



A spotlight on...

Enquiry-Based Learning

Centre for Innovation in Education

Overview

Enquiry in its simplest form is about questioning, seeking new information and looking for answers. Enquiry-based learning (EBL) harnesses the power of enquiry. A well designed EBL approach is centred on the enquirers (students) at the heart of the activity. EBL champions curiosity and encourages students to not only ask questions, but to ask robust, considered and well researched questions and share their findings with peers.

Benefits

Enquiry-based learning:

- Is student centred; it enables a sense of ownership of learning, which promotes a deeper understanding. Students are in control of their own learning.
- Creates opportunities for students to develop skills such as making critical judgements about information they find and use.
- Encourages students to collaborate and share findings.
- Promotes engagement with the subject matter.
- Takes the onus off the teacher to be the font of all knowledge, rather it facilitates students to learn how to find answers to their own questions.



Putting it into practice

Four-level enquiry continuum

Banchi and Bell (2008) developed a four-level enquiry continuum that details the different levels of enquiry-based activity. The framework can help you design EBL activities that develop students' enquiry skills over the course of a programme. The first stage of the continuum is confirmation enquiry; guided and structured, students are provided with the enquiry (or question) and given an approach on how to answer it. The expected answer will already be known. The purpose of this type of enquiry is to give students hands on experience of conducting enquiries in a controlled way, and to build their confidence before moving on to more independent enquiry tasks.

The next stage is structured enquiry. This is similar to confirmation enquiry; however the answer or result will not be known. Part of this level of enquiry involves students being able to explain how they reached their conclusions, so asks them to demonstrate understanding of the enquiry process. Confirmation

and structured enquiry tasks tap in to lower level enquiry skills, and are designed to help students to develop skills and build confidence before embarking on enquiries that are more open.

Guided enquiry means the students are only provided with the initial question; they need to design their own way of approaching answering the question as well, explaining their procedure and the results they gather. The continuum reaches its highest point at open enquiry; this is entirely student led. Students decide on their own question, approach, collate their results and draw their own conclusions. This open enquiry approach is often demonstrated in final year research projects.

Phases of enquiry

Regardless of the level of the enquiry task, there are some commonalities that students will experience, whether these be pre-determined or self-designed. Pedaste et al. (2015) identify these as the phases of enquiry. Students should be supported at each stage.

Students begin at orientation, which is the very start of the enquiry journey and involves the introduction of a topic. They then move on to conceptualisation, the crux of formulating the enquiry and may include generating a hypothesis or deciding on a research question. The next stage is then how the students tackle finding solutions to their chosen enquiry. This is the investigation stage, and for many students it will lead to asking further questions. The investigation phase is about exploration, gathering information, experimentation and analysis of data. Students are then able to draw conclusions, which may or may not answer the enquiry posed at the conceptualisation stage.

The conclusion phase should allow students to refine their ideas and highlight relationships between their findings. Ideally, these conclusions should foster further discussion that could be expressed by presenting findings to peers, and reflecting on both the outcomes and the enquiry process. A well-designed EBL task will also allow scope beyond the single area of enquiry. Students will be able to apply the knowledge or skills they have gained in future situations. There is also potential for the task to open up new areas of further enquiries to investigate.

Challenges

- Potentially students could end up lost or headed in the wrong direction, particularly in open enquiry approach. This is why support is key.
- Developing students' confidence so that they are able ask questions is very important and can be quite challenging for large cohorts.
- You need to have confidence to trust the students to take control of their own learning.

Case studies

Developing student research skills and confidence through an academic style Student Journal

Getting to know you: Dragons' Den as an interprofessional learning activity

Additional resources & references

Can you help us improve this resource or suggest a future one? Do you need this resource in an alternative format? Please contact us at cie@liverpool.ac.uk



www.liverpool.ac.uk/centre-for-innovation-in-education/resources/all-resources/enquiry-based-learning.html