

Evaluating the Impact of Information Literacy in Higher Education: Progress and Prospects

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The past few years have seen a growing interest by library staff in information literacy interventions focussed on students and, more recently, on postgraduate and postdoctoral researchers. This paper reviews progress to date in evaluating the impact of information literacy work in Higher Education in the UK. It also describes a collaborative UK national ini-

tiative in which various university library teams engaged in evaluating information literacy. Finally it proposes a research design for further evaluation work in higher education, combining a new student-focussed framework for information literacy development (already field-tested) and application of concept mapping as a diagnostic tool.

The impact of Information Literacy

The past few years in higher education have seen a growing interest by library staff in information literacy interventions focussed on students and, more recently, on postgraduate and postdoctoral researchers. A separate but parallel growth has seen a shift from traditional service evaluation using quantitative performance indicators towards impact evaluation employing a range of methods but relying heavily on qualitative approaches. This shift might be characterised as an increase in emphasis on the effectiveness rather than just the efficiency of library services.

What do we mean by information literacy? The SCONUL website offers a definition from their Working Group on Information:

Information literacy encompasses library user education, information skills training and education, and those areas of personal, transferable or 'key' skills relating to the use and manipulation of information in the context of learning, teaching and research issues in higher education. [1]

This definition has the merit of 'rounding up' a range of areas of greater or lesser interest for HE library staff into a single area of concern which are also of growing interest to academic colleagues.

Turning to the concept of impact, our preferred variation amongst many similar statements is:

... any effect of the service (or of an event or initiative) on an individual or group.

The impact may be positive or negative (it is as important to know what is not working as well as

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what is going well) and may be intended or accidental (there are usually unintended good or bad consequences in any human action or interaction). Two further points to make when talking about impact are firstly that impact evidence is not a distinct category of information, it is information gathered to assess whether impact has occurred or not; secondly, because measuring impact is about identifying and evaluating change, it is not finally possible to assess the impact of any intervention or activity – the best we can hope for is to find strong surrogates for impact that provide a close approximation (for example, someone describing their reaction to an experience immediately afterwards or after due reflection about it).

Early in 2006, the authors of this paper were invited to join a University of Sheffield-led team which was commissioned by the Higher Education Academy to conduct an *Information Literacy Review* concentrating on published research. [2] The question assigned to them for this review was ‘What is the available research evidence of the impact of [HE] libraries on the student learning experience?’

At around the same time, the authors were asked to prepare a chapter on information literacy for the latest volume of *British librarianship and information work*, (Streatfield & Markless 2007) which again required a review of the published work on the impact of information literacy work. Their work was made easier by the recent publication of the review by Wavell and colleagues (2002) of evidence of the impact of museums, archives and libraries. In relation to further and higher education libraries they reported that

Academic libraries in the FE and HE sectors are also concerned with tackling the issue of impact assessment and, at present, are at the stage of attempting to find appropriate indicators and data collection techniques.

Some progress in impact evaluation by higher education libraries was discernible in the five years since publication of that review. Specifically, there has been some progress in developing and applying impact evaluation tools and techniques in the UK (as described below) and in the USA (Bertot & Davis 2004); in evaluating both the technological and the teaching and learning dimensions of VLEs (Brophy, Markland, & Jones 2003); in evaluating specific institutional informa-

tion literacy initiatives (usually by collecting pre- and post-intervention evidence, e.g. Bordonaro & Richardson 2004); in assessing student learning by resort to student test results (Fiegen & Cherry 2002), diagnostic tests (Baker & Needham 2005) assignments and other forms of self-assessment using questionnaires (Bunz & Sypher 2001) or interviews (Grant & Berg 2003). The student feedback focuses on their perceived skills, confidence and self-esteem (Middleton 2005), as well as their attitudes to information literacy work (Julien & Boon 2004). There is also some increase in attention to the analysis of student information-seeking behaviour (Arenas and Rodraguez 2004) and to student information literacy support needs (Gomm 2004), notably in relation to distance learners (Fishman 2005).

Nevertheless, the two reviews of published impact research conducted by the authors of this paper found:

- lots of descriptive and anecdotal evidence and descriptions of best practice
- little published detail of data gathering methods; absence of systematic and rigorous reporting (this is a real issue for the field), and as a result
- often no way of identifying the quality of the data collection through the published reports
- lots of attention to potential outcomes rather than systematically assessed impact evidence
- some synopses of impact investigations, but not integrated into a growing body of evidence.

There was an increasing number of micro-level studies on pedagogic aspects of information literacy (Granath & Samson 2004), notably on the effects of collaboration between librarians and teachers in designing, delivering and assessing information literacy programmes or assignments (McDowell 2002; Fosmire & Macklin 2004), including integration of the requisite skills into the curriculum. Increased attention was also being paid to the effects of information literacy programmes on attracting and retaining students (Kuh & Gonyea 2003), especially those from minority groups (Lichtenstein 1999) or involved in non-standard course provision, mostly in the form of small-scale descriptive studies.

Unfortunately the research design and conduct of most of the micro-level studies reported was insufficiently rigorous for systematic macro-level

analysis to be undertaken. Further attention to the design and application of impact evaluation instruments is required to create a prospect of wider generalisability from single institution or other small-scale studies.

Overall, there are still big gaps in the published literature (and therefore, presumably in the research arena), notably a need for more rigorous and larger-scale impact evaluation work on:

- Enabling independent learning, especially on-line learning
- Changes in levels of student competence and confidence
- Changes in student behaviour
- Effects of information literacy-based changes in the curriculum
- Student attitudes to virtual learning environments and information literacy
- The comparative efficacy of different levels and types of information literacy interventions
- The overall value of library-based information literacy work to the academic communities.

These themes are elaborated in the last section of this paper.

Since completing the two reviews, the authors have undertaken a survey of HE libraries in the UK on the training of postgraduate and postdoctoral researchers in relation to 'research information methodologies and tools' for the Research Information Network. [3] Library service managers report a disappointingly low level of impact evaluation of the training that they offer beyond analysis of reactionnaires completed by participants immediately after the events.

The Impact (Implementation) Initiative

The authors facilitated the *Impact Implementation Initiative* (2003–2005) (later referred to as the *Impact Initiative*) on behalf of the Library and Information Research Group and Society of College, National and University Libraries. This unique project relied on a facilitated action research (FAR) process to support a total of 22 university teams drawn from across England and Scotland in two annual cycles, working through a series of three linked workshops to equip them to conduct their own evaluations of interventions. Seven of the ten university library teams that worked through

year one of the programme and six of the year two participant teams chose to focus their innovative activity and the linked impact evaluation on information literacy interventions in their universities. Seventeen of the participating teams, including twelve of those focusing on information literacy completed their cycle by submitting a project report.

The essence of the programme was that it should provide support for systematic efforts within each of the participating universities to evaluate the impact of real initiatives. Since the primary focus of the programme was on improving practice, with the development of theory and understanding as a secondary concern, an action research approach seemed appropriate. John Elliott (1991) defined action research as "the study of a social situation with a view to improving the quality of action within it"; a view broadly shared by most writers on the topic (McNiff 1993; McKernan 1996; Winter & Munn-Giddings 2001). They also emphasise that action research offers possibilities for practical work that is also a form of learning for those involved.

Our starting point was that the best people to generate evidence about what is possible, as well as about which approaches work well and why, are the practitioners themselves. They should also be engaged in deciding how different approaches might be used by other busy practitioners and about the usefulness of the data generated in informing and developing practice. External researchers should be able to deploy a wider repertoire of methods to evaluate the impact of library services on teaching, learning and research. However, the transient nature of most external research interventions will not empower university library staff to continue to collect evidence and to learn about the issues over time – a key aim of the *Initiative*. Action research as a form of social research is not a detached, specialised, technical activity but one closely linked to reflective practice, designed to be undertaken by practitioners and to empower them (Reason & Bradbury 2001).

The main features of the Facilitated Action Research (FAR) approach were described at a recent conference (Markless and Streatfield forthcoming):

- it is based on the authors' impact evaluation model (since published in book form, Markless and Streatfield 2006a) to provide a coherent and systematic approach

- workshops are deployed to engage, motivate and orientate people; to empower librarians as practitioner researchers; and later to keep up the momentum and deal with problems arising
- examples of service objectives, impact indicators, data collection tools and other materials are provided to keep the focus on impact
- e-support is offered between workshops to keep people on track and sort out specific problems
- teams work together within each participating library – mutual support is vital
- where possible (i.e. where they share an evaluation focus and approach) teams are encouraged to work together
- the facilitators perform guidance, feedback, monitoring and support roles
- the essence of the approach is self-evaluation – each team chooses its own objectives, impact indicators (how they want themselves to be judged) and methods of data gathering (allowing sensitivity to the local context); and writes its own report of the process and outcomes.

The underpinning principles driving this approach to evaluation are:

- it is based on the capacity of evaluation to enhance the services under review (the whole approach is developmental not judgemental)
- the process is owned/adapted by practitioners (the intention is to empower participants whilst they are engaged in the project and to equip them to undertake other evaluation work independently after the project ends)
- these practitioner-formulated approaches are conducted within a coherent framework
- preparation for this work involved the facilitators in tapping impact evaluation research across different disciplines (e.g. education and business) to help participants get at impact
- this approach also seeks to learn from the research about how specific services can be provided effectively
- participants should work within a supportive team and explore evaluation issues in a risk free workshop environment
- the teams engage in a real initiative with no extra time or money provided; they have to fit the work into busy lives
- the idea of impact evaluation is to move people beyond a traditionalist view of 'good professional practice.'

The whole programme was complex because it operated simultaneously at each of three levels:

- action research undertaken by each team *within* each participating university library
- sharing and reviewing impact indicators, data gathering tools and problems *across* participating libraries
- evaluating the impact model together with the FAR approach as an experimental programme of change.

A more detailed account of the facilitation process as enacted through the *Impact Initiative* was given in the special issue of *Library and Information Research* devoted entirely to the project (Markless & Streatfield 2005). The first year of the *Impact Initiative* programme is more fully described in Markless and Streatfield (2006b).

Reviewing the Impact Initiative in an Information Literacy context

Did the FAR approach work? If the approach was successful it would be reasonable to expect changes in how people did things (the range of research methods used and how these were applied), enhanced understanding of the issues involved in impact evaluation and evidence that a variety of impacts had been found. Using these criteria:

- The progress reports prepared for the interim and final workshops as well as the project reports produced by each of the library teams at the end of their involvement with the project showed that participants had opted for *a wide variety of evidence collection methods*, ranging from development of diagnostic tests for students to use of questionnaires at one institution (and of questions embedded in websites at several others), and from structured focus groups to interviews conducted during searches. Other methods tried included student diaries and student progress files, analysis of assignments and bibliographies (a popular method for getting at the impact of training interventions amongst the participating teams) and, in one case a teaching audit.
- Participants reported that they had learnt various *lessons in applying this approach* to impact evaluation, especially that collaboration between academic and library staff is vital, and that networking throughout the university and within the LIS team is critical to find support and to keep people in the picture. Teams felt that it was important to focus on one aspect of provision (in this case an aspect of information literacy provision) in depth rather than to dissipate energies in more superfluous evaluation. They also found that the framework and structure provided to support the process enabled them to make progress and valued the examples and detailed descriptions of research tools that were provided.

- Turning to their *understanding of the issues involved*, participants felt that they had gained greater understanding of the world of the academic staff and of issues in teaching and learning, as well as greater understanding of process and structure of impact evaluation. This had led some teams to reassess and in some cases to change current practice and the fact that they were trying to evaluate impact in terms of teaching and learning tended to raise the profile of the library amongst academic colleagues and students. Participants valued the opportunity to reflect on practice whilst developing new interventions and all of those who completed the cycle felt that they had achieved real development in their information literacy work.
- As to the *impacts found* through this work, teams reported an increase in student awareness of services and resources, advances in the integration of information literacy into subject-based teaching and learning, as well as positive academic staff attitudes to an information literacy framework and more student use of materials. They identified gains in student (and researcher) skills and, in one institution, an improvement in the quality of diagnostic tests (for distance learning).

Interestingly, whilst one team were able to demonstrate that students can improve skills using generic e-learning resources, which led the team to move more confidently into e-tools provision, another reported that the benefits of their integrated, context driven approach to information literacy was made visible. This suggests that the particular circumstances of the institution need to be taken into account when considering whether a subject-based approach to information literacy is preferable to a generic approach. However, it is important to emphasise that the weight of pedagogic research evidence suggests that embedded skills development (situated cognition developed in authentic contexts, see Perkins and Saloman 1989) is likely to be more effective in general.

Negative impacts can also be valuable, as shown by one university library which secured funding for focused tutorials using Web CT – after their evaluation demonstrated that their existing induction was failing to have any impact on search strategies.

One team, which had chosen to focus on information literacy skills of their researchers, concluded its report by noting:

Even experienced postgraduate students can improve their searching skills and gain awareness of more appropriate tools to use. They do this best in a discipline-focused environment and we have changed the way we teach our postgraduates as a result.

Some broader issues

From the perspective of the facilitators, there were several generic issues arising in implementing the FAR approach, but none that was peculiar to its application in evaluating information literacy interventions. Looking at the process as a whole, facilitated impact evaluation requires adequate structure, facilitation and active management. This management dimension is particularly important if there is any aspiration to compare impact across institutions, since useful comparisons can only be achieved if each of the co-operating services adopts the same impact indicators and then applies the same evidence collection methods in the same way (and ideally at the same time). More generally, the FAR approach inevitably creates tensions between elegance of research design, consistency of data collection, validity of results, and rigour in research execution on the one hand, and real development and empowerment of the practitioners involved in carrying out the impact evaluations on the other. It is not realistic to aspire to turn library managers into skilled academic researchers, but it is a reasonable aspiration to support practitioners in becoming effective evaluators of their own service impact through the FAR process.

One unanticipated issue was that the first tranche of participants would have liked the facilitators to insist on teams working together rather than merely suggesting this as an option. The notion of the facilitators as enforcers was not one that they could accept. Instead, time was made available in the second cycle to allow teams to explore collaborative options and the shared information literacy focus did appear to encourage this way of working. Even then, collaborative arrangements were likely to break down if team members came under heavy work pressure within their institutions. Of more concern was the low rate of requests for help (apart from specific e-mail enquiries and calls for feedback on their evaluation tools) even from those teams that did not complete their cycle.

The main lessons for the *facilitators* were about the critical role of the workshops in the process (these were changed twice to improve the focus and level of help at different times) and about the need to change the facilitation role at various stages in the cycle (from research (and especially impact evidence collection advice at the outset

to facilitation as problems emerged and then to change management as these problems were addressed).

Some participants experienced difficulties in fitting the requirements for impact evaluation into the organisational planning and work cycle, since impact evaluation evidence gathering and analysis won't necessarily fit comfortably into the academic year. Again, there are potential problems in 'institutionalising' impact evaluation work. Assuming that evaluation of a particular service is successful, should the process then be repeated annually, should attention be turned to another service or should impact evaluation be put on hold until another issue calls for attention?

The other organisational factor is that whereas most traditional library performance measurement can be conducted within the confines of the service, impact evaluation usually entails engaging with academic staff or students. This provided one of the teams with a horrible insight into the organisational context of evaluation work:

"Influencing academics and getting change at Academic Boards was harder to do than the evaluation!"

Overall, we have no doubt that the *Impact Initiative* was a successful programme that met its main objectives and that FAR was an appropriate strategy for supporting library service managers who wish to evaluate the impact of their information literacy initiatives.

Reports of the project teams, including their impact indicators and the results obtained by applying them, can be found on the LIS-Impact discussion group site for the project. [4]

A full description of the impact evaluation process and examples of the materials used, including evidence-collection instruments suitable for information literacy impact evaluation, are available on the SCOUNL Vamp Project website. [5]

Further research

Effective impact evaluation should make use of the available research to ensure that service aspirations are realistic and achievable and that evidence-gathering is focused in areas which the research has shown to be potentially fruitful. At present, aspiring impact evaluators in the higher education arena are hampered by the relatively

immature state of information literacy research. As indicated earlier in this paper, there is a pressing need for more rigorous and larger scale research on such themes as:

- enabling independent learning, especially on-line learning (distance learning approaches to information literacy)
- changes in levels of student competence and confidence in relation to information literacy
- the effects of information literacy on attracting and retaining students
- the effects on students and library staff of changes in the curriculum to accommodate information literacy, including assessment strategies and criteria
- student attitudes to virtual learning environments and information literacy
- the effects of library initiatives in addressing inadvertent plagiarism and the role of assessment strategies in this area
- the comparative efficacy of different levels and types of information literacy intervention
- the scope for using social networking on Web 2.0 to enhance information literacy
- the overall value of library-based information literacy work to the academic communities and the consistency of this added value over time.

As a contribution to several of these areas of research, the authors are currently developing ideas for a research design for further information literacy evaluation work in higher education. This proposed research will address important issues, including ways to evaluate interventions aimed at enabling independent learning and ways to assess the impact of changes in levels of student competence and confidence in relation to information literacy. Their proposed approach combines:

- a focus on student information literacy needs based on emerging student understanding of their subject of study
- use of a new framework for information literacy development designed as a support for students in their learning rather than as a guide for teaching. This framework was developed for the University of Hertfordshire in 2006, and has been subjected to (on-going) field-testing by students). An outline of this framework, which draws heavily on the work of Ross Todd (2001) and Alan Foster (2004), was published as a chapter in a new book on information literacy (Markless & Stratfield 2007). The framework should provide scope to explore the different information choices students make when tackling different tasks

- application of concept mapping as a way of mapping the learning process (as well as identifying non-learning) and to measure the quality of learning, building on the work of Kinchin and Hay (Kinchin, Hay & Adams 2000; Hay 2007) at King's College London. Although the role of concept mapping in enabling student learning is well-established, it has only been applied on a very limited scale in information work (see Sherratt and Schlabach 1990). Concept mapping offers a powerful tool to examine student understanding of information literacy before and after systematic intervention (which will be based on use of the framework).

Notes

1. Society of College, National and University Libraries (SCONUL). URL: http://www.sconul.ac.uk/activities/inf_lit/About_us.html [viewed September 2007]
2. See URL: <http://dis.shef.ac.uk/literacy/hea-flyer-nov.pdf> [viewed September 2007]
3. See URL: <http://www.rin.ac.uk/training-research-info> [viewed September 2007]
4. URL: <http://www.jiscmail.ac.uk/archives/lis-impact.html> [viewed September 2007]
5. URL: <http://vamp.diglib.shrivenham.cranfield.ac.uk/impact/impact-initiative> [viewed September 2007]

References

- Arenas, J. L. de, J. V. Rodriguez, *et al.* 2004. Information literacy implications for Mexican and Spanish university students. *Library Review* 53 (9): 451–60.
- Baker, K., and G. Needham. 2005. Open University Library: impact and effectiveness of information literacy interventions. *Library and Information Research News* 29 (91): 46–98.
- Bertot, J. C., and D. M. Davis. 2004. *Planning and evaluating library networked services and resources*. Tallahassee, Florida: Information Use Management and Policy Institute.
- Bordonaro, K., and G. Richardson. 2004. Scaffolding and reflection in course-integrated library instruction. *Journal of Academic Librarianship* 30(5): 391–401.
- Brophy, P., M. Markland, and C. Jones. 2003. *Link^{er}: Linking digital libraries and virtual learning environments: evaluation and review. Final report. Formative evaluation of the DiVLE Programme*. Manchester: CERLIM Centre for Research in Library and Information Management. URL: http://www.cerlim.ac.uk/projects/linker/linkerd5_master.doc [viewed 24 March 2008]
- Bunz, U. 2004. The computer-email-web (CEW) fluency scale – development and validation. *International Journal of Human-Computer Interaction* 17(4): 477–504.
- Elliott, J. 1991. *Action research for educational change*. Buckingham: Open U P, 61.
- Fiegen, A. M., B. Cherry, *et al.* 2002. Reflections on collaboration: learning outcomes and information literacy assessment in the business curriculum. *Reference Services Review* 30(4): 307–18.
- Fishman, D., K. B. Kelley, *et al.* 2005. Information literacy and the distant student: one university's experience developing, delivering and maintaining an online, required information literacy course. *Internet Reference Services Quarterly* 9(1/2): 21–36.
- Fosmire, M. and A. S. Macklin. 2004. A blueprint for progress: collaborating with faculty to integrate information literacy into the curriculum at Purdue University. *Resource Sharing and Information Networks* 17(1/2): 43–56.
- Foster, A. 2004. A non-linear model of information-seeking behaviour. *Journal of the American Society for Information Science and Technology* 55(3): 228–37.
- Gomm, S. 2004. A needs analysis of the computer and information literacy (CIL) requirement at Utah State University. Logan, UT: Utah State University, Dept. of Instructional Technology. PhD thesis. *Dissertation Abstracts International* 65(11-A): 4166.
- Granath, K. and S. Samson. 2004. Reading, writing and research: added value to university first-year experience programs. *Reference Services Review* 32(2): 149–56.
- Grant, M. and M. Berg. 2003. Information literacy integration in a doctoral program. *Behavioral and Social Sciences Librarian* 22(1): 115–28.
- Hay, D. B. 2007. Using concept mapping to measure deep, surface and non-learning outcomes. *Studies in Higher Education* 32(1): 39–57.
- Kinchin, I. M., D. B. Hay, and A. Adams. 2000. How a qualitative approach to concept map analysis can be used to aid learning by illustrating patterns of conceptual development. *Educational Research* 42(1): 43–57.
- Kuh, G. D., and Gonyea, R. M. 2003. The role of the academic library in promoting student engagement in learning. *College and Research Libraries* 64(4): 256–82.
- Julien, H. and S. Boon. 2004. Assessing instructional outcomes in Canadian academic libraries. *Library and Information Science Research* 26(2): 121–39.
- Lichtenstein, A. A. 1999. A productive partnership: university librarians and minority students. *Journal of Educational Media and Library Sciences* 37(1): 27–37.
- Markless, S. 2003. The case for action research chapter. In Lea, J., D. Hayes, A. Armitage, L. Lomas, and S. Markless. *Working in post-compulsory education*. Maidenhead. UK: Oxford University Press.

- Markless, S., and D. R. Streatfield. 2005. Facilitating the Impact Implementation Programme. *Library and Information Research* 29(91, Spring): 10–19.
- Markless, S., and D. R. Streatfield. 2006a. *Evaluating the impact of your library*. London: Facet.
- Markless, S., and D. R. Streatfield. 2006b. Gathering and applying evidence of the impact of UK university libraries on student learning and research: a facilitated action research approach. *International Journal of Information Management* 26: 3–15.
- Markless, S., and D. R. Streatfield. 2007. Three decades of information literacy: redefining the parameters. In Andretta, S., ed. *Change and challenge: information literacy for the 21st Century* Adelaide: Auslib Press
- Markless, S., and D. R. Streatfield. (forthcoming) Supported self-evaluation in assessing the impact of HE Libraries. In Graham, M. and S. Thornton, eds. *Seventh Northumbria Conference on performance measurement in libraries and information services: proceedings*. Bingley, UK: Emerald.
- McDowell, L. 2002. Electronic information resources in undergraduate education: an exploratory study of opportunities for student learning and independence. *British Journal of Educational Technology* 33(3): 255–66.
- McKernan, J. 1996. *Curriculum action research*. London: Kogan Page
- McNiff, J. 1993. *Teaching as learning: an action research approach*. London: Routledge
- Middleton, A. 2005. Northumbria University: impact on improving students' confidence and competence in information and IT skills. *Library and Information Research News* 29(91): 43–45.
- Payne, P., and A. Conyers. 2005. Measuring the impact of higher education libraries: the LIRG/SCONUL Impact Implementation Initiative. *Library and Information Research* 29(91, Spring): 3–9. [The whole of this special issue of LIRN is devoted to the Impact Implementation Initiative.]
- Perkins, D. N., and G. Saloman. 1989. Are cognitive skills context-bound? *Educational Researcher* 18(1): 16–25.
- Sherratt, C. S., and M. L. Schlabach. 1990. The application of concept mapping in reference and information services. *RQ* 30(Fall): 60–69.
- Streatfield, D. R., and S. Markless. 2007. Information literacy. In Bowman, J. H., ed. *British librarianship and information work 2001–2005*, 413–430. Aldershot, Hampshire: Ashgate.
- Todd, R. 2001. *Transitions for preferred futures of school libraries*. Keynote paper to International Association of School Libraries (IASL) Conference, Auckland, Symposium 2001. URL: <http://www.iasl-slo.org/virtualpaper2001.html> [viewed 20 December 2006] [Since developed by Professor Todd in various conference papers and presentations].
- Wavell, C., G. Baxter, I. Johnson, and D. Williams. 2002. *Impact evaluation of museums, archives and libraries: available evidence project*. Aberdeen: The Robert Gordon University for Re:source: the Council for Museums, Archives and Libraries. URL: <http://www.rgu.ac.uk/files/Impact%20evaluation%20of%20museums.pdf> [viewed 24 March 2008]
- Winter, R., and C. Munn-Giddings. 2001. *A handbook for action research in health and social care* London: Routledge.

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