

# Supporting students in achieving learning outcomes in Biostatistics - an action learning project

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Biostatistics are an important part of the skills of a biomedical laboratory scientist and is assigned 7,5 ECTS points in the Danish Curriculum of Bachelor's Degree Programme of Biomedical Laboratory Science at UCL University College, 2016.

The aim of this project was to develop a method for supporting the students learning process. I used the *action learning* concept in five steps as presented below.

## Step 1: Identify the problem

In 2016, 78% of the students failed the biostatistics test at 1st semester and many students were lacking of skills in biostatistics later in education. In 2017 we introduced supervised problem solving in class and the number of failed students dropped to 38%. I wanted to support the students learning by focusing on learning outcome and social learning.

## Step 2: Plan the Action

The action was planned as three steps:

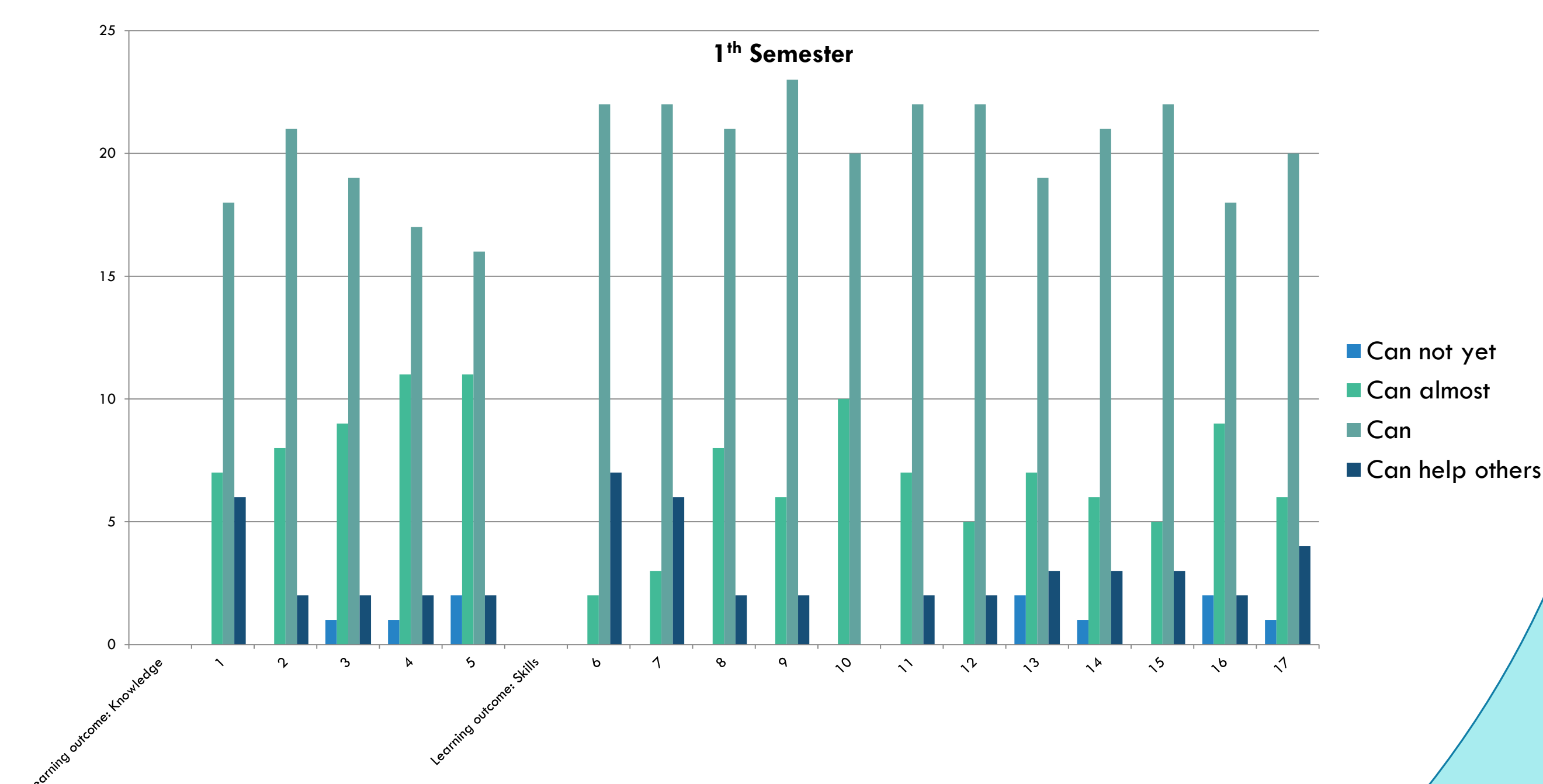
1. Self-evaluation based on learning outcomes

Learning outcome: Knowledge	Can not yet	Can almost	Can	Can help others
1. Can explain the statistic notions mean and median,				
2. Can explain the statistic notions tolerance and accept interval				
3. Can .....				
4. Can				

2. Results were used to group the students in heterogeneous teams
3. Students performed *Cooperative Learning* in teams

## Step 3: Perform action, observe and reflect

The action was performed during 2 x 2 lessons with one week between them.. 32 of 40 students performed the self-evaluation



## Step 4: Process experience

The action was evaluated positively by students, they experienced more awareness of learning outcomes and were more focused in their preparation for the examination. All students passed! The action was optimized based on feedback from didactic interview with colleagues.

## Step 5: New practice

In 2019 self-evaluation was used without the session of *Cooperate Learning* and 30% of the students failed the examination. We are now planning to reintroduce *Cooperate Learning* and will follow the results closely.