

What Underpins Effective Inquiry?

Rachel Spronken-Smith, Rebecca Walker (University of Otago), Billy O'Steen (University of Canterbury), Julie Batchelor, Helen Matthews (Christchurch Polytechnic Institute of Technology) and Tom Angelo (University of Victoria)

Introduction

“Tell me and I forget, show me and I remember, involve me and I understand.”

Inquiry based learning (IBL) was popularised by the American educator and philosopher John Dewey as “learning by doing” (Dewey 1933). Although a contested field, most researchers agree core ingredients of an IBL approach are:

- ❖ Learning stimulated by inquiry, i.e. driven by questions or problems
- ❖ Learning based on a process of seeking knowledge and new understanding
- ❖ A student-centred approach to teaching in which the role of the teacher is to act as a facilitator
- ❖ A move to self-directed learning with students taking increasing responsibility for their learning
- ❖ Development of skills in self-reflection

Students engaged in IBL should develop valuable research skills and be prepared for life-long learning. Particular learning outcomes include critical thinking, the ability for independent inquiry, responsibility for own learning and intellectual growth and maturity (Lee et al., 2004)

The inquiry model (Fig. 1) demonstrates the cycle of knowledge construction in IBL. Core to the process is an attitude of self-reflection and evaluation.

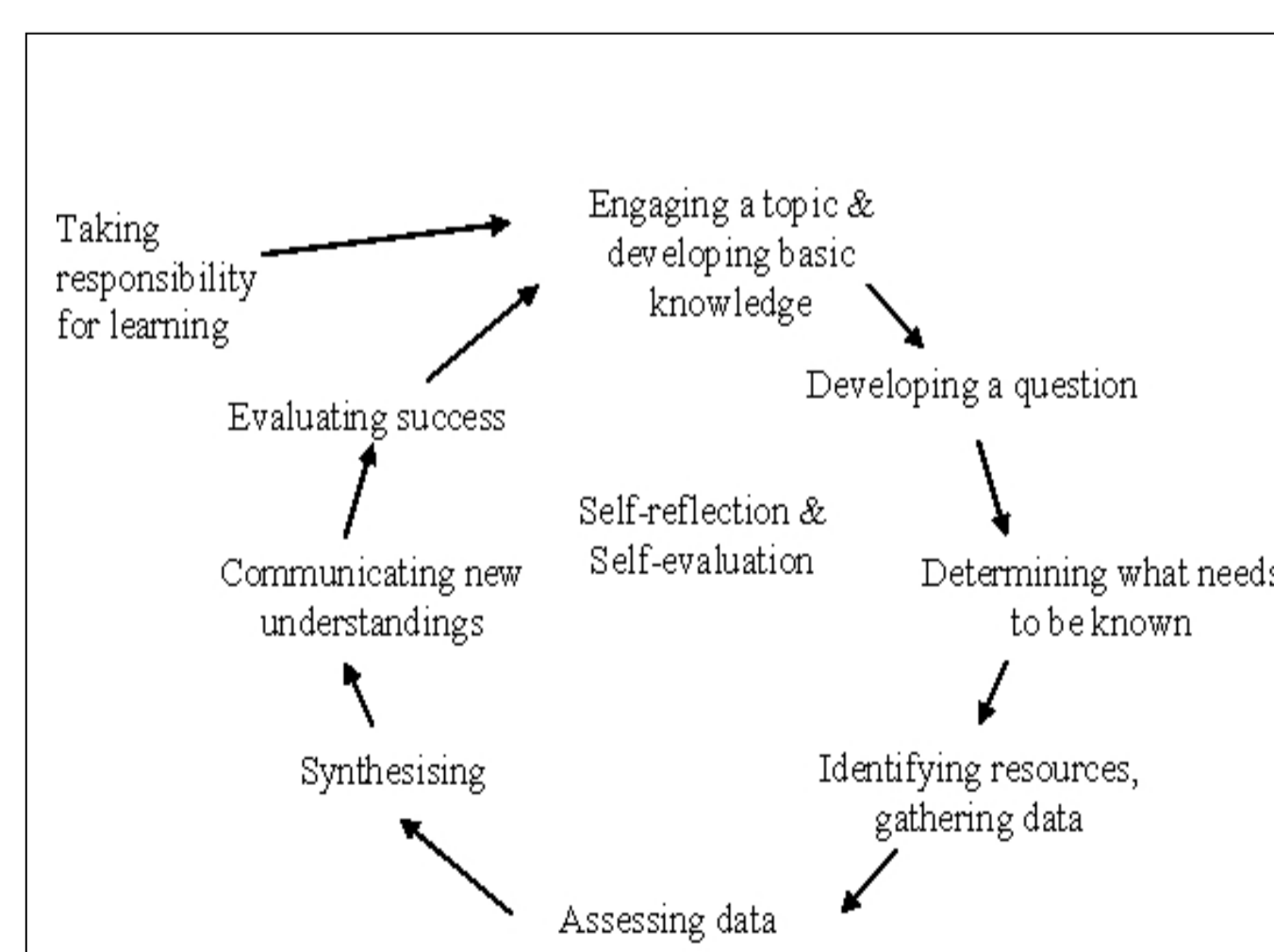


Figure 1: Model of the inquiry process (Justice et al., 2002:19).

Aims

- ❖ To determine factors that promote the effective use of inquiry
- ❖ To identify challenges to the effective use of inquiry

Method

This project employed:

- ❖ A multi-institutional, qualitative case study approach
- ❖ Fourteen cases of inquiry across four institutions including the Christchurch Polytechnic Institute of Technology (CPIT) and the Universities of Canterbury, Otago, and Victoria (Table 1)

Table 1: Case studies in inquiry-based learning project

CPIT	Canterbury	Otago	Victoria
Level 4 paper in Fashion Technology & Design Certificate, Project	Stage 1 Sociology Course	Stage 2 Political Communication Course	Stage 1 History Course
Second year paper in Bachelor of Adventure Recreation & Outdoor Education	Stage 1 Engineering Course	Stage 3 Endocrinology Module	Stage 1 Psychology Course
Second year paper in Bachelor of Broadcasting Communications	Stage 3 Communication Disorders	Stage 3 Ecology Field Course	Stage 2 Architecture Course
		Ecology Degree	Stage 3 International Business Course

- ❖ Data collection using survey instruments, interviews, focus groups and observations
- ❖ Exploration of cases from three perspectives:
 - teacher/course designer
 - students
 - course/activity documentation
- ❖ Thick description of individual case studies
- ❖ Cross-case thematic analysis

Factors underpinning effective inquiry

Teacher attributes

In all cases teachers demonstrated:

- ❖ A student-centred teaching philosophy
- ❖ Commitment to striving for higher order student learning outcomes
- ❖ Excellent rapport with students
- ❖ They were reflective practitioners who continually sought feedback on student learning, with a view to improving the course

Factors underpinning effective inquiry cont.

Teacher attributes cont.

In most of our cases, teachers:

- ❖ Were concerned students learned about processes, particularly research, rather than a set body of knowledge
- ❖ Encouraged students to think as disciplinary experts – as engineers, broadcasters, architects, or ecologists
- ❖ Had a formal teaching qualification, or sought support of academic staff developers in designing their IBL courses

Some of the teachers were rebellious, subverting:

- ❖ Traditional timetables, using fewer contact hours
- ❖ Physical teaching spaces to allow discussion/group work
- ❖ Usual assessment practices

Course design attributes

All inquiry courses and activities:

- ❖ Used open-ended questions
- ❖ Had strong alignment of course objectives / learning outcomes, with teaching methods and assessment regime
- ❖ Demanded engagement from students through preparation for and participation in inquiry sessions

Most inquiry courses required:

- ❖ Collaboration amongst students
- ❖ Students to undertake primary research, appropriate to the level of study
- ❖ Elements of student choice that provided motivation and interest for students to engage in the tasks
- ❖ Low contact hours to allow students to undertake self-directed learning
- ❖ High workloads as students became “immersed” in study
- ❖ A progression of increasingly complex tasks, to ensure students developed foundational skills that were built upon until they were equipped to undertake independent research

Department and institutional attributes

- ❖ Ideally IBL permeated the entire degree programme
- ❖ Easier to implement IBL if supported at department/school level, including senior management
- ❖ Staff developers played a key role in informing, inspiring and supporting teachers in IBL development

Barriers and challenges to inquiry

❖ Gaining philosophical buy-in and confidence in inquiry approaches; initial reactions to IBL include fear, anxiety, stress, uncertainty and discomfort

Ways to overcome include;

- education such as postgraduate certificates and staff developers working one-on-one with staff
- experienced colleagues provide mentoring support
- community of practice amongst the teaching team
- involve teaching team in the planning stages, to allow widespread ownership

❖ Inducting students into inquiry approaches by scaffolding progressive development of inquiry skills

❖ Low contact hours mean time is spent in preparation and framing of inquiry tasks, rather than in delivery mode

❖ Becoming “redundant”, as students’ abilities to undertake independent research increase, can be unsettling

❖ Collaborative learning in competitive courses was sometimes felt by students to stifle creativity

❖ Coping with varied assessment products due to student choice of topic, and sometimes the products themselves

❖ Department and institutional barriers including;

- institutional norms for timetabling and work space
- gaining acceptance of inquiry approaches by staff
- recruiting sufficient tutors in an environment focused on research and PBRF outputs

Ways to overcome include;

- showcasing good practice and highlighting achievements of IBL courses to garner support
- Demonstrating that IBL supports PBRF by grooming future postgraduate research students

References

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