

Information literacy and reflective learning

An action research project at the University of Parma

Research Proposal

Monica Vezzosi

MODULE BP 101

MA/MSc Information Studies
University of Northumbria – Newcastle
Università degli Studi – Parma

Information literacy and reflective learning

An action research project at the University of Parma

Contents

1. Introduction	p. 3
1.1. Overview	p. 3
1.2. Aims	p. 3
1.3. Objectives	p. 4
1.4. Research questions	p. 4
1.5. Framework and limitations	p. 4
2. Background	p. 5
2.1. The context	p. 5
2.2. The “Google generation”, information seeking and the research process	p. 5
2.3. Information literacy and reflective learning	p. 6
2.4. Librarians as reflective teachers	p. 6
3. Design and methodology	
3.1. Overall approach and rationale. Action research and qualitative research	p. 7
3.2. Research design	p. 8
3.3. Site population	p. 8
3.4. Data collection methods	p. 8
3.4.1. Data about students’ experience before, during and after the learning activity	p. 9
3.4.2. Data about the action research experience	p. 10
3.5. Data analysis	p. 10
4. Ethics	p. 11
5. Significance of the study and anticipated outcomes	p. 11
6. Bibliography	p. 12
7. Appendices	p. 19
7. 1. Appendix 1. Time scaling	p. 19
7. 2. Learning plan	p. 20

1. INTRODUCTION

1. 1. Overview

In today's knowledge-based society, the University plays the crucial role of supporting young people in becoming independent, critical, reflective lifelong learners. Information literacy education (IL) is a "catalyst" (Bruce 2002) that can empower students' learning. The cyclical, recursive nature of the research process promotes the development of higher order thinking skills, encourages critical reflection and fosters personal awareness, supporting individuals to engage themselves in self-directed learning.

In the field of information literacy, librarians have the opportunity to assume a more educational role and demonstrate their actual and potential contribution to students' learning and personal development. An integral involvement in the teaching functions of the University is becoming a strong imperative for academic librarians.

Action research (AR) offers a systematic approach for introducing innovations in teaching, providing librarians with opportunities to gather evidence about their own practice and to reflect on this evidence, with a view to changing future activities.

An action research project, focusing on the relationship between information literacy and reflective learning, will be carried out at the University of Parma. A group of undergraduate students will attend an information literacy educational activity rooted in the principles of "reflective learning". Their experience of information seeking and their perception of the research process will be investigated before, during and after the learning activity.

This project aims to bring together research and action. Research will be a means for promoting change in a teaching/learning activity. The activity will be evaluated, and the consequent reflections, rooted in practice, will produce new knowledge.

The broad plan of this action research project is the following:

- § the experience of information seeking and research process of 25 undergraduate students will be investigated;
- § a reflective IL learning activity will be designed and delivered;
- § the impact of this activity on students will be monitored and assessed;
- § the action research experience itself will be evaluated.

1. 2. Aims

The aims of this research are:

- § To support students in developing critical thinking skills and a reflective attitude through an information literacy educational activity.
- § To improve information literacy teaching practice on the basis of the findings of an action research project.
- § To provide evidence of the value of critical reflection for the improvement of teaching practice.

1. 3. Objectives

- § To explore experiences and attitudes of a group of students at the University of Parma in relation to the information seeking and the research process.
- § To plan, design and delivery a reflective information literacy learning activity.
- § To assess the impact of the learning activity on students' critical thinking skills and reflective attitude.
- § To analyse, evaluate and describe an action research experience in the field of information literacy.

1. 4. Research questions

This study aims to answer the following research questions:

- § How does a group of undergraduate students experience the information seeking and the research process?
- § What kind of impact an information literacy educational activity have on students' critical thinking skills and reflective attitude?
- § How can an action research project improve librarians' teaching activities?

1. 5. Framework and limitations

The action research project will be carried out at the Department of Environmental Science – University of Parma, the researcher's working place.

Twenty five students, enrolled in the Environmental Science degree course (2. year) will be involved in the research.

The project starts in September 2004 and lasts nine months (Appendix 1).

This proposal is set on the principle of flexibility. Although a working plan has been established and both the research activity and the teaching activity are accurately planned, the qualitative nature of this project suggests to build flexibility in the design. Moreover, possible unexpected events, affecting the academic activity and the students' availability, could require some changes in the general plan, forcing the researcher to allow for contingencies.

This is a small-scale project, specific to one group at one University, with no attempt to generalise its findings. Action research is therefore an appropriate approach, since the main aim is to achieve understanding of some issues by the immersion in one particular case.

2. BACKGROUND

2. 1. The context

Information literacy is about people's ability to operate effectively in an information society. This involves critical thinking, information evaluation, conceptualising information needs, making effective use of information in problem-solving, decision making and research [....]. We need something that emphasises reflective competence and the ability to continue to learn (Bruce 2002).

The society we live in requires people to be information literate. The rapid growth in the amount of information and the changes occurring in technology used to generate and disseminate that information are among the most visible and debated phenomenon of our time. To access, evaluate and use information in an effective and critical way is becoming a vital need in the world of the 21st century (World Summit on the Information Society 2003).

Information literacy is not only an essential competence for everybody living in a knowledge-based society, it is also one of the most effective learning activities for fostering students' critical thinking skills and developing a reflective attitude. The need to define a search strategy, to identify and access suitable sources, to locate and use information, to evaluate and synthesise findings, stimulates the development of higher order thinking skills (Breivik 1998; Rader 1997). Moreover, the cyclical, recursive nature of the research process requires learners to come back to their previous research steps, to assess their strategies, to change and try new methods, experiencing different approaches to knowledge (Kuhlthau 1993). This also stimulates learners to reflect on their own learning style and working method, to feel responsible of their educational process and to acquire control on it, which are the roots of lifelong learning (Schon 1993; Doyle 1995).

2. 2. The Google generation, information seeking and the research process.

A deep knowledge and understanding of learners is crucial in educational activities aimed to produce positive changes. Researchers and teachers must tune into students' culture, interests and experiences, and adapt programs and services to learners' changing needs and skills.

In the last few years a huge amount of research on the generation of students born in the Eighties has been produced. The Generation Y (Litten and Lindsay 2001) or Net Generation (Lorenzen 2002) or "Google Generation", is sketched as a community of people susceptible to what can be defined a "post-modern conditions" (Harley, Dreger et al. 2001; Wallis 2001). Consumerism, knowledge fragmentation and a disposition to superficiality are the main characteristics of those students, who usually favour short term convenience and often seem reluctant to lecture, memorisation, "busy work".

The "Google generation" students are used to adopt the Web as the main, and often unique source of information (O'Sullivan and Scott 2000). They consider themselves highly proficient in locating information (Brown, Murphy et al. 2003) but, although they seem able to use the Internet for responding to simple information needs, they often find it difficult to explore deeper concepts or determine if their answers are rigorous (Fosmire and Macklin 2002).

Some studies (grounded in the cognitive development theory) about the students' research process, (Fister 1992; Leckie 1996; Gatten 2004) show that undergraduates search in an unplanned and chaotic way, often by-passing the entire search design. Students often adopt a "coping strategy" more than an "information seeking" strategy (Bodi 2002). They always find the research process daunting and painful (Seamans 2002; McDowell 2002) and often appear experiencing difficulty in managing their time (Roth 1999; Thorpe 2000).

2. 3. Information literacy and reflective learning

In the current professional debate on IL, a basic idea is shared by many researchers: if librarians want their teaching activity to have a real impact on students learning, supporting them to become independent, critical thinkers, the focus of IL education must be on the research process rather than on information tools (Breivik and Gee 1989; Kuhlthau 1993).

The tool-based approach (providing students with instructions on “how to use” information sources) is likely to have a short-term validity, both because of the rapid changes occurring in technology and because this type of approach doesn’t involve students in “deep learning” (Edwards and Bruce 2002). It is not technical skills that make effective information users but rather the reflective and conceptual capabilities. What the “Google Generation” students need today, are educational programs that prepare them for the process of using information in different situations and help them become aware of their own process of learning (Kuhlthau 1993; Doherty, Hansen et al. 1999; Kuh and Gonyea 2003). The current debate around information literacy in fact, underlines its peculiarity as a “meta-cognitive activity”, that aims to

[...] ensure that individuals have the intellectual abilities of reasoning and critical thinking [...] and construct a framework for learning how to learn (Association of College and Research Libraries 2000).

The great challenge for teachers is to find methods that help learners discover their own problem-solving strategies and reflect on it, developing an “inquiring mind”.

Reflective learning is a highly valued means of dealing with complexities, challenges and uncertainties existing in personal and professional development. In reflective learning education it becomes important not only to find the “right” solution to an information problem, but to know what kind of questions to ask (Gatten 2004). The failure itself becomes a valuable tool for examination, reflection and focused efforts (Bicknell-Holmes and Hoffmann 2000). Self-awareness exercises can be used to encourage students to articulate their experience, and to think through their research process. By posing questions and reflecting upon their own learning activity, students become aware of the complexity of knowledge, developing a new way of thinking and a sense of personal agency (Isbell and Kammerlocher 1998; Mayer 2003).

2. 4. Librarians as reflective teachers

As more and more Universities are trying to create an effective IL learning experience that will prepare students for lifelong learning, librarians must document the value added of their instructional programs (Breivik 1999; Rader 2002).

In the last few years, librarians have started to recognise the need of moving away from a library and information retrieval centred view of information literacy, towards a “broader understanding” of its role, and the role of information professionals in fostering students’ learning.

We must shift the focus from librarians postulating what students need to know, to librarians supporting students to create their own paths towards information literacy (Dennis 2001).

Inquiry, problem solving, critical thinking, action research are the conceptual models in which information professionals have to develop their teaching activity in the future: the “research” we teach, must become “reflective research” (Sheridan 1990; Duskatsch 2003).

Effectiveness in the teaching role requires the convergence of pedagogical knowledge, information expertise, technological competence.

Librarians must engage critically with pedagogical paradigms adopted in higher education and demonstrate competence in course design and delivery (Fourie 2004; Owusu –Ansah 2004).

Moreover, reflective librarians must demonstrate capability of assessing their work and openness to new ways of structuring their teaching activity: producing research evidence substantiates librarians’ claim that their educational role benefits teaching and learning outcomes (Larrivee 2000; Kuit, Reay et al. 2001).

3. DESIGN AND METHODOLOGY

3.1. Overall approach and rationale. Action research and qualitative research.

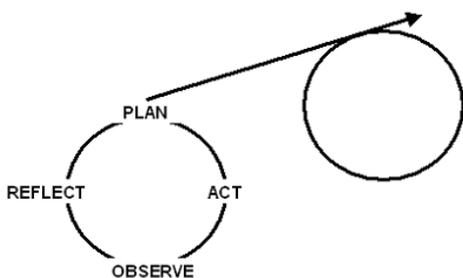
The purpose of research is generally understood as gathering data and interpreting them in order to generate new knowledge which can produce new theories. Qualitative research is acknowledged as the methodology that “delves in depth into complexities and processes” and therefore it is the most suitable methodology when the researcher aims to investigate human actions, feelings and values (Marshall and Rossmann, 1999).

Action research is a type of qualitative research that puts *action* at the core of the research project. It is both a way of producing knowledge about educational processes and a powerful way of improving teaching practice. McNiff (1988) defines AR

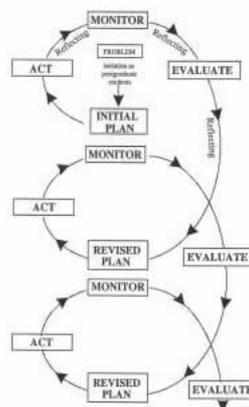
an approach to improving education through change, by encouraging teachers to be aware of their own practice, to be critical of that practice and to be prepared to change.

The teacher is put in the dual role of producer of educational theory and user of that theory. There is no separation between the design and the delivery of teaching and the process of evaluating these activities: theory and practice are brought together.

A variety of models of action research have been designed: their common feature is the recursive, iterative loop connecting problem identification, action planning, implementation, evaluation and reflection. Each cycle produces new insight on the situation and stimulates further observation, planning and action.



(Source: Stringer 1999)



(Source: Elliot 1991)

In the action research cycle, people learn and produce knowledge by critically reflecting upon their own actions and experiences. In this sense, the method of action research is very close to the concept of “reflective practitioner” (Schon 1993).

Action research seems particularly suited for librarians, as it allows them to experience the role of teacher, researcher and reflective practitioner all together, thus favouring reflection on the complex, “multitask” role that they are playing nowadays. Furthermore, having the opportunity to observe students in the library, we are in a favourable position for assessing our teaching activity. The research we do becomes an “evidence-based”, reflective research, grounded in teaching practice and in everyday library work.

3.2. Research design

Action research is considered a type of qualitative research, since it aims to generate theory which is fully grounded in the data. Naturalistic inquiry does not permit to design a detailed plan before the research starts, as it requires researchers to explore events and actions held by participants, test emerging interpretations and modify the data collection strategy on the basis of what has been learnt in the field.

Research design must therefore be played by ear: it must unfold, cascade, roll, emerge (Lincoln and Guba 1985).

However, there is a need to design a provisional, flexible plan, which will represent a framework for the researcher’s action and reflection.

3.3. Site population

A group of 25 undergraduate students enrolled in Environmental Sciences degree course (2. year) is the population of this research. The choice of this group is determined by the following considerations.

1. The Environmental Sciences course at the University of Parma, is the researcher’s working place, and it is therefore a site where entry is possible (Marshall and Rossman 1999). Moreover, this will favour follow-up observations of students’ learning.
2. The Environmental Sciences curriculum at the University of Parma requires 2. year students to enrol in a compulsory IL course. Learning outcomes, contents, activities and assessment criteria are defined in cooperation between the teacher/librarian and the academic staff. This is an important pre-requisite for the organization of a student centred, reflective IL activity (Grafstein 2002; Hine and Gollin 2002 ; Carder 2003).
3. The researcher, being in charge of the educational activity, is likely to be able to build trusting relationships with students and to gain co-operation from academic staff (Bruce 2001; Dennis 2001).

3.4. Data collection methods

The following data gathering methods are divided between

- § data about students’ experience of information seeking and research process before, during and after the learning activity;
- § data about the researcher’s experience of the action research project.

Adopting multiple data collection methods gives an added value to research findings, providing different ways of approaching the research problem and increasing the reliability of results (Strauss and Corbin 1998; Gorman 1997). Using multiple qualitative methods has the “potential to evoke unexpected data” (Marshall and Rossmann 1999).

3.4.1. Data about students' experience before, during and after the learning activity

Before the learning activity	During the learning activity	After the learning activity
Observation	Observation	Observation
Focus groups	Document analysis (students tasks)	In-depth interviews

Observation is a fundamental method in qualitative inquiry and is adopted for discovering complex interactions in natural social settings (Moore 2000). In action research, observation allows to check the changes occurring in students' behaviour during and after the learning activity (Elliot 1991; Stringer 1999). Before the learning activity, the observation will be absolutely unobtrusive and "holistic", aiming at identifying general trends and problems. During and after the learning activity it will be more focused on relevant aspects being identified and it will be likely to follow a checklist. Students will be observed while using the library and working in class.

Focus groups are frequently used at the initial stage of a study, because they can help researchers to generate hypotheses to be tested during the following phases. Active participation is encouraged by group interaction, since people often need to listen to others' opinions and feelings in order to express their own (Morgan 1997). In this project, focus groups have also the objective of introducing the researcher to the students and to present the following learning activity, fostering students' involvement.

In-depth interviews have been defined "a conversation with a purpose". Although highly time-consuming, they provide a huge amount of meaningful data. Combined with observation, interviews allow the researcher to understand the meanings and values that people hold (Denzin and Lincoln 1994). Students participating in the IL learning activity will be interviewed about their information seeking and research process immediately after the course and two months later, in order to investigate the occurring mid-term changes (Kunkel and Weaver 1996; Pausch and Pagliero-Popp 1997). Semi-structured interviews will be adopted, unless the ongoing findings or occurring events suggest to adopt a more structured type. The interviews will be tape-recorded and immediately transcribed and analysed.

Document analysis. During the IL learning activity students will be involved in individual and group works. Their papers will be analysed, providing evidence of students' learning.

3.4.2. Data about the researcher’s experience of the action research project

Before the learning activity	During the learning activity	After the learning activity
Reflective journal	Reflective journal Peer observation	Reflective journal Students’ feedback

Reflective journal. Since this project is grounded in the idea of critical reflection, both for students’ learning and for the researchers’ self-development, the reflective journal is an important tool enabling the documentation of experiences, thoughts, questions, ideas and conclusions (Patton 1990; Gorman 1997). At the initial stage, an unstructured recording will be adopted, while during the activity the journal is likely to become more organised, according to emerging themes and patterns.

Peer observation. One of the features of AR is that this is a “participatory” method. To ensure a multiple monitoring of the teaching activity, a “critical friend” will be involved to support the teaching activity (McNiff 1988; Paisey and Paisey 2003). Her role will be the one of observing both the teaching activity and the students’ participation in a detached way. She will be involved also in the assessment of students’ papers.

Students’ feedback will be acquired through the interviews. Students will be asked questions about the teaching activity and their opinions will be cross-referenced with those expressed by the “critical friend” and with the notes of the reflective journal.

3.5. Data analysis

As Patton (1990) states,

Qualitative evaluation inquiry draws on both critical and creative thinking – both the science and the art of analysis

Strauss and Corbin (1998) underline that the procedures adopted to provide standardization and rigor to the process of analysis should not be followed in a dogmatic way, but rather they must be used creatively and flexibly. For this reason, the data gathered during the fieldwork won’t be analysed using a specific software, but will be manually transcribed, listed and coded.

Being this project focused on reflection, the analysis of data is likely to be an ongoing, circular process, and will require a combination of different techniques. Because “emergence” is the foundation of grounded theory research, concepts and design will emerge from the data.

Miles and Huberman (1994) suggest several schemes for organising qualitative data. Graphics and schema will be adopted for ensuring reliability, but the analysis will be inductive, leaving space to serendipitous findings. Categories and themes emerging from the analysis will be coded and tested by cross-comparing and contrasting the meanings emerging from different data.

All the records will be kept, in order to ensure availability and reliability of the findings.

4. Ethics

Qualitative researchers should demonstrate a high level of sensitivity towards ethical problems just from the research design (Marshall and Rossmann 1999).

Students will be informed about the purpose, the contents and the modality of their participation. This one is voluntary and won't have any effect on the final assessment of the IL activity. Anonymity will be ensured.

5. Significance of the study and anticipated outcomes

The significance of this study lies in bringing together research, action and evaluation. Research on students' experience and learning needs is followed by a student-centred IL learning activity. The teaching and learning activity is evaluated with the purpose of gaining understanding and knowledge for promoting further improvements. The project itself is evaluated in the perspective of professional reflective practice.

This study could therefore represent a contribution to a better understanding of the "Google generation" students' approach to the information world and, at the same time, could lead to an improvement in IL teaching practice at the University of Parma.

The AR method is not a widespread one in the context of Italian academic libraries, where IL projects are increasingly being activated. The dissemination of this study's results, though not transferable, could bring about a growing of interest towards action research among librarians involved in teaching activities. This experience of students' reflective learning and librarian's reflective professional practice could therefore represent a prototype for future research..

6. Bibliography

Adams, D. L. (1993) Instructional Techniques for Critical Thinking and Life Long Learning in Science Courses. *Journal of College Science Teaching*, 23(4), p. 100-104.

American Association of School Librarians and Association for Educational Communications and Technology (1998) *Information Power: Building Partnerships for Learning*. Chicago, American Library Association.

Association of College and Research Libraries (2000) *Information Literacy Competency Standards for Higher Education*.

Available: <http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm>.

Atkinson, E. (2000) Behind the inquiring mind : exploring the transition from external to internal inquiry. *Reflective practice*. 1(2), p. 149-164.

Bergendahl, V. C. (2003) Action research as a means of professional development : reflections on research and action in university chemistry education. *Journal of in-service education*. 29(3), p. 363-374.

Bhattacharaya, B., J. Cowan, et al. (2000). Action research : a means to more effective teaching and learning. *Innovations in Education and training international*, 37(4), p. 314-322.

Bicknell-Holmes, T. and P. S. Hoffman (2000). Elicit, engage, experience, explore: discovery learning in library instruction. *Reference service review*, 28(4), p. 313-322.

Bodi, S. (1988). Critical thinking and bibliographic instruction: the relationship. *The journal of academic librarianship*, 14(3), p. 150-153.

Bodi, S. (2002). How do we bridge the gap between what we teach and what they do? Some thoughts on the place of questions in the process of research. *The journal of academic librarianship*, 28(3), p. 109-114.

Bowden, T. S. and A. Di Benedetto (2002). Information literacy in a biology laboratory session: an example of librarian -faculty collaboration. *Research strategies*, 18, p. 143-149.

Breivik, P. S. (1998). *Student learning in the information age*. Phoenix, Orix Press.

Breivik, P. S. (1999). Take II - information literacy: revolution in education. *Reference service review*, 27(3), p. 271-275.

Breivik, P. S. and E. G. Gee (1989). *Information literacy: revolution in the library*. London, American Council on Education ; MacMillan.

Brock Enger, K. (2002). Problem-based learning: evolving strategies and conversations for library instruction. *Reference services review*, 30(4), p. 355-358.

Brown, C., T. J. Murphy, et al. (2003). Turning techno-savvy into info-savvy: authentically integrating information literacy into the college curriculum. *The journal of academic librarianship*, 29(6), p. 386-398.

Bruce, C. (2001). Faculty-librarian partnerships in Australian higher education: critical dimensions. *Reference services review*, 29(2), p. 106-116.

Bruce, C. (2002). *Information literacy as a catalyst for educational change: a background paper. White paper prepared for UNESCO, the U.S. National Commission on libraries and information science and the National Forum on Information literacy.*

Available: <http://www.nclis.gov/libinter/infolitconf&meet/papers/bruce-fullpaper.pdf>.

Carder, L., P. Willingham, et al. (2001). Case-based, problem-based learning. Information literacy for the real world. *Research strategies*, 18, p. 181-190.

Carey, J. O. (1998). Library Skills, Information Skills, and Information Literacy: Implications for Teaching and Learning. *School library media research* 1.

Cooperstein, S. E. and E. Kocevar –Weidinger (2004). Beyond active learning: a constructivist approach to learning. *Reference Services Review*, 32(2), p. 141-148.

D'Angelo, B. J. (2001). Integrating and assessing information competencies in a gateway course. *Reference service review*, 29(4), p. 282-293.

D'Angelo, B. J. (2003). Using source analysis to promote critical thinking. *Research strategies* 18, p. 303-309.

Davis, M. (2003). Barriers to reflective practice. *Active learning in higher education*, 4(3), p. 243-255.

Dennis, N. (2001). Using inquiry methods to foster information literacy partnerships. *Reference services review*, 29(2), p. 122-132.

Denzin, N. K. and Y. Lincoln (1994). *The handbook of qualitative research*. Thousand Oaks, Sage.

Doherty, J. J., M. A. Hansen, et al. (1999). Teaching information skills in the information age: the need for critical thinking. *Library philosophy and practice*, 1(2).

Doskatsch, I. (2003). Perceptions and perplexities of the faculty-librarian partnership: an Australian perspective. *Reference service review*, 31(2), p. 111-121.

Doyle, C. S. (1995) Information literacy in an information society. *Emergency Librarian*, 22(4), p. 30-32.

Dupuis, E. A. (1998). The times they are A'changin': students, technology and instructional services. *Reference service review*, (Fall/Winter1998), p. 11-16.

Edwards, S. L. and C. Bruce (2002). Reflective Internet searching: an action research model. *The learning organization*, 9(4), p. 180-188.

Edwards, S. L. and C. Bruce (2004). The assignment that triggered change: assessment and the relational learning model for generic capabilities. *Assessment & evaluation in higher education*, 29(2), p. 141-157.

Elliot, J. (1991). *Action research for educational change*. Buckingham, Open University Press.

- Ennis, R. H. (2001) Critical thinking assessment. *Theory into practice*, 32(3), p. 179-186.
- Facione, P. A. (1998) Critical thinking: what is and why it counts.
Available: http://www.calpress.com/pdf_files/what&why.pdf
- Fister, B. (1992). The research process of undergraduate students. *The journal of academic librarianship*, 18(July 1992), p. 163-169.
- Fosmire, M. and A. Macklin (2002). Riding the active learning wave: problem based learning as a catalyst for creating faculty-librarian instructional partnership. *Issue in Science and Technology librarianship*
Available: <http://www.istl.org/02-spring/article2.html>.
- Fourie, I. (2004). Librarians and the claiming of new roles: how can we try to make a difference? *Aslib Proceedings*, 56(1), p. 62-74.
- Frantz, P. (2002). A scenario-based approach to credit course instruction. *Reference service review*, 30(1), p. 37-42.
- Fund, Z., D. Court and B. Kramarski (2002) Construction and application of an evaluative tool to assess reflection in teacher-training courses. *Assessment & evaluation in Higher education*. 27(6), p. 485-499.
- Gagné, R. (1985). *The conditions of learning*. New York, Holt, Rinehart & Winston.
- Gatten, J. N. (2004). Student psychosocial and cognitive development: theory to practice in academic libraries. *Reference service review*, 32(2), p. 157-163.
- Gorman, G. E. (1997). *Qualitative research for the information professional*. London, Library Association Publishing.
- Grafstein, A. (2002). A discipline-based approach to information literacy. *Journal of academic librarianship*, 28(4), p. 197-204.
- Gravett, S. (2004). Action research and transformative learning in teaching development. *Educational Action research*, 12(2), p. 259-272.
- Grimble, B. J. and T. D. Williams (2004). Students' perceptions of their information literacy skills in the media centre. *Library media connection*, (January 2004), p. 26-28.
- Hand, L. (1998). Tackling an accounting coursework assignment - action research on the student perspective. *Accounting education*, 7(4), p. 305-3223.
- Hardesty, L. (1999). Reflection on 25 years of library instruction: have we made progress? *Reference services review*, 27(3), p. 242-246.
- Harley, B. (2001). Freshmen, information literacy, critical thinking and values. *Reference service review*, 29(4), p. 301-305.
- Harley, B., M. Dreger, et al. (2001). The post-modern condition: students, the Web and academic library services. *Reference service review*, 29(1), p. 23-32.

- Heylings, D. J. And V. N. Tariq (2001). Reflection and feedback on learning: a strategy for undergraduate research project work. *Assessment & evaluation in Higher education*. 26(2), p. 153-164.
- Hine, A., S. Gollin, et al. (2002). Embedding information literacy in a university subject through collaborative partnerships. *Psychology learning and teaching*, 2(2), p. 102-107.
- Iannuzzi, P. (1999). We are teaching, but are they learning: accountability, productivity and assessment. *The journal of academic librarianship*, 25(4), p. 304-305.
- Isbell, D. and L. Kammerlocher (1998). Implementing Kuhlthau: a new model for library and reference instruction. *Reference service review* (Fall/Winter 1998), p. 33-44.
- Johnson, A. M. (2003). Library instruction and information literacy. *Reference services review*, 31(4), p. 385-418.
- Johnston, B. and S. Webber (2003). Information literacy in higher education: a review and case study. *Studies in higher education*, 28(3), p. 335-352.
- Kember D. et al. (2000). Development of a questionnaire to measure the level of reflective thinking. *Assessment & evaluation in Higher education*. 25(4), p. 381-395
- Knight, L. A. (2002). The role of assessment in library user education. *Reference service review*, 30(1), p.15-24.
- Kraft, N. P. (2002). Teacher research as a way to engage in critical reflection: a case study. *Reflective practice*, 3(2), p. 175-189.
- Kuh, G. D. and R. M. Gonyea (2003). The role of academic library in promoting student engagement in learning. *ACRL Eleventh national Conference*. Charlotte, North Carolina, USA.
- Kuhlthau, C.C. (1993) *Seeking meaning. A process approach to library and information services*. Norwood, N.J. Ablex.
- Kuit, J. A., G. Reay, et al. (2001). Experiences of reflective teaching. *Active learning in higher education*, 2(2), p. 128-142.
- Kunkel, L. R., S. M. Weaver, et al. (1996). What do they know? An assessment of undergraduate library skills. *The journal of academic librarianship* (November 1996), p. 430-434.
- Larrivee, B. (2000). Transforming teaching practice: becoming the critically reflective teacher. *Reflective practice*, 1(3), p. 293-307.
- Laurillard, D. (2002). *Rethinking university teaching*. London, Routledge.
- Leach, L. G. Neutze and N. Zepke (2001). Assessment and empowerment : some critical questions. *Assessment & evaluation in Higher education*, 26(4), p. 293-305.
- Leckie, G. J. (1996). Desperately seeking citations: uncovering Faculty assumptions about the undergraduate research process. *The journal of academic librarianship*, (May 1996), p. 201-208.

- Limberg, L. (1999). Experiencing information seeking and learning : a study of the interaction between two phenomena. *Information research* 5(1).
- Lincoln, Y. and E. G. Guba (1985). *Naturalistic inquiry*. Beverly Hills, Sage.
- Litten, A. and B. Lindsay (2001). Teaching and learning for the Generation Y. [Teaching and Learning from Generation Y A Presentation for ACRL- New England/NELIG Annual Program, Brandeis University June 1, 2001.](#)
Available : <http://www.wesleyan.edu/libr/nelig/2001/litten-lindsay/>
- Lorenzen, M. (2001). Active learning and library instruction. *Illinois Libraries*, 83(2), p. 19-24.
- Lorenzen, M. (2002). The land of confusion? High school students and their use of the World Wide Web for research. *Research strategies*, 18, p. 151-163.
- Lucas, U., P. Cox, et al. (2004). 'Who writes this stuff?' Students' perceptions of their skills development. *Teaching in higher education*, 9(1), p. 55-68.
- Mac Donald, M., A. J. Rathemacher, et al. (2000). Challenges in building an incremental, multi-year information literacy plan. *Reference services review*, 28(3), p. 240-247.
- Macklin, A. S. (2001). Integrating information literacy using problem-based learning. *Reference services review*, 29(4), p. 306-313.
- Marshall, C. and G. B. Rossmann (1999). *Designing qualitative research*. Thousands Oaks, Sage.
- Mayer, M. (2003). Living at the border: between multiculturalism, complexity and action research. *Educational action research*, 11(2), p. 213-231.
- McAlpine, L. (2004). Designing learning as well as teaching. *Active learning in higher education*, 5(2), p. 119-134.
- 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), p. 255-266.
- McNeer, E. (1991). Learning theories and library instruction. *The journal of academic librarianship*, 10(1)(294).
- McNiff, J. (1988). *Action research: principles and practice*. London, Routledge.
- Miles, M. and A. Huberman (1994). *Qualitative data analysis*. Thousand Oaks, Sage.
- Moore, N. (2000). *How to do research. The complete guide to designing and managing research projects*. London, Library Association Publishing.
- Morgan, D. L. (1997). *Focus groups as qualitative research*. Newbury Park, CA, Sage.
- Orr, D., M. Appleton, et al. (2001). Information literacy and flexible delivery: creating a conceptual framework and model. *Journal of academic librarianship*, 27(6), p. 457-463.

- O'Sullivan, M. and T. Scott (2000). Teaching Internet information literacy : a critical evaluation. *MultiMedia Schools* .
Available : <http://www.infotoday.com/MMSchools/mar00/osullivan&scott>.
- Owusu-Ansah, E. K. (2004). Information literacy and higher education: placing the academic library in the centre of a comprehensive solution. *Journal of academic librarianship*.
- Paisey, C. and N. J. Paisey (2003). Developing research awareness in students: an action research project explored. *Accounting education*, 12(3), p. 283-302.
- Parker, J. (2003). Putting the pieces together: information literacy at the Open University. *Library management*. 24(4/5), p. 223-228.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park, CA, Sage.
- Pausch, L. M. and M. Pagliero Popp (1997). Assessment of information literacy : lessons from the higher education assessment movement.
Available: <http://www.ala.org/ala/acrlbucklet/nashville1997pap/pauschpopp.html>.
- Petterson, C., J. Sumsion, et al. (2002). Teaching as inquiry : engaging pre-service teachers with research. *J* 28(2), p. 21-25.
- Piaget, J. (1969). *Science of education and the psychology of the child*. New York, Viking.
- Pickard, A. J. (1998). The impact of access to electronic and digital information resources on learning opportunities for young people: a grounded theory approach. *Information research*, 4(2).
- Rader, H. B. (1997) Educating students for the information age: the role of the librarian. *Reference services review*, 25(2), p. 47-52.
- Rader, H. B. (2002). Managing academic and libraries partnerships. *Library Management*, 23(4/5), p. 187-191.
- Raquepau, C. A. and L. M. Richards (2002). Investigating the environment: teaching and learning with undergraduates in the sciences. *Reference service review*, 30(4), p. 319-323.
- Ray, K. and J. Day (1998). Students' attitudes towards electronic information resources. *Information research* , 4(2).
- Reagan, T. G., C. W. Chase and J. W. Brubacher (2000). *Becoming a reflective teacher*, Thousands Oaks, Corwin press.
- Riding, P., S. Fowell, et al. (1995). An action research approach to curriculum development. *Information research*, 1(1).
- Robotham, D. (2004). Using interviews in researching student learning: a true and valid account? *Teaching in higher education*, 9(2), p. 225-233.
- Roth, L. (1999). Educating the cut-and paste generation. *Library Journal*, 124(18), p. 42-44.
- Rowley, J., K. Ray, et al. (2004). Using action research to investigate the use of digital

information resources in further education. *Journal of further and higher education*, 28(3), p. 235-246.

Schon, D. A. (1993). *Il professionista riflessivo : per una nuova epistemologia della pratica professionale*. Bari, Dedalo.

Seamans, N. A. (2002). Students perceptions of information literacy : insights for librarians. *Reference services review*, 30(2), p. 112-123.

Sheridan, J. (1990). The reflective librarian: some observation on bibliographic instruction in the academic library. *The journal of academic librarianship*, 16: 23.

Strauss, A. and J. Corbin (1998). *Basics of qualitative research*. Thousands Oaks, Sage.

Stefani, L. A. J., J. Clarke and A. H. Littlejohn (2000). Developing a student-centred approach to reflective learning. *Innovations in education and training international*, 37(2), p. 163-171.

Stringer, E. T. (1999). *Action research*. Thousand Oaks, Sage.

Taras, M. (2002). Using assessment for learning and learning for assessment. *Assessment & evaluation in Higher education*. 27(6), p. 501-510.

Thorpe, M. (2000). Encouraging students to reflect as part of the assignment process. *Active learning in higher education* 1(1), p. 79-92.

Tsui, L. (1999). Courses and instruction affecting critical thinking. *Research in Higher education*, 40(2), p. 185-200

Valentine, B. (1993). Undergraduate research behaviour : using focus groups to generate theory. *The journal of academic librarianship*, 19, p. 300-304.

Vidmar, D. J. (1998). Affective change: integrating pre-sessions in the students' classroom prior to library instruction. *Reference service review*, (Fall/Winter 1998), p. 75-95.

Vygotsky, L. (1978). *Mind in society*. Cambridge, MA, Harvard University Press.

Wallis, J. (2003). Information-saturated yet ignorant: information mediation as social empowerment in the knowledge economy. *Library review*, 52(8), p. 369-372.

Warner, D. A. (2003). Programmatic assessment: turning process into practice by teaching for learning. *The journal of academic librarianship*, 29(3), p. 169-176.

Williams, H. and A. Zald (1997). Redefining roles: librarians as partners in information literacy education. *Information research*, 3(1).

Wilson, T. D. (2000). Recent trends in user studies: action research and qualitative methods. *Information research*, 3(5).

World Summit on the Information Society (2003). Building the Information Society: a global challenge in the new millennium. Declaration of principles.

Available: http://www.itu.int/dms_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0004!!PDF-E.pdf.

Appendix 1.

TIME SCALING									
	July 1-30	Aug. 1-30	Sept. 1-30	Oct. 4-9	Oct 6-Dec.15.	1-30 Jan	1-28 feb	1 Mar-30 Mar	1 Apr. 1 Jun
Planning									
Literature review - Reflective journal									
Analysis of research problem, choice of methodology, identification of sample									
Research proposal									
Fieldwork									
Focus Groups and Observation									
Observation and Focus group pilot 1-15 sept.									
Focus groups reunions 14, 16, 21, 23, 29 Sept									
Analysis of findings from focus groups									
Learning activity									
Peer observation									
Fieldwork									
Interviews 1. Phase									
Pilot 6-8 Oct									
Interviews 11 Oct - 15 Nov									
Analysis of finding from Interviews 15 Nov.-15 Dec.									
Analysis									
Cross analysis (FocusG. Interviews, Observation)									
Fieldwork									
Interviews 2. Phase (elite interviews)									
Interviews 1-28 feb.									
Analysis									
Global analysis									
Research report									