A Teacher’s guide to inquiry-based learning

What is Inquiry-based learning?

Inquiry-based learning is a process of learning that engages learners by creating real-world connections through high-level questioning and exploration. The inquiry-based learning approach encourages learners to engage in experiential learning and problem-based learning.

Inquiry-based learning is about triggering curiosity in students and initiating a student’s curiosity achieves far more complex goals than information delivery. Despite its complex nature, inquiry-based learning is considered easier for teachers because it does not only shift responsibility from the educators to students, but also it is engaging for students.

Inquiry-based learning is important for creating excitement in students. It motivates students to become specialists in their learning process. However, this type of learning requires a certain level of independent learning skills. Children need to have developed the information-processing skills needed for working with minimal guidance. In this article, we will argue that there is a place for this type of learning but it does need to be supported with appropriate teacher training and balanced with more traditional curriculum delivery.

Inquiry-based learning puts the student at the centre of the learning process. Instead of simply absorbing information, students are encouraged to explore and discover knowledge on their own. This approach allows students to develop critical thinking and problem-solving skills, as well as a deeper understanding of the subject matter. The learning process becomes more engaging and meaningful, as students take ownership of their education and develop a sense of curiosity and wonder. However, it's important to remember that inquiry-based learning is just one approach to education and should be balanced with other teaching methods to ensure a well-rounded education.

What are the components of Inquiry-Based Learning?

Teachers can apply inquiry-based instruction in many ways, but some of its basic components include:

1. Observation/ Orientation: The instructor introduces a new concept or topic and the students explore the topic through hands-on activities, direct instruction and research.
2. Conceptualise/ Question: The students generate questions about the topic, hypothesise and do predictions.
3. Investigation: This component of inquiry learning has the longest duration. Students get teachers' support to take the initiative. Also, they find out answers, conduct research and find evidence to support or disprove hypothesis with the teacher's help.

4. Conclusion: After collecting the data and desired information, students come to conclusions and answers to their questions. They find out if their hypotheses or ideas prove correct or have shortcomings. This may give rise to more questions.

5. Discussion: At this stage, all pupils may learn from one another while presenting findings. The teacher guide discussions with more questions, encourage debate, and reflection.

The inquiry-based structure of learning has a lot of flexibility. Teachers frequently begin from inquiry-based science lessons, but the inquiry-based approach can be implemented into student learning to any lesson and subject. These transferable skills can be used to help pupils become more effective learners in the long run. In higher education, students are required to manage their own time and do their own research. This approach to teaching is a way of building skills for the long term.

What is an example of inquiry-based strategies in classroom learning?

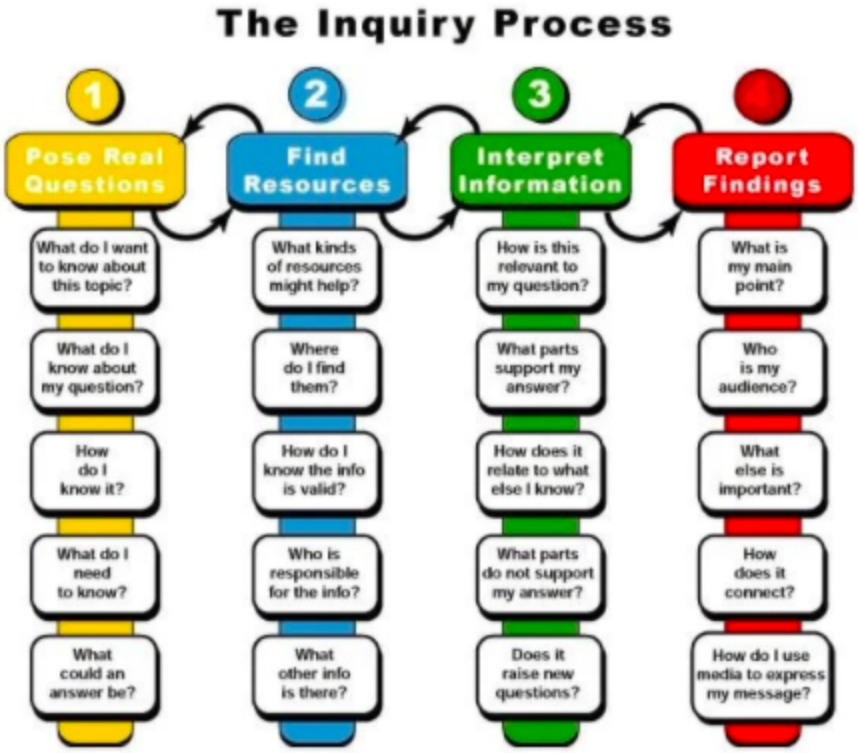
In a world history class, the pandemic can be used to compare, study and examine the history of pandemics. A group inquiry lesson may have the following components:

1. The instructor introduces the historical events of the 1918 Spanish Influenza by showing a short video clip. Reading tasks are also an important way to initiate the topic.

2. Then, the students are divided into smaller groups to talk about how this pandemic is different from/ similar to the existing one. The teacher motivates deep learning in students and encourages them to come up with additional questions about how people may have responded then and/or how they are reacting today. Some sample questions are:

3. What caused the plague and how well did people understand it?

4. Did people disapprove of quarantining measures in that era, and what were the political implications then?



Inquiry-based teaching strategies also support Science teacher while encouraging students to think deeper in Science lessons. Learners may brainstorm questions of their interest and discuss topics that amuse them.

1. Asking thought-provoking questions empowers students to explore solutions while using significant resources such as historical databases, reliable online resources and, the library. This helps students in developing a connection between the differences and similarities of the coronavirus pandemic and the Spanish Flu.

2. Students can apply what they understood to answer the teacher's initial questions and the teacher can motivate learners to use their research as a support to their answers.

3. Every group of learners may present their outcomes to the class and invite queries whilst the teacher can supervise the inquiry activities, discussion, correct any mistakes, and present further questions.

What are the benefits of inquiry-based learning?

There are many benefits of using Inquiry-based learning in the classroom. Some of these benefits include:

1. Improves learning experience: Sitting in a classroom and listening to the teacher's lecture and taking notes is not an effective or interesting way to learn. In inquiry-based learning, students explore the topics themselves, which improves their level of thinking and learning process.

2. Improves skills needed for other areas of learning: When students explore a concept, they build communication skills and critical thinking skills. Inquiry-based learning develops cognitive skills that students' comprehension in other subjects, and leads to lifelong learning.

3. Fosters curiosity: An inquiry-based learning strategy brings benefits to students' skills to share their opinions and concerns about a topic. It fosters more interest in the material and improves skills children can use to keep on exploring concepts they are interested in.

4. Improves students' understanding of topics: Inquiry-based learning allows students to make connections between what they are learning. This enables students to gain a better understanding of the investigative process and concepts, rather than merely memorising and recalling facts.

5. Students take ownership of their learning: Inquiry-based teaching method provides an opportunity for conceptual understanding, which gives them a sense of ownership for their learning. Rather than the teacher instructing about what they should know, learners get the opportunity to acquire their learning styles in their preferred way.

6. Students Engagement with the material: Inquiry-based approach to learning is a kind of active learning, which makes students fully engaged with education. When students are encouraged to explore concepts, make new connections, and ask essential questions, they learn more effectively and get more engaged in learning. Engaged students are more likely to perform better in the standardised tests and finish high school as they are more behaviorally, intellectually and emotionally invested in their learning process.

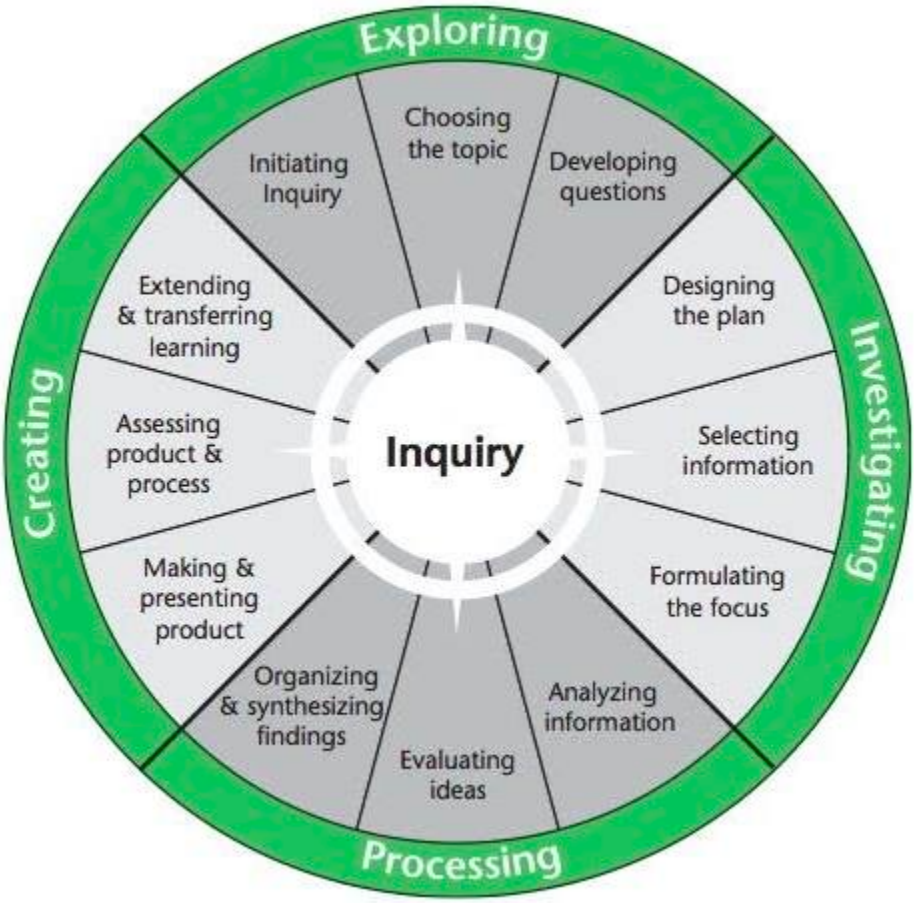
7. Love for learning: Enquiry-based learning develops a love for learning. When learners engage with the learning resources in their preferred way, they don't only gain a deeper understanding of the topics but also develop love and passion for learning and exploration.

8. Teachers Observe Students: In inquiry based learning, approach students get the centre position in a lesson, which provides teachers with a great opportunity to observe students. In inquiry-based teaching strategies, the classroom teachers don't step aside from the students in various grade levels. They remain close to the students, guiding and watching as needed.

9. Authentic Assessment: Assessment is more related to evaluating students' knowledge. Traditional assessments of skills offer limited insight into pupils' learning. Advances in inquiry learning and Inquiry-based lessons include many more ways to determine what students know. While a math teacher observes learners working on their activity for math class, they can

answer student questions, examine their level of understanding of concepts and can find more strategies to put their deep understanding into context.

10. Teamwork: Team-based projects and tasks are perfect for the inquiry process. An inquiry-based lesson may be taught individually, but many are performed in small groups of students. Discussion and collaboration help pupils learn from one another. In teamwork, students also get the opportunity to guide their class fellows.



Empowering learners: The mechanics of Inquiry-based learning

Incorporating inquiry-based learning into your classroom might seem daunting, yet it holds immense potential for fostering deep learning and enhancing conceptual understanding. Let's break it down into practical steps that can be seamlessly integrated into your classroom practice.

1. Identify the Essential Question: At the heart of every inquiry-based lesson is an essential question. This should be thought-provoking, open-ended, and it should challenge students to draw upon their existing knowledge and skills. For example, a math teacher might pose the question, "How does geometry influence the design of a bridge?"

2. Implement the Universal Thinking Framework: This framework aids in planning and executing inquiry activities. It facilitates the structuring of tasks, promotes critical thinking and nurtures transferable skills such as problem-solving, creativity and collaboration.

3. Guide the Inquiry Process: As an educator, your role shifts to a guide, navigating students through their inquiry journey. This involves scaffolding their learning, providing resources, and facilitating discussions, while also allowing them room to explore independently.

4. Foster a Reflective Environment: Reflection is a crucial aspect of inquiry-based instruction. Encourage students to evaluate their learning, contemplate their strategies, and consider alternate approaches.

According to a study, students engaging in inquiry-based learning showed a positive impact equivalent to an additional three months' progress.

Professor John Hattie asserts, “Inquiry learning requires teachers to be aware of how to prompt deep thinking, to be conversant with multiple ways of knowing and presenting information, and to be skilled at providing multiple opportunities for students to engage with substantive and syntactic knowledge of the subject.”

Successfully implementing inquiry-based learning may take time and practice, but the payoff in terms of student engagement and learning outcomes makes it a journey well worth undertaking.

Thoughts on inquiry-based learning

Inquiry-Based Teaching Methods provide an exciting way to learn and teach. However, teacher professional development and training are important, not only for inquiry-based learning but also for student success. To create engaged and meaningful learning experiences in a classroom, schools must provide teacher training opportunities to teachers to teach these inquiry-based lessons successfully.

Schools need to build time into the curriculum for these types of autonomous exercises as they are essential life skills. However, not all subject material is appropriate for this sort of approach to education. Pupils will need to have the learning skills and cognitive attributes to run with these methods.

There will always be a body of knowledge that just needs to be taught from the front, picking the topics suitable for this type of approach is half the battle. If a student is not well practised or confident in the area of independent learning then they may develop knowledge gaps that hinder their learning.

Source: 2022