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Interactive Talks

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Introduction

John Amos Comenius (1592–1670) was one of the first true pedagogue who dealt with didactics. Several of his thoughts are valid and referred nowadays as well. He spoke about the importance of pictures and other representations during the teaching process in his first illustrated school-book *The Orbis Pictus* [Comenius]. He advised to use as many visual aid as you can to use all senses of students.

At about three hundred years later Edgar Dale (1900–1985) who was an American educationist developed the Cone of Education which show the efficiency of different kind of learning [Dale, Cone of…].
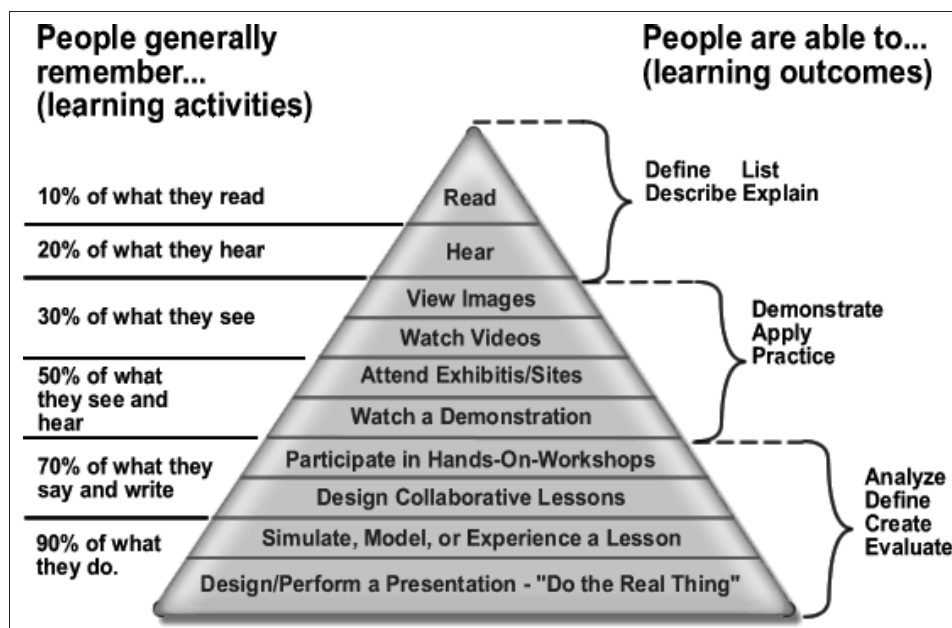

Fig. 1. Cone of Education from [Dale]

And now think it over what happens during a classical university talk! Usually a professor speaks about a theme using some presentation usually and the students are sitting and must listening silently. As the lecturers usually publishes their presentations, they do not have to make notes – so they do not have to write down anything! Referring back to the Cone of Education they will remember only the 50% of it in the best case.

But we state that the situation is nowadays worse than the above mentioned results. The new technologies, mobile phones, tablets etc. offer a lot of interesting media elements just in time from anywhere (from the auditorium too) – so a lecture is not in a winning position in the competition for the notice of the students. Dani, Erzsébet stated in her study [Erzsébet] that the young people are usually not able to pay attention to only one thing (she called it „informational mono-stream") for a long time – since they are used to the parallel usage of different devices [Illés, *Az MMM- generáció és…*]. This works against the efficiency of a classical talk.

It is worth to read the paper written by Tony Bates which title is the first astonishing „Why lectures are dead (or soon will be)". He states that only 25% of the time is used for useful activity during a lecture – even if the professor himself advices the audience to work their devices during the talk, even if the university uses the technology of some student response system (SRS). Why students should come to the auditorium if it is not efficient (25%), if they can learn on-line, if they can be interactive as well via web. Only some types of live lectures are mentioned by the author to be really useful etc. to summarize material found in several sources, providing the upmost modern thoughts which are not achievable yet. In any other cases there are the cheaper video talks, on-line books [Bates; Pšenáková, Szabó 2015].

In the Hungarian text-book library www.tankonyvtar.hu there are 4322 books in the moment of the writing this paper but there are even more during preparation implemented by different university research teams. However we experience that the results of the students would not be better, sometimes they are worse than before – though they can reach any content in any time, from anywhere! [Illés 2015].

We think that to achieve the best results we have to reform the classical style of lectures to make it more interactive referring back to the Cone of Education. We did not find the stone of wises – there are interactive polling systems used by conferences, in universities and in a lot of other places. They give the opportunity to ask the interest or the satisfaction of the audience just in time to change your mind and reflect to their problems.

Student Response System

There are several available personal response systems (and we can call them with different names as well PRS, audience response system, ARS, clickers) using different clicker devices and a controlling units, but we do not want to deal now with expensive complete PRS. Our purpose is to implement an own SPS, because we would like to create one own, which can be used in several ways, has useful functionalities and can be managed easily and at last but not least which is without any further costs. In our faculty building there is a free WiFi available for the students too. Our students learn informatics so a lot of them have laptops or tablets. Furthermore almost everybody has got a smart phone –

as any other young people nowadays. Now we are going to implement a system which uses the students mobile devices, the free WiFi and some web servers. That is why we shall focus the managing mechanism and the functionality of that kind of systems.

General features of lecture polling

Some cases a web-page is working as a user interface for the lecturers and for the audience as well (e.g. Voxvote [http://www.voxvote.com], Fig. 2a). The teacher can create different types of questions and possible answers through the homepage and naturally these data are placed in a database. The lecturer can manage the voting through the web-page: edit it, start it, stop it and get the result.

Other representatives of PRS are working as an add-in in e.g. PowerPoint (e.g. ParticiPoll [https://www.participoll.com], Fig. 2b). One can insert the questions and the voting mechanism inside a slide. Naturally a web-database and a web service are working in the background. The lecturer has to start the polling before starting the presentation and stop it with clicking and getting the resulting graph.

In both groups the lecturer has to be authorized to be able to manage the polling. Usually for achieving the full functionality the teacher or the institute must be a subscriber and naturally it means some costs.

The audience only needs the polling link and may be an identifier. They can poll through any device which can reach the given URL and has some possibility to click.

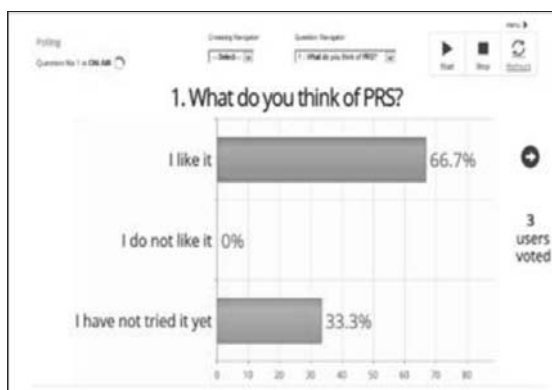The result is shown as a graph on the web-page or inserted into a slide.
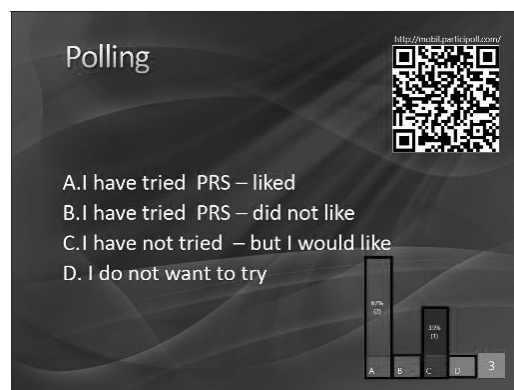

Fig. 2a. VoxVote

Fig. 2b. ParticiPoll

Functionality

Here we collected some functionalities, which are usually offered by different PRS.

– Different question types: choice, multi choice, result as numbers, picture choice

- To be able to edit polling events, to copy the polls, to archive them, to manage layout, colors etc.
- Send free text questions to the lecturer.
- To be able to moderate the questions
- The results can be downloadable in some well-spread formats etc. csv, xlsx or xml
- The result is on a web-page or in a PowerPoint slide
- To authenticate the users – and their polls, their results
- To audience can get feedbacks via e-mail

eLection, the true system

As mentioned before we should like to implement an own SRS to give more interactivity to our courses. We want to implement it by using the students' mobile devices. We have to keep in mind that almost everybody has an adequate device but not everybody! In this case our purpose must not be to make them write compulsory tests through it. Mainly we want to use it to make the lectures more interactive by polling the audience just in time.

We are thinking now three main purpose of activity questions:
- To map the knowledge gaps of the audience at the beginning of the lectures
- To get to know whether the students really understands the topic or there are some places the teacher has to repeat
- To ask some feedbacks of students at the end of the lecture if they are satisfied or not with the talk.
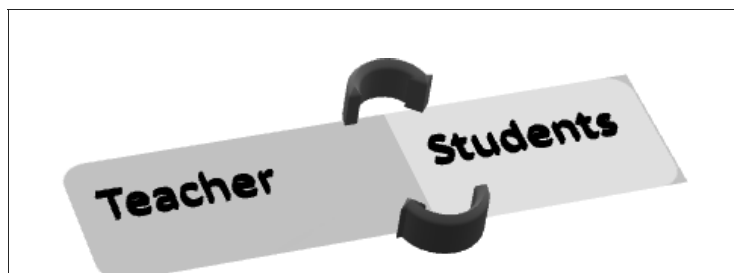

Fig. 3. Bi-directional asking mode

The above mentioned possibilities were all the types which were originated from the teacher. Our students suggested a „panic functionality" as well, when they do not understand the lecture they can sign immediately to the teacher this fact – this means the implementation of a bi-directional asking, which will be a new goal as it is shown in Fig. 3. In this way the students may initiate an immediate conversation between them and the lecturer. Receiving „panic" signs (the number of them too) it will depend on the teacher whether to stop or continue the talk. (We all know some funny students who only want to disturb a lesson).

We plan some mixed forms in managing the system. As we tried, it is very convenient to use a web-application for editing the questions and question links and store the collected data there. This web-page will be available for authenticated teachers only. The lecturer will be able to start or stop the voting through this web-page or by using a smart phone application – it will be a newness as well. It is not too convenient when you are in the middle of a presentation from your computer and you want to ask a question then you have to switch to the web-page to manage the polling.

The students can vote by loading the given web-page on any device with a browser or with a phone application. We plan that the results can be followed in real-time mode as well for the teacher – or for everybody – it can be checked by the lecturer. Usually the result is shown only at the end of the polling. The phone application will have plus functionalities e.g. the questions and the results can be saved into the device itself. The others can follow the events on the web-page.

We want to use the system in anonymous and in authenticated mode too – it will be the decision of the teacher. Authentication should be important in writing a test (but not in our case, if there is anybody who has not an adequate device), to check that everybody can vote only once, or to make the whole system measureable. This last case will be interesting for us first, whether there is a relationship between students' activity and final result.

Besides to make the lectures more interactive which has the same benefit from the students' and from the teachers' viewpoints, the ability to compare the results of groups or even semesters can help teachers to get to know and follow the changing of students' knowledge.

Implementation

We have a course called Mobile Academy, which is an eligible 16 credits subject for MSC programmer informatics students (http://ma.inf.elte.hu) [Menyhárt, Illés, Bakonyi 2014]. The main goal of the subject is to implement high quality applications on each of the well-spread mobile platforms. We always choose topics which can be used somehow in the educational process e.g. last year they created a Mobile Schedule (tanrend.inf.elte.hu) which can be reached through the AppStores. Next topic for them will be the mobile application parts of our eLection system.

Summary

In the XXI. Century with so many new technologies around us – with the advantages and disadvantages of them – we have to form a new type of education using up both classical and new types of teaching. The people are so different and there is a so great variety of learning attitudes that it is impossible to say for a unique style to be the only solution for everybody. We state that we do not have to throw away everything e.g. the face-to-face class form, but we have to refresh it

by finding new methods and tools and it must be well-customizable as teachers are also different. We plan to implement a new SRS which will suits all of our ideas to strengthen the effectiveness of the contact hours. This project has started and we are waiting the results, hoping that they would be used in our practice.

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Abstract

Nowadays people, especially young people usually use several mobile devices in the same time. This means, that they can reach any information just in time, so they are not patient any more to listen to anything which is not interesting for them in the moment. What does it mean in the context of university life? Is it true that university talks are living their last hours? They are boring because only one person is speaking for 90 minutes and nothing else happens? Are they really unnecessary because everything is on the net somewhere? Can we change this kind of attitude somehow? How can we make the talks more interactive? Our personal student response system.

Keywords: poll, interactivity, talk, mobile application, election, vote, student response system, personal response system, web-application, smart phone, interactivity.