Inquiry-based approaches to science teaching enable students to independently elaborate on scientific topics and acquire scientific knowledge through self-directed learning. IBSE attempts to find the middle ground between rote learning, where knowledge is transferred by the teacher only, and exploratory learning, in which students are completely left on their own when discovering scientific content. IBSE is committed to fostering students’ scientific literacy and fits well with the framework for health literacy proposed above. Obviously, IBSE will be likely to embrace health issues as welcome contexts for science education. Furthermore, because it is not primarily focused on (scientifically) correct results but on students’ active engagement with scientific questions, it opens up teaching to constructional processes and does not block students’ reasoning for fear of mistakes. Moreover, IBSE asks for a certain amount of hands-on science. This fosters students’ acquiring experiential knowledge and provides teachers with space for scaffolding their students, that is, for supporting and mentoring them on their way to scientific reasoning. Since IBSE contains elements of autonomous, self-organized learning, it endorses self-reflection, another important factor in the framework model.

IBSE’s emphasis on discursive reasoning, that is, reasoning in active exchange with others, and communication, called “talking science” (Lemke, 1990), helps students to engage in meaning construction through argumentation, with a focus on evaluating and refuting evidence and claims. The focus on developing students’ proficiency in scientific discourse, and in scientific inquiry in general, aligns with the scientific practices advanced by the Next Generation Science Standards. These standards describe particular aspects of inquiry or “practices” in which students must develop proficiency, including asking authentic questions, constructing explanations, and engaging in argumentation (NGSS Lead States, 2013). Talking science is also an ideal instrument for engaging students in cultural refection and for fostering cross-cultural exchange.

Cross-cultural understanding is the core issue in the second approach to science education that seems to be ideal for promoting health literacy in science contexts: the CBC approach. The basic idea of CBC is to interpret the frequent failure of teaching–learning processes in science education not as a reflection of bad teaching, nor of insufficient learning, but as a result of a cultural gap between science culture and the learners’ reference culture (Aikenhead & Jegede, 1999). An influential study of interest in science (Haste, 2004) identified a group of girls as “alienated from science.” These students were repelled by the frequent use of technical contexts in science classes, not because they did not understand machines, but because of cultural alienation. Such a “cultural clash” may prevent students from truly assimilating science content into their personal culture, in spite of their learning and often understanding this content on a formal level. In consequence, science knowledge will play no role in those students’ lives, although they may be able to perfectly reproduce it on demand on exams.

The CBC concept seems to be essential for understanding learning processes in issues of health and disease. As has been shown above in the example of vaccination decisions, cultural considerations play a major role in people’s decision-making.