

Inquiry learning with senior secondary students: yes it can be done

Jill Stotter

Takapuna Grammar School, PO Box 33-1096, 210 Lake Rd. Takapuna, 0622, Auckland, New Zealand. Email: j.stotter@takapuna.school.nz

Kirsty Gillon

Takapuna Grammar School, PO Box 33-1096, 210 Lake Rd. Takapuna, 0622, Auckland, New Zealand. Email: k.gillon@takapuna.school.nz

Abstract

This workshop will model for classroom teachers, one way to plan, teach, resource and assess inquiry-based learning which encompasses the guiding principles of a newly gazetted curriculum. The vision of the New Zealand curriculum is to produce "...young people who will be confident, connected, actively involved lifelong learners" (p. 8). This is further supported by a strong focus on the importance of student attitudes and values, plus the five Key Competencies that need to be embedded into all learning and teaching in New Zealand schools.

Introduction

At a time when educators all over the world are grappling with issues of senior student motivation, student participation in their own learning, and changes to teaching practice resulting from increasing use of a range of technologies, the challenge for teachers to maintain or increase standards in national examinations are immense. This workshop focuses on just how these challenges are being met by two New Zealand teachers as they work through two set topics for NCEA level 1, *The Origins of World War 2* and *Black Civil Rights in America*.

Kirsty Gillon is head of the History department at Takapuna Grammar School. She is an extremely experienced and creative teacher, always looking for new ways to enable high quality teaching and learning to happen. She has co-written and published a book for teachers called *Do Less Do It Better*. Jill Stotter is the teacher-librarian at Takapuna Grammar, an experienced secondary English teacher and a trained teacher-librarian. Both teachers have strong belief in the values of inquiry learning and the teaching style required for successful inquiry learning. They believe that it is through an imaginative inquiry approach that the competencies necessary for exciting, cross-curricular, innovative problem solving can be developed and honed for 21st century teaching and learning.

What is creative inquiry-based learning?

It may be easier to say what creative inquiry *is not* than what it *is*. It is not providing a research assignment with a due date and two periods in the library. It is not a chance for teachers to take a breather while the kids are 'finding out' stuff. It is not necessarily something that takes a long period of time to complete. It is not an opportunity for parents to show off their learning and technical prowess. It is not a case of a parent coming to the rescue of their beleaguered child to do a last minute project (although we've all done it). It is not a once a year exercise. It is not huge and it is not hard to organise.

Inquiry is a way of thinking. It is a way of approaching new knowledge. It should imbue every activity in your classroom. It is a skill for life. Inquiry-based learning should be awash with creativity. Questions should be wide, encompassing of many disciplines and excite a need to know. Research should be unconfined and should involve both the arts and sciences. The products that students produce to demonstrate their understanding should be more than writing a report. Art, music, drama, science, Web 2.0 can all be part of the student presentation. Teachers need to be creative too and realise that assessment can and should take many forms.

An inquiry-based classroom has questioning at its hub. In an inquiry learning classroom, students have a command of questioning and an understanding that questions are keys that unlock knowledge and that each key opens a different *type* of knowledge. The classroom will have a natural buzz of inquiry on every topic.

© 2010 IASL, SLAQ and therein by the authors. *Diversity Challenge Resilience: School Libraries in Action* Proceedings of the 12th Biennial School Library Association of Queensland, the 39th International Association of School Librarianship Annual Conference incorporating the 14th International Forum on Research in School Librarianship, Brisbane QLD Australia, 27 September – 1 October 2010.

This does not mean, however, that lessons lack structure or guidance. Inquiry-based learning is very structured and has degrees of scaffolding. There are many models of inquiry but the most powerful is the one that you and your students create together.

A basic model of inquiry has been around for many years and follows a general supported sequence of:

- immersion in the topic;
- student and teacher questioning;
- a process of finding out and sorting the findings;
- a process where students make a presentation to be communicated, and
- evaluation.

All of this is underpinned by ongoing reflection.

However, in the 21st century, there is an additional and fundamental step – ‘taking action’. It is no longer good enough for students to ‘find out’ stuff and then do nothing with it. Students need to act upon their findings – whether that is through sending emails, creating a new technology, helping in the community or reporting to the assembly. In other words, students must *do* something with the findings of their inquiry that relates to the real world and in real time.

Evaluation is the final step. This is where students evaluate the entire process and learn from their experience. Their evaluation should lead them to be able to make worthwhile changes and improvements to their next inquiry. It is a scaffolded and iterative process.

Why creative inquiry?

Creativity is the hidden competency in the New Zealand curriculum. It underpins all of the key competencies. If the creative juices are not stimulated in students then they will dry up and blow away. Creative inquiry will foster imagination, nurture it and give us the people of the future who will be able to find a way forward in the world that they inherit from us. Students are encouraged through the inquiry process to wake up and utilise both sides of the brain – both the left and analytical side and the right and creative side.

Creativity is the first key point of the New Zealand curriculum. “Our vision is for young people who will be creative, energetic and enterprising” (p.7). Creative inquiry gives students and teachers opportunities to reach their potential as it requires whole brain learning. In creative inquiry, the questions are genuine, student-based wonderings and relate to authentic situations. Presentations are innovative and engaging. Actions taken involve lateral thinking in order to find on-going solutions.

The New Zealand curriculum

New Zealand schools have been given a world class curriculum, drawn up from vast amounts of international research and consultation. The curriculum insists that learners and their teachers move on from rote learning facts to engendering the wisdom to know what to do with the said facts. It plugs some important gaps in teaching and learning. For the first time ever, there is a section on pedagogy which tells teachers ‘how’ they should be *teaching*. Using prior knowledge, encouraging reflective thought and action, encouraging students to work in teams, using authentic contexts including family and community - in other words, inquiry learning.

It also tells teachers how students should be *learning*. Through managing self by planning and organising projects, using language, symbols and text to communicate information, thinking and developing intellectual curiosity, creating knowledge, participating and contributing to community, and relating to others – in other words, inquiry learning.

The principles of the curriculum also lend themselves to the fundamentals of inquiry-based learning. Personal excellence, reflection, coherence across learning areas and future focus are all critical to the inquiry

process. And if that is not enough, the values also include reference to excellence, innovation, inquiry and curiosity. The values also refer to community and participation. Without overtly stating it, the New Zealand curriculum is asking us, and allowing us, to adopt creative, inquiry-based learning. The key phrase to describe this curriculum is that it is *future focussed*.

Rationale

We planned to dispel the myths surrounding learning and teaching in our Senior School. We believed we were supported by the new national curriculum for all the reasons stated above. Teaching practice was being asked to change. A new teaching style was being introduced and promoted. Learning was to become more democratic and interactive, allowing senior students to have greater participation in their own learning. Teachers were being asked to base their teaching practice on a proven learning and teaching model with a sound academic base going back to major educational theorists such as Dewey, Bruner, Piaget and Vygotsky and on to Kuhlthau, Todd et al.

However, what we discovered is that the front end of the national curriculum is way ahead in its visioning and thinking than the 'back end' of the curriculum. What will this change to teaching practice actually look like in the classroom? Of course many of us here will have carried out extremely successful and high quality research assignments using an information process that will answer to the name of inquiry learning in the Junior and Middle Schools, but the brakes always go on once students reach national assessment levels.

With this in mind, our questions now are:

- How can this impasse be managed? Will it ever be managed?
- Why is our national curriculum saying one thing about pedagogy but maintaining the status quo for assessment?
- Where is the training for teachers?
- Will it ever be possible for teachers to teach and students to learn in an interactive and democratic way in their senior school years?
- How can we make this change to teaching and learning with senior students work here at Takapuna Grammar?

We decided to put our energies into this last question.

Making creative inquiry-based learning work in the junior school (Years 9-10) is fairly straightforward, but making it work in the senior school is considered problematic. Even with our visionary curriculum we are bound by national standards which are assessed both internally and externally in a formal exam situation. The exams themselves are prescribed and fairly rigid. Our brief was to have a class tackling its usual subject matter but in an inquiry based format *and* to be well prepared for formal examinations. We decided to make it work.

With a mainstream Year 11 History class of 21, 15-16 year old students and using the principles of inquiry learning, we applied them to the topics being studied - *The Origins of World War 2* and *Black Civil Rights in America*.

Methodology 1

International relationships: the origins of World War 11

The first constraint we encountered was the FQs which guide the topic:

The Origins of World War 2

FQ1

What attempts were made to establish a permanent peace after World War One?

FQ2

What challenges to peace occurred in the 1930s?

FQ3

Why did war break out?

These FQs are fixed for internally assessed topics

Kirsty started the first session with the inevitable brainstorming question - What do you know already about the origins of World War 2? Not a lot, as we discovered. Students had all the usual knowledge of some battles, who was involved with the atomic bomb, but little understanding of the history behind the actual war. Saturation began: documentaries, documents, maps, movies, novels, and speakers. This all happened in the classroom until the students began to develop some facts and knowledge about the topic. A Wonderwall was set up and students wrote up further questions they had. This is the stage at which we realised that with a tightly *internally-assessed* only topic, our hopes of carrying out true independent inquiry learning was quickly fading. For assessment purposes the independent assignment work for *The Warsaw Ghetto* had been pre-ordained with the Level One Focus Questions firmly in place. Students at this stage of their education will always ask that question, 'Will this be in the exam?' or 'Will this help me in my assessment?' For an internally-assessed and nationally-moderated piece of work, any deviation from the set process for this topic was out of the question. There was just no room for pursuing any independent line of inquiry. We decided then to continue working through this topic in the prescribed manner, carefully documenting the process all the way through. We would then use this as a basis for comparison with the next topic.

Social change: *Black Civil Rights in the USA 1954-1970*

Black Civil Rights in the USA 1954-1979

FQ1

What position did Blacks hold in American society in the mid- 1950s and why were there moves to bring about change?

FQ 2

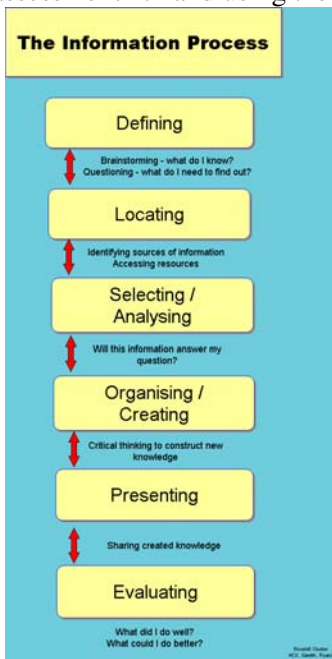
How did Blacks attempt to bring about change, 1955-1965?

FQ3

What new directions were pursued in the 1960s?

It is from these focusing questions that the exams are set.

Throughout this work we will follow a basic 6-step information process, adapting our teaching to fit the assessment 1.4 and using the intervention process (Kuhlthau, 2007) when skill teaching was needed.



© 2010 IASL, SLAQ and therein by the authors. *Diversity Challenge Resilience: School Libraries in Action* Proceedings of the 12th Biennial School Library Association of Queensland, the 39th International Association of School Librarianship Annual Conference incorporating the 14th International Forum on Research in School Librarianship, Brisbane QLD Australia, 27 September – 1 October 2010.

Fig. 1 The process with explanation of stages

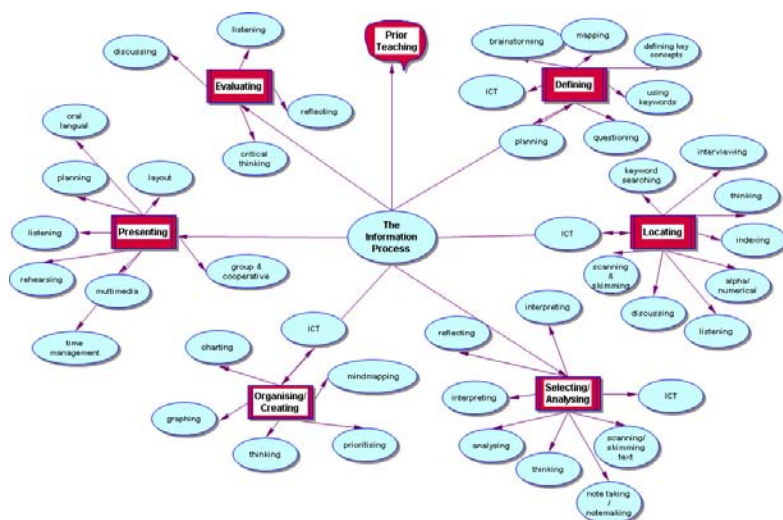


Fig. 2 Information skills taught at each stage of the process.

Methodology 2

Social change: *Black Civil Rights in the USA 1954-1970* (externally assessed by examination)

Day 1

Introduce topic. Film and discussion filmed

Day 2

Brainstorming for ideas – 3 minutes, all ideas included

- Think, pair, share
- Title on blank sheet - Black Civil Rights in the US 1954-70 – own brainstorm
- Class in small groups – group brainstorm
- Whole class brainstorm

Small group mindmap – mapping all the information – samples on film each group presents their mindmap to class.

Intervention: Teach skills of mindmapping, categorising, identifying keywords. Research Pathfinders given out and glued into students' books. Blown up version of model on the classroom wall with times attached.

Key Concept: Why are we learning about Black Civil Rights? What is the point? Students need to understand that this learning counts for more than their Level 1 assessment. Our job is to elicit reasons to do with self knowledge and understanding of world order and history.

Presentation mode & Audience. Groups decide how they will present their information and who will be their audience. As they will be teaching their peers and giving them important information, presentation modes will be simple, clear and easy for students to gather information and understanding from, i.e. limited choices (in this case).

Poster with clearly labelled information, model with detailed explanation, Powerpoint with controlled number of slides and effects, and booklet with illustrated content, movie or interview. Discuss the importance of planning - time management, group management, self management. Each group works out a timetable starting from due date of presentations.

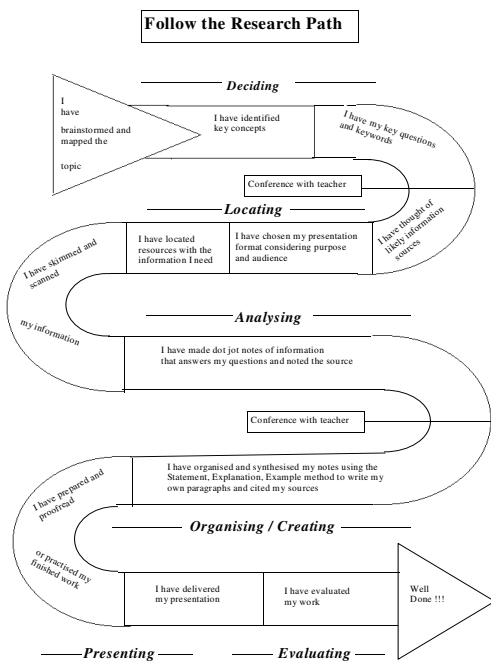


Fig. 3 Generic Research Path with teacher conference points built in

Days 3 & 4

Using exam questions from previous years as a guide, we took the keywords from each question printed them on small pieces of card – one pile for each group (7 small groups). Each group then had to write 2 questions of sufficient quality to become essay questions for this Level 1 topic.

Intervention: Guiding students to compose their own quality questions. Each essay topic contains 2 parts, e.g. groups and actions or problems and responses, or methods and changes, etc. The 2 questions need to convey those ideas and be robust enough to provide quality new information.

Days 5-7

Locating information – students work together to identify a range of information sources. Electronic, print, people, organisations, etc.

Intervention: whole class learning about databases, best practice searching skills, keyword use pinpoint and narrow the search.

Days 6-8

Selecting & analysing information

Intervention. Only the information to answer their 2 questions. Notetaking. Short lesson will be given on Dot Jot Notetaking process using simple text. Stress need for citing sources correctly. Model this.

Synthesising their jots to form a paragraph of information. This notetaking practice will be useful also for taking notes during the presentation time.

We will need to be alert to the type of information gathered. Is it at the yr.11 level? Is it relevant to the question asked? Will it be relevant to the final exam essay?

The expectation is that each group will answer their 2 questions with enough information to complete an essay of around 1000 words.

Days 9-10

Organising information to create new knowledge

Intervention: How this is done and the skills needed to be taught will depend on how the group is planning to present their new knowledge. Each group will need different teaching here but there are 2 of us in the room. Graphing, mind mapping, charting, multimedia etc.

Days 11-15

Presenting and sharing of new knowledge

Intervention: Generic presenting skills such as voice projection, eye contact, management of multi media while speaking, use of cards, responding to questions, time management, etc. will be taught and practised. The art of practice or rehearsal to achieve high standards will be discussed and agreed to. Students will take notes and ask questions through each of the presentations to ensure they have knowledge about each of the FQ areas of the topic. There has been no fact teaching. Revision of note taking strategies beforehand. This will be their main access to the information. Rough notes were remade into study notes as homework after each presentation and looked at by the teachers.

Days 16-17

Reflecting and evaluating

Self – done with tick sheet measuring self on continuum of success, interest, future actions

Peer – students mark their peers according to 5 given criteria

Formative – students graded through the process

Summative – presentations marked for group work. Practice essay for outside examination.

Intervention: Teach conventions of discussion – group and whole class

Discuss realistic marking – being able to justify

Days 17-18

Taking action

Transferring the issue/problem across countries and cultures. What could New Zealand students do?

Discussion groups, decision, whole class decision on action.

Summative essays were written individually at the very end of the process to be handed in by the end of the term (see examples). We provided a ‘safety net’ for all students by providing an overview sheet of the topic. See example. We felt this to be necessary for some who might be disadvantaged in their exams by the process we used.

Conclusion

At the time of writing, the topic is only just beginning and will not be completed until the end of the term.

References

Kuhlthau, Carol et al. (2007). *Guided Inquiry: Learning in the 21st century*. Westport CT: Libraries Unlimited.

Ministry of Education. (2007). *New Zealand curriculum*. Learning Media, Wellington, New Zealand.

Pope, J. & Gillon, K. (2009). *Do less do it better. Making the New Zealand curriculum work in secondary schools*. Hatbox Publications, Auckland, New Zealand.