



# A-Z University Teaching & Learning Clicker

## What are Clickers?

Clicker systems – or Classroom Response Systems (CRS) as they are more precisely termed, are electronic response devices that help involve students even in large lectures. They can be used to gather opinions and feedback, and check the knowledge or understanding of students.

For example, lecturers could give students a short time to answer a pre-prepared multiple choice question (alone or in small groups).

A visualization of the results can then be projected for all to see.

## Functioning and components of Classroom Response Systems

Originally clicker systems were a combination of software and hardware components: specific software is required on the computer of the lecturer (or the lecture theatre) which in turn is linked to a receiver, in addition each student needs a remote control device (see diagram) with which they can send their answer by pressing the requisite button. These clicker systems are already available in many faculties and can be issued against a deposit at the beginning of the semester if they are required for regular use during a module or study program (they can be ordered from Daniela Isch, Head of MM-Production at MELS).

These systems are now being increasingly superseded by web-based tools that allow students to participate using laptops, tablets or smartphones, and no longer require any additional software or hardware components. Just such a web-based tool has been developed for Swiss universities, and is available for the UZH via Switch, and can be retrieved from the following website:

<https://movo.ch/>

IT services offer support for the use of this tool.

The Institute for Banking & Finance has also developed a tool that is available for all lecturers at UZH after free registration. <http://www.klicker.uzh.ch/>).

As these systems are web-based, students and lecturers must have Internet access.

After registration, lecturers can create multiple choice questions in their clicker account and make a link available to students via which they access the survey and answer the questions. It only takes a few moments to generate and project a visualization of the results.

Lecturers can comment on and react to the results. With the web-based tool the answers are anonymous, however some programmes for classical clickers offer the option of using the clicker code to assign the answer to the owner of the particular clicker.

## Some didactic considerations about Classroom Response Systems

This electronic version of conventional techniques to engage and assess students has several advantages:

- Students can remain anonymous
- Results are shown immediately
- Results can be stored
- Complex tasks can be undertaken even in large lectures, and the results can be integrated into the lesson and used further.

Data that can form part of the subject matter for a lesson can also be collected using CRS (e.g. the distribution of blood groups amongst students attending a statistics lecture).

The effectiveness of an interaction can be measured by its contribution to promoting students' learning. As only multiple choice questions or those requiring short answers are possible with most types of CRS it is crucial that the questions are formulated carefully in order to receive meaningful answers. Sustained learning success can only be expected if the question and ensuing discus-

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sion of the results provide a stimulus for the ongoing learning process. CRS can, therefore, be most effective when it is based on a comprehensive interaction concept for the entire lesson and creates the most authentic learning situation possible.

This means that the tasks set should pose problems that can be linked to other learning activities such as in exercises or self-study. Consequently, CRS should not be seen as a substitute for traditional methods of engaging students, but rather as complementary. The results of a survey with CRS can be used as the basis for further student activity, such as a discussion about background details or relevant connections.

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Alongside direct cognitive effects, the use of CRS can also help improve student motivation (the stimulus of thinking a problem through to its conclusion) and – when used in small groups – promote exchange between students. Using buzz or small groups also frequently improves the quality of the answers.

### Feedback function of Classroom Response Systems

CRS is also helpful as an instrument for providing feedback. Lecturers can quickly learn whether students have understood a particular aspect of the material or find out what effect a particular teaching method has had. CRS is above all suitable for those Classroom Assessment Techniques (CAT) based on closed questions (for material on CAT see the website of the Center for University Teaching and Learning). It is especially valuable for students to have immediate access to the overall assessment of their fellow students and, where appropriate, to have the chance to discuss it with the lecturer.

Sufficient time should be planned for the evaluation and discussion of survey results.

In every case, however, it is important that the choice of technology is based on didactic considerations: the technology chosen should take into account the framework within which the lesson takes place and help create as differentiated and authentic a learning environment as possible, so that classroom-based lessons, group learning processes and self-study elements can all be linked with each other.

### Links and Literature for Further Study

You can find a plethora of information and links on the theory and use of Classroom Response Systems on the website of the Center for Teaching at Vanderbilt University in Nashville, TN. This also includes an extensive bibliography:

[http://www.vanderbilt.edu/cft/resources/teaching\\_resources/technology/crs.htm](http://www.vanderbilt.edu/cft/resources/teaching_resources/technology/crs.htm)

A short report (inclusive video) on experiences with a clicker system at the University of Zurich:<http://www.uzh.ch/news/articles/2009/gruene-muntermacher-fuer-die-vorlesung.html>

Link to the website of the clicker tools Movo

<https://movo.ch/>

Link to the website of the clicker survey tool of the Institute for Banking & Finance

<http://www.klicker.uzh.ch/>