Inquiry-based learning is a process that engages students in exploration, questioning, investigation, and analysis. It emphasizes knowledge construction through active learning and problem-solving as students use meaningful questions and productive discourse.

While open inquiry gives students free rein to take any direction of their choosing, research shows most students require support with using inquiry-based learning to engage in integrated thinking processes and achieve deeper learning outcomes.[1] Examples of authentic support include scaffolding strategies, formative feedback loops, and the use of questioning strategies to guide the learning process. In the guided inquiry process, the teacher acts as a facilitator, makes curriculum connections, provides the academic vocabulary for students to shape and communicate their understanding, and ensures that students do not develop misconceptions as they explore the content.[2]

The Inquiry Approach

Lessons that use an inquiry-based learning approach resemble real life and elicit high cognitive learning outcomes.[3] The inquiry process involves higher-order thinking as students investigate and look for relationships between concepts. They use their findings to make claims that can be tested and supported with evidence. As a result, students develop complex understanding that contributes to deep learning.[4] The teacher's role in the inquiry process is to assist students in generating their own questions to investigate; to provide guiding questions for support; to set the environmental conditions for discourse; and to clarify vocabulary as it emerges.[5] When teachers act as coaches or facilitators, they can guide students to use an inquiry approach that helps them make personal connections with the curriculum. Consequently, students develop confidence in their ability to become knowledge-builders who have vital information to share with others.[6] Authentic, engaging inquiry tasks generally have personal meaning to students, can be applied to a broad range of situations, and are guided by student-generated questions[7].

Meaningful Questions

Meaningful questions can be used to frame a unit of study. These are often referred to as essential questions. McTighe and Wiggins[8] note fundamental qualities for essential questions:

- require justification (not a single answer)
- are open-ended
- evoke the big picture
- point toward broadly transferable ideas
- provoke deeper thinking

Successful essential questions create more questions[9] and are foundational to deep learning. They require higher-order thinking and motivate students to engage, explore, and apply concepts to real-world problems or to their own lives.[10] When students generate and then attempt to answer meaningful questions as they engage in inquiry, the thinking skills and processes they use contribute heavily to how authentic the learning experience feels to them.[11] Questions also can be used to help students reflect on their own learning. Getting students to think about and apply ideas creatively starts with student-generated questions, which are the heart of student-centered, inquiry-based lesson design.[12]

Productive Discourse

Research has shown that students' understanding of complex issues changes even as a conversation

is happening. When students discuss their learning, it is made visible to themselves, which aids the development of metacognitive skills. In addition, students can come to better understand what they know as they talk through it.[13] It has been noted that participating in a conversation requires students to activate prior knowledge, process what others have said, think through possible and appropriate responses, make adjustments, and then say them out loud—all in real time. [14]

Giving students time and space for conversations in the classroom yields many educational benefits for students and teachers. When student conversation is an integrated part of learning, students practice working with one another, being accountable to others, listening, sharing ideas in ways that others can understand, and working together to make decisions.[15] Discourse that is embedded into authentic learning experiences helps students access relevant, connected information and construct personal meaning. Encouraging students to share their own cultural experiences and learn from those of others creates a bridge between what students know and what they are learning in school.[16] Giving students a space to speak also provides teachers with insight into how students organize their thoughts, which can serve as formative assessment. Scaffolding discourse requires a high level of expertise and comfort with uncertainty on the part of the teacher[17] but is ultimately worth the effort.

Conclusion

Inquiry-based learning is an active process guided by meaningful questions. Students work to answer questions through research, analysis, and collaborative discourse. They make sense of information and ideas that enable them to synthesize knowledge, deepen understanding, and share their learning with others. Teachers are responsible for guiding the inquiry process. This includes supporting students in asking good questions, finding relevant information, and reflecting on their conclusions.

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