

Approaches to Learning

INQUIRY BASED LEARNING

Introduction

Inquiry based learning is a broad pedagogical approach which has enjoyed widespread support by educators and education systems over the past decade. Inquiry can be defined as 'seeking for truth, information or knowledge / understanding' and is used in all facets and phases of life. Specific processes of inquiry have become central to knowledge building or truth seeking in a range of learning domains (e.g. Scientific method) and professions (e.g. Criminal investigations).

"The meaning of 'knowing' has shifted from being able to remember and repeat information to being able to find and use it."

(National Research Council, 2007)

<http://www.teachinquiry.com/index/Introduction.html>

What is inquiry? – The Characteristics

Inquiry based learning is a constructivist approach where the overall goal is for students to make meaning. While teachers may guide the inquiry to various degrees (externally facilitated) and set parameters for a classroom inquiry, true inquiry is internally motivated. Inquiry based learning is an umbrella term that incorporates many current learning approaches (including project based learning, design thinking) and may take various forms, depending on the topic, resources, ages and abilities of students and other variables. However the following are characteristics that serve as hallmarks of inquiry based learning:

- **equal emphasis on process** (communicating, reflecting, collaborating, analysing, etc) and content.
- **genuine curiosity, wonderment and questioning** (by teachers AND students) are central
- **student 'voice' is evident** – elements of the curriculum / learning are negotiated and student questions are taken seriously and addressed
- **prior knowledge is ascertained** and built upon – formative assessment and subsequent planning is essential
- **significant concepts and essential questions** are identified which unify knowledge and understandings
- **students are actively involved in constructing understandings** through hands-on experiences, research, processing and communicating their understandings in various ways
- **learning takes place in a social context** – students learn from each other, together with others, and from those outside of the classroom context
- there is an assumption that **understandings are temporal and are constantly reviewed and refined** on the basis of new learning and questions – therefore inquiry is 'recursive' in nature
- **reflection, metacognition and depth of thought** are valued and planned for

- **assessment is ongoing** and clear criteria link performances / products to rigorous curriculum goals
- **learning leads to action** – informing / sharing with others, implementing change, advocacy or taking up further questions or learning.

Inquiry Processes

There are numerous processes and models for inquiry based learning, emerging from discipline areas (such as the historical inquiry approach), key educators and educational groups (such as Kath Murdoch's Integrating Inquiry model) or other more generic inquiry approaches, such as Action Research. Using a particular model/process can be helpful in structuring a unit for flow. To be truly inquiry-based though, the unit needs to embody the hallmarks identified earlier (it is possible to use some of these models and still have a very teacher-directed unit where student inquiry is limited).



Common Inquiry processes / models used in schools include:

- **Telstar** (see the table at <http://guidedinquiryhistory.wikispaces.com/TELSTAR+MODEL>)
- **Action research** - http://www.qcaa.qld.edu.au/downloads/publications/research_qscs_sose_primary_00.docx (p.8)
- **Design Thinking** - <http://notosh.com/what-we-do/the-design-thinking-school/>
- **5E's** – developed in the context of Science education, the 5e's has been used by the Primary Connections program <https://www.primaryconnections.org.au/about/teaching>
- **Social Investigation Strategy** - <https://www.qcaa.qld.edu.au/3517.html> - second article under SOSE includes a focus on this inquiry model
- **Kath Murdoch Inquiry approach** - http://www.kathmurdoch.com.au/fileadmin/_migrated/content_uploads/phasesofinquiry.pdf

Inquiry process in Christian Studies

All EQUIP participants will have a wealth of resources about inquiry in their EQUIP folder. Key skills of Inquiry are explored in several EQUIP Modules. An introduction and overview [about Inquiry] is in Module 2.

Features of CS Inquiry include a learner focus with both collaborative and reflective practices embedded throughout. The process for CS has been shaped around significant questions:

- What do the **students'** ponder and mull over? Are they being taught to **frame deep questions**?

Inquiry-Based Learning

- Where is there room for **authentic negotiation with students** to contribute to the **CS Unit's Essential Questions**?
- Is inquiry recursive? How will **tuning-in** occur? What needs to be **explored, collected, collated and recorded**?
- In what ways will students **analyse, interpret and evaluate** the information / data / narratives / visuals they have assembled?
- How do students **authentically share new learning and insights**? How do they balance and **synthesise their 'head, heart and hands' learning**?
- What are my / our **culminating reflections and response**? What **action** may be required?

Australian Curriculum ECONOMICS and BUSINESS skills include collecting and interpreting relevant information and data; apply economic and business reasoning and concepts to make informed decisions; and reflect on, evaluate and communicate their conclusions

<http://www.australiancurriculum.edu.au/humanities-and-social-sciences/economics-and-business/rationale>

Inquiry in the Australian Curriculum

Numerous AC Learning Areas are underpinned by an inquiry-based approach to learning. This is most prominent in The Humanities and Social Sciences suite of Learning areas. LEQ has developed a summary page **(and included the Inquiry Approach IN CHRISTIAN STUDIES)**.

History

<http://www.australiancurriculum.edu.au/humanities-and-social-sciences/history/content-structure>

Geography

<http://www.australiancurriculum.edu.au/humanities-and-social-sciences/geography/content-structure> (this includes an investigation process)

Civics and Citizenship

<http://www.australiancurriculum.edu.au/humanities-and-social-sciences/civics-and-citizenship/content-structure>

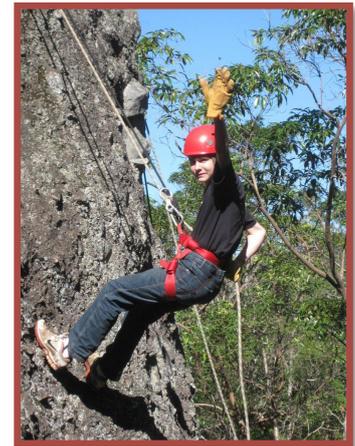
There is now a 'landing page' for the Humanities and Social Sciences [History, Geography, Civics and Citizenship and Economics and Business]. The sections **Key Ideas** and **Key Skills** are well worth a visit. Hover your mouse over the diagrams on these pages to discover further information.

Inquiry in Other Australian Curriculum Learning Areas

Science: has a focus on Inquiry. Information can be found on LEQ's summary page or on the following hyperlink. <http://www.australiancurriculum.edu.au/science/content-structure>
Primary Connections focuses on the 5E approach [the hyperlink is listed above]

HPE: features **CRITICAL INQUIRY** and notes that “critical inquiry processes that assist students in **researching, analysing, applying and appraising knowledge** in health and movement fields. In doing so, students will **critically analyse and critically evaluate** contextual factors that influence decision making, behaviours and actions, and **explore** inclusiveness, power inequalities, taken-for-granted assumptions, diversity and social justice”

<http://www.australiancurriculum.edu.au/health-and-physical-education/rationale>



Necessary Pre-requisites for Teachers

Embarking on authentic inquiry based learning **requires particular a mindset and skill set on the part of teachers**. Key understandings and skills around the following are necessary:

- Use of effective questions and question types
- A culture of curiosity and respectful dialogue
- organisational management of students, groupings, resources, time and space and monitoring strategies
- deep knowledge of subject matter and associated skills and processes (including domain-specific inquiry processes)
- strategies for scaffolding and guiding student thinking, planning and working giving responsibility and decision making increasingly over to students.

Further reading and hyperlinks (and references for this broadsheet)

Kath Murdoch website resources-

<http://www.kathmurdoch.com.au/index.php?id=3> and her blog - <http://justwonderingblog.com/>

Gallileo educational network - <http://galileo.org/> (includes a number of worth articles and stories)

<http://www.qcaa.qld.edu.au/3517.html> - the SOSE section contains two older but useful papers on inquiry based learning

Neil Stephenson - <http://www.teachinquiry.com/index/Introduction.html>

A teacher guide for implementing Inquiry based learning from Alberta, Canada (published 2004)

<https://education.alberta.ca/media/313361/focusoninquiry.pdf>

A visual overview of inquiry based learning can be viewed at

<https://www.youtube.com/watch?v=u84ZsS6niPc>

MORE INFORMATION





Books and Research [about teacher implementation of Inquiry]

There is a large body of Inquiry-based learning publications currently available. Names to seek out include Kath Murdoch, Jeni Wilson, Lesley Wing Jan (all Australian), Jay McTighe, Kathy Short.

Another solid read includes *Guided Inquiry: Learning in the 21st Century* (Kuhlthau, C & Maniotes, L)

An excellent research paper to better understand teachers' implementation of inquiry is: ***Implementation of science based on the 5E learning model: Insights from teacher feedback on trial***

Primary Connections units by Keith Skamp¹ & Shelley Peers²

Keith Skamp also produced a government sponsored report on his findings: ***Teaching Primary Science*** – Trial-teacher feedback on the implementation of Primary Connections and the 5E model.



MORE INFORMATION