Teachers’ perceptions to the intended science curriculum in Iceland
- An excerpt from an Icelandic research project, Intentions and reality (IR) -

IR is being funded by the Iceland Research Fund and co-funded by the Iceland University of Education. It was designed to examine developments in science and technology education in Iceland. In the project plan the following research questions were put forward:

- What is the nature of the gap between the intended curriculum and the actual curriculum - the intentions and the reality?
- Subsidiary questions and issues:
  o Main features of the Icelandic national curriculum in science examined
  o Resources and facilities available for science teaching and learning
  o What learning and teaching practices are typically found in schools? The roles of teachers – the roles of students
  o What influences student choice with regard to science and technology in secondary, further and/or higher education?

Six project components were identified, three of which focus largely on factors external to schools (the national curriculum, comparative studies and the labour market) and three which focus more directly on schools (the school curriculum, the views of teachers and learners and science and technology in classrooms).

The conventional “course to be run” approach to curriculum has been criticized (Schwartz 2006; Eisner 2003) and scholars argue that we do not need a one-size-fits-all curriculum with the same set of goals for everyone (see Eisner 2003). Teachers interpret the curriculum in various ways, they differ in their practices and no single specific instructional program seems to work for all teachers and all students; effectiveness depends on the classroom context and a teacher’s judgement about how to respond to it (Elmore & McLaughlin 1988, p. 39). It is considered natural that teachers have space and power to consider approaches to present the subject content, recognizing that there are multiple ways to interpret the curriculum (Schwartz 2006, p. 452). Teachers organize the content and pedagogical principles into a form that they consider meaningful for them and their students, generating a device Gudmundsdottir (1991) called "the curriculum story", denoting that teaching is about the making of meaning, i.e. teachers having to make meaning for themselves in the content they teach and having to transform their private meaning into a form they feel students will understand (p. 216).

Two positions have influenced curriculum developments in science for a long time. On the one hand there is the call for a subject-centered curriculum which is academically oriented and focuses on concepts, principles and the transmission of knowledge. On the other hand there is a call for a student-centered curriculum based on the idea that students construct their own knowledge, heeding real life and cultural context. (Cuban 2004; Parkay 2006; Atkin & Black 2003, Dewey 1938). Both of these views seem to prevail and furthermore both seem to be supported to a certain extent in recent curricula, international surveys and standardized tests. Obliged to meet both of these positions teachers are bound to work under strain and the pressure for coverage must be a threat to the quality of learning (Atkin and Black 2003).

In 2006 – 2007 on-site data collection was conducted through interviews, classroom observations and assessments of teaching conditions in 15 schools in four different areas in Iceland, two different areas in the eastern part, one rural area in the west and a south-western
urban area near the capital. Among interesting findings are teachers’ perceptions of the intended curriculum, constraints and worries, students’ views, and questions about what seems to work and what is needed for a successful science learning program.

**Issues for further discussion**

- The concern about coverage and superficiality is relevant
- A call for “practical work” is clear, but teachers say they need support for facilitating such learning conditions
- Child-centered vs. subject-centered views of learning and teaching coexist. How can teachers as professionals make them converge?
- What kind of knowledge do teachers need to become effective science educators?
- Facilitating science learning for heterogeneous groups with diverse interests and abilities seems problematic.

**Bibliography**


