



# TEACHERS' KNOWLEDGE IN INTEGRATING THE CURRICULUM

## CURRICULUM INTEGRATION

The purpose of the study is to explore and analyze the kind of knowledge curriculum integration (CI) requires from teachers and how teacher education should be developed to prepare teachers better for CI. CI is generally seen as a process of teaching and learning that crosses the unnecessarily strict boundaries of school subjects, making connections among them. Integration can cover both content and/or process of learning.

Currently, active discussion of CI is taking place in Finland, because a new core curriculum for comprehensive schools has been implemented since 2016. For the first time, the new core curriculum presents CI normatively as a compulsory element of schoolwork. Every school year has to include at least one multidisciplinary learning module lasting approximately one week. Additionally, the curriculum includes a list of seven cross-curricular transversal competences, such as multi-literacy and ICT competence, which are to be taught in connection with every subject. The reform is challenging, especially for secondary school teachers, who are specialized in teaching one or a few subjects, yet now are expected to create integrated learning opportunities by connecting a number of subjects.



## APPLYING SHULMAN

The strategy of the study is to examine the effects of CI on different categories of teachers'

knowledge presented by Lee Shulman. Shulman's theory is useful here, because it describes categories of teachers' knowledge required for successful teaching. Four of Shulman's categories are applied that are most relevant from the viewpoint of CI: 1) content knowledge, 2) curriculum knowledge, 3) pedagogical content knowledge, and 4) knowledge of educational ends, purposes, and values.

In the study, another category is added as the aforementioned knowledge categories are interpreted and discussed from the perspective of CI. This category can be called *integrative pedagogical knowledge*, which crosses all categories. It is not an independent knowledge category, but an approach to each category from the perspective of CI. It is an addition to Shulman's subject-centered theory.

## IMPLICATIONS FOR TEACHER EDUCATION

A good starting point is not only developing subject pedagogy, but also developing a pedagogy and didactics for CI. Here we can see the missing paradigm of today: the development of *integrative pedagogical knowledge*. In teacher education programs, it would include at a minimum developing:

### 1) Knowledge of CI as a possibility for constructing a curriculum

Student teachers have to be aware of CI as one alternative for structuring the curriculum. This means knowledge of general curriculum theory, including CI. It is important for student teachers to know that a curriculum is historically constructed and that subject division is only one form of its actualization. This information is crucial when teachers are constructing local curricula based on the core curriculum.

### 2) Knowledge of concepts bridging different subjects

One approach to CI is to design instructional materials that would assist in building conceptual bridges between subjects. Furthermore, building a better teachers'

content knowledge base for CI could be an objective for teacher education. Combining interdisciplinary courses and teacher education programs can improve students' understanding of the links between disciplines. In this way, CI is woven into the development of interdisciplinary studies in universities. The outcome would be teachers' *integrative pedagogical content knowledge* that means demonstrations, activities, metaphors etc. that show how different subjects are interrelated or even build on knowledge from other disciplines.

### 3) Knowledge of the purposes of CI

When CI is expected of schools, its purpose needs to be clearly acknowledged by teachers in order to enhance motivation to carry out the necessary reforms and plan integrated teaching in a goal-directed way. In teacher education, the purpose of CI has to be made explicit to inspire student teachers to develop their professional knowledge to include CI.

### 4) Knowledge of collaborative teaching by subject teachers.

It would be valuable for student teachers to gain experience in collaborating with student teachers in other subjects during the course of their university education. In some forms of CI, cross-subject collaboration is inevitable, and the experience with other teachers' subjects makes co-teaching and collaborative planning in CI more manageable. CI emphasizes the communal aspect of schoolwork.

A teacher education program can be designed so that every student teacher has to take part in planning and implementing at least one integrated study module with other student teachers. Because student teachers do not necessarily have any prior experience of CI, it would be difficult to expect them to apply it successfully in practice if it was not part of a teacher education program.

Niemelä, M.A. & Tirri, K (2018) "Teachers' Knowledge in Integrating the Curriculum: A Current Challenge for Finnish Subject Teachers". In: Weinberger, Y. (ed.) *Professional Knowledge in Teacher Education*, InTech, 2018.