

## CASE STUDY IN FINLAND

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In Finland, the data for case studies were collected via semi-structured interviews during summer and spring in 2019 after the second phase trialing of ACTS-tools of Finnish team. The data (interviews) were collected by Juli-Anna Aerila and all the interviews were firstly audiotaped and then transcribed for the analysis. The data consist of 10 interviews: five teachers from different parts of Finland and five student teachers in the Teacher training school of Rauma. The individual interviews lasted 50 – 60 minutes.

The data were analyzed via qualitative content analysis mostly data-driven. The reliability of the analysis was supported by the fact that the analysis was driven by two researches individually and the individually implemented analyses were compared. The researchers implementing the analyses are Juli-Anna Aerila and Teemu Mäkelä. The aim of the analyses was to find out what is the relevance of Finnish ACTS-tools from the perspective of the Finnish teachers. In this paper, we present some findings of this multiple case study.

The teachers and the student teachers tested the tools in their classrooms from February to May. They were allowed to choose which tools they would like to use. Additionally, they were allowed to create new ways to implement the tools with the children. All the participants of this study tested the tools in primary schools in different parts of Finland. In the middle of the testing period, the teachers were encouraged to further test the tools and maybe widen the variety of tools they are using. They were also allowed to share experiences on ACTS-tools and describe their own implementations of the tools to other teachers and student teachers.

The Finnish curriculum for basic education (2016) is based on Bloom's taxonomy. However, there is no specific materials to incorporate the taxonomy to classrooms. For many teachers, the taxonomy is unclear and quite abstract. Therefore, the Finnish ACTS-tools are aimed at making Bloom's taxonomy approachable to everyone. Additionally, we aimed at visualizing the thinking of children and the concept of thinking. This meant for us, concentrating on Bloom's taxonomy and the verbs concretizing this taxonomy.

The data collected from the teachers and student teachers confirmed our notions on the role of Bloom's taxonomy in classrooms. According to the interviews, the current learning materials contain very little or no information on Bloom's taxonomy and they had almost no ideas of how to make the Bloom's taxonomy useful: *"Very few educational material really show it. It is a bit abstract at the moment and talking about it in connection to teaching seems a bit artificial. It is not something that you can really see and know what it is."* Both the teachers and the student teachers felt that any material on Bloom's taxonomy that is easy to use with children would be useful: *"-- teachers are trying to accomplish easily and only use the ready materials even if they are not good."*

Based on the interviews we can state that the Finnish ACTS-tools during the interventions helped making children's thinking visible, the teacher to understand and react the thinking levels of the children, the children to verbalize and reflect their thinking and the teacher to develop children's thinking. According to one of the teachers: *"-- I cannot know what kind of thinking the children use in my lessons. Using the tools, I can say that his/her thinking were on higher level than I thought or my*

*understanding of children's thinking started to clear up."* It also seems that using the ACTS-tools had an effect on the pedagogy the teachers implement in their classes: *"You can observe where the student goes with his thoughts. Therefore, I am able to see how they think. I can easier create tasks for their level and tasks that correspond their skills and needs."* One of the concrete outcomes of the project was that both the teachers and the student teachers felt that the children focused better on tasks since they knew what the aims of the tasks were and what kind of thinking was required.

In conclusion, we can state that: The Finnish ACTS- tools helped most of the teachers to focus on the thinking of children and to the content and activities in lessons. The ACTS-tools increased the motivation of the teachers to create activities and content, which helped the students to assess their thinking and use variety levels of thinking skills. The teachers learned the meaning of Bloom's taxonomy. The teachers become more aware of their own teaching from the perspective of children's thinking.

Sometimes learning materials work different what we are expecting. To us the unexpected result was that the teachers felt that one most important results of the Finnish ACTS-project was that the teachers and student teachers themselves learned what Bloom's taxonomy means. For example, the Bloom's poster is being frequently used in classrooms and the pedagogical implementations are varying: after the teacher has learned the taxonomy, she/he will be able to make it useful for the children as well: *"Now it become concrete that Bloom was combined in our curriculum. Now I understand what it means."*