourselves (see above). This may explain the double standard whereby museums broadly self-define as educational institutions, but may not see museum educators as having broadly defined educational responsibilities. We see potential for this type of inquiry to contribute to *museum professional literacy* while empowering museum educators—along the lines of Friere's

conscientization—while also responding to the call for professional development and reflective practice, in a manner other museum educators might emulate. All museum personnel involved with the public in some capacity "...need to collaborate with colleagues in similar circumstances on practical research.... which can be published or used for the basis of discussion with a larger professional group" (Woollard, 1999, p.145).

As graduate students, we also gained practical skills in collaborative research. Our understanding of educational practice was greatly enriched through the comparative interpretation, that was in effect, also a further form of *triangulation*. In comparing qualitative case studies, provided data standards and research questions are adequately accounted for, a descriptive richness almost comparable with a full-blown ethnographic study can be made possible.

LIMITATIONS

Our analysis was limited by the fact that it was not planned from the outset of the respective case studies. The case studies are, therefore, not as complimentary as they might otherwise have been. This situation does, however, mimic a realistic museum situation, where individual studies or consultant's reports are stand alone and may not be shared very widely or long.

In the effort to situate our conversations and methods within museology, we were limited by the fact that the existent literature is still largely advocacy-oriented (pragmatic) in nature, and not theoretical. In order to engage with pre-existing theory, we have had to draw on methodology and education models not designed with the museum field in mind.

Worse, the discipline-based research traditions well-established in the museum do not tend to involve institutional analyses or reflexivity in *museum* practice. Thus, our analysis and suggestions might be resisted or even ignored, as it would be seen by a number of museum professionals as irrelevant to their work. This sort of exercise, however, might be taken up by other museums/ museum researchers in response to the call for professional development that allows museum practitioners to develops skills and knowledge to contribute to professional understanding in the museum *as a whole* (Woollard, 1999).

SUGGESTIONS

While it may be unusual for two independent case studies to occur simultaneously in one museum, past studies/ reports may likewise provide useful starting points for inquiries into museum practice. As 'snapshots' past reports can offer some institutional memory to new management employees, remind one that what seems static does in fact change, or raise questions about how things might be done differently in the future.

The comparison and contrast of assumptions and findings we experienced suggests similar insights are possible in any sharing notes on processes and results of museum research. To reflect on one's own work alone is not nearly as productive as having two (or more) opinions, *plus* the opportunity to compare and contrast results. Where the results of a study or change in practice are to have institution-wide implications (e.g., related to museum mission), consider other 'nontraditional' institutional stakeholders for your research and include them in the dialogue early on for a more holistic treatment of issues.

Finally, the implicitly hierarchical approach to museum competencies demonstrated by curricula such as the ICOM and CMA frameworks should be reconsidered. Enacting

the plan to be responsive to the public in new ways draws on the skills of museum workers across the institution, at all levels. Reflexive inquiry, therefore, should be enshrined as a valued skill across the museum professions. The recognition of research and reflexive inquiry as 'pan-museum' professional skills, we suggest, would be a useful first step in operationalizing the various recently established sets of museum competencies.

A corollary of this need to embrace inquiry skills across the professions is the need for educators to assert their expertise outside of the education department per se. Blais (1995), for example, found educators acknowledging change but not yet convinced about using their expertise outside their traditional field of work. This suggests the need for education managers to encourage educators to bring their expertise and experience into the dialogue on the changing public role of the museum. Where educators lack reflective practice skills, they can be empowered through staff training.

REFERENCES

AAM Task Force on Museum Education. (1992). *Excellence and Equity: Education and the Public Dimension of Museums.*

Bailey, E. (1998). "Two Stories of Collaboration and Cross-Fertilization" *Journal of Museum Education*, 23 (2): 16-18.

Blais, J.M. (1999). Creating Exhibitions for Learning. in H. Moffat & V. Woollard (Eds.) *Museum and Gallery Education: a manual of good practice.* Walnut Creek: Alta Mira.

Boylan, P.J. (1999). Preface. in Moffat, H. & Woolard, V. (Eds.) *Museum & Gallery Education: A Manual of Good Practice.* Walnut Creek: Alta Mira Press.

Canadian Museums Human Resource Planning Committee. (1997). *The Workforce of the Future: Competencies for the Canadian Museum Community.* Ottawa: CMA.

Eisner, E.W. and Dobbs, S.M. (1986). *The Uncertain Profession.* Los Angeles: Getty Center for Education in the Arts.

Falk, J. and Dierking, L. (1992). *The Museum Experience.* Washington, DC: Whalesback Books.

Friere, P. (1970). *Pedagogy of the Oppressed.* New York: Continuum Publishing.

Gaines, B. R. and Shaw, M. L. G. (1993). Knowledge Acquisition Tools based on Personal Construct Psychology. *Knowledge Engineering Review*, 8(1): 49-85.

Guba, E. G. and Lincoln, Y. S. (1988). Naturalistic and Rationalistic Enquiry. In J. P. Keeves (Ed.), *Educational Research, Methodology and Measurement: An International Handbook.* London: Pergamon Press, pp81-85.

Hall, S. (1993) "Encoding, decoding" in Simon During, (Ed.) *The Cultural Studies Reader.* New York: Routledge. pp.90-103.

Harding, S. (1998). *Is Science Multicultural?* Bloomington: Indiana University Press.

Hein, G. (1998). *Learning in the Museum.* New York: Routledge.

Hooper-Greenhill, E. (Ed.) (1995). *Museum, Media, Message.* New York: Routledge.

International Council of Museums, International Committee for the Training of Personnel. (2000). *Curriculum Guidelines for Museum Professional Development.* Available at: <http://http://museumstudies.si.edu/ICOM-ICTOP/index.htm>

Kelly, G. A. (1963). *The psychology of personal constructs (Vols. 1 & 2).* New York: W. W. Norton.

Kemmis, G.A. and MacTaggart, R. (2000). *Participatory Action Research.* in N.K. Denzin & Y.S. Lincoln (Eds.) *Handbook of Qualitative Research, 2nd ed.*, pp.567-606. Thousand Oaks: Sage.

Krapfel. P. (1998). How Museums Can Shape Public Education. *Journal of Museum Education*, 23 (2): 11-13.

Lave, J. and Wenger, E. (1991). *Situated Learning.* Cambridge: Cambridge University Press.

Leinhardt, G. and Crowley, K. (1998). *The Museum Learning Collaborative: Phase 2.* November 1998. <available at http://mlc.lrdc.pitt.edu/mlc/>

Lucas, A.M. (1983). Scientific Literacy and Informal Learning. *Studies in Science Education,* (10): 1-36.

Macdonald, S. (ed.) (1996). *The Politics of Display.* New York: Routledge.

Patton, M.Q. (1997). *Utilization-focused Evaluation, 3rd ed.* Thousand Oaks: Sage.

Reinharz, S. (1992). *Feminist Methods in Social Research.* New York: Oxford University Press.

Schön, D. (1983). *The Reflective Practitioner: How Professionals Think in Action.* New York: Basic Books.

Scott, C. (1998). "Meta Evaluation." Paper presented at the 1998 Museums Australia Conference, August 3-5, 1998, Canberra. Available at: <http://amol.org.au/evrsig/conference_papers/meta.pdf>

Woollard, V. (1999) Developing Museum and Gallery Education Staff in H. Moffat & V. Woollard (Eds.) *Museum & Gallery Education; A Manual of Good Practice.* Walnut Creek: Alta Mira Press.

AERA

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

TM032836

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: DOING COLLABORATIVE MUSEUM EDUCATION RESEARCH.

Author(s): PHAEDRA LIVINGSTONE, NATHALIE LEMELIN

Corporate Source: ~~AERA conference paper~~. OISE / UNIV. OF TORONTO.

Publication Date: 2001.

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1

☑

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy.

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A

☐

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B

☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, → please

Signature: P. Livingstone

Printed Name/Position/Title: PHAEDRA LIVINGSTONE

Organization/Address: 208 NIAGARA ST., RM. 20 TORONTO, ON M6J 3W5 CANADA.

Telephone: 416 203 2571

FAX:

E-Mail Address: plivingstone@oise.utoronto.ca

Date: April 13/01

(over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

University of Maryland
ERIC Clearinghouse on Assessment and Evaluation
1129 Shriver Laboratory
College Park, MD 20742
Attn: Acquisitions

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
1100 West Street, 2nd Floor
Laurel, Maryland 20707-3598

Telephone: 301-497-4080
Toll Free: 800-799-3742
FAX: 301-953-0263
e-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com