

## IBS Report

### “Curriculum development: the use of new tools for teaching/learning”

IBS Vienna, Austria

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## Abstract - Summary

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An IBS is an educational BEST, Board of European students of Technology, event, where students take part in discussions and have the opportunity to express own ideas on educational matters. This is done by an opening introductory plenary session and then in smaller discussion groups with Professors from Technical Universities and in some cases representatives from Industry. The IBS is mainly run by the Educational Committee (EduCo), and the hosting local-BEST group, in this case Vienna. The topics vary on different educational issues: this IBS is organized together with the Educational Project, and Thematic Network connected to the European Commission, ETNET21, European Thematic Network of Education and Training for Environment-Water.

The title of this IBS, International BEST symposia, was “Curriculum development: the use of new tools for teaching/learning”.

## Overview

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## Introduction

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After the participants met each other, a short introduction about the topic was made and EduCo members found out in a opening brainstorming session the expectations and ideas of the participants. The students were split in 2 discussion groups, each group had its own facilitator and secretary (both of them EduCo members).

The general discussion was directed into 3 main threads: defining old and modern in teaching tools and techniques, useful and useless in teaching, improvements and solutions to teaching tools and techniques.

## Background of the participants

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The group includes students from several different European Countries, coming from Northern, Southern and East Europe thus giving a good picture of the methods used in each region.

The group had students from highly-developed countries that implement very modern ways of teaching and learning, from countries that are currently trying to get updated and students from countries that are still mainly using the traditional ways of teaching and learning. With such a wide range of background we can make a quite clear image of the curriculum development, the use of new teaching and learning tools.

## Discussions day 1

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General: the topics of the discussions were:

### ***Modern Vs. Traditional in teaching/learning***

Each of the 2 groups was divided in 2 sub-groups, a sub-group discussing the traditional aspect of teaching/learning and the other one discussing the modern aspect.

#### **Group 1 – Traditional**

Traditional learning/teaching involves a tutor “figure”. The teacher is permanently in contact with the students, but this way students are less independent. Students don’t have total freedom in choosing the time to study.

PROs: ERASMUS programs; more difficult to cheat.

CONs: “physical” presence is needed at certain times established by the schedule; industry changes very fast but methods stay the same, so universities are behind the development of science and technology.

#### **Group 1 – Modern**

Modern tools involve: computers, flexibility (schedule, teachers, classes), frequent feedback, teaching in english, 1 to 1 information flow, e-learning, video-conferences, team-work, companies support.

PROs: saving money, long term investment, sharing resources, saving time, flexible schedule, globalization of teaching offer, mobility, easier communication.

#### **Group 2 - Traditional**

Traditional learning means usage of books, taking notes, written exams, face-to-face classes, subjective evaluation, computer demonstrations, using slides.

PROs: getting in touch with other students, teachers answer students’ questions immediately.

CONs: books are expensive, too many students in the same classroom, little practical activities, losing the contact with modern technology.

#### **Group 2 – Modern**

Modern methods of teaching/learning mean: PBL (problem-based learning), internet forum, video conferences, group work – team dynamics, simulations, all-year-round evaluation, project work with companies, complementary education, high-tech tools, F2S (face to screen) methods.

PROs: practical, close to real life, immediate feedback, time saving, more chances for

CONs: teacher can view every student's actions online; cheating is easier in e-learning; not accessible without computers and internet; less human interaction.

students, appealing to students, industry-friendly, independent of place and time.

CONs: difficult to implement, needs constant technical supervision, no written proof (logs), expensive – teachers need to be trained constantly.

### **Conclusions:**

Even if the level of implementation of modern technology in teaching and learning methods is different in different regions of Europe and even if the educational systems which the participants came from are diverse, there was a general opinion on what modern tools refer to and on the advantages and disadvantages of using them.

The main advantages of using new tools of teaching/learning are:

- saving time
- giving opportunities for students, no matter where they come from
- keeping students updated with technology
- easier communication
- flexibility from the student's point of view
- closer to real-life-situations

The main disadvantages of using new tools of teaching/learning are:

- less human interaction
- expensive on a short-term
- not accessible to anyone due to use of modern technology
- difficult to implement everywhere

## Discussions day 2

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General: the topics of the discussions were:

### **What methods are useful and what useless in teaching and learning? Improving teaching/learning tools and techniques**

#### ***What methods are useful and what useless in teaching and learning?***

##### *Group 1*

###### **Useful**

- seminars
- discussion groups (debates style)
- all-year-long evaluation
- group work
- campus net
- videoconference

###### **Useless**

- slides
- monologues
- “chalk and talk” classes

##### *Group 2*

###### **Useful**

- discussions during lectures
- seminars
- practical demonstrations
- team-work
- simulations
- problem-based-learning
- all-year-long evaluation

###### **Useless**

- prepared transparencies
- high-tech
- internet forums
- videoconference

#### ***Improving teaching/learning tools and techniques***

##### *Group 1*

Solutions to improve teaching/learning tools:

- introduction of new methods to teachers
- more research opportunities
- possibility to participate in conferences
- higher salaries for teachers
- compulsory for teachers to make available materials before classes on internet
- combination of oral and paper exams
- evaluation during the whole semester
- usage of multimedia in class

- student activity in class should be awarded
- opportunity to choose subjects for active students

### *Group 2*

Solutions to improve teaching/learning tools:

- more funds to universities for improvement
- evaluation all year long
- more group work (CS, assignments, project work)
- more training for teachers
- more complementary education
- more exchange learning
- more discussions in the lectures
- communication should be improved
- unified system in all countries
- more infrastructure

### **Conclusions:**

In the end the two groups came up with very similar outcomes. It means that these are the ones needed to be taken in consideration by those that are in charge with observing the implementation of modern tools in teaching and learning all over Europe.

The issue of using modern tools in teaching and learning is not only about high-tech, it is mostly about methods and communication.

Students need the freedom to chose between the two alternatives : modern and traditional, depending on what suits them best and what fits their needs and goals better.

There is no universal key, different students require different teaching techniques.

### **Presentations made by the two groups**

The two groups prepared digital presentations that were shared in the end in front of the auditorium. It was a great opportunity for everyone involved to get a clear picture of the discussions.

## Conclusions

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After a three day discussion about the curriculum development we discussed both the advantages and disadvantages of using modern learning tools, against traditional ones. The participants shared their opinion on those matters presenting the situation in their universities. By having participants from all over Europe at the IBS we had a general idea about how the developments of the learning methods are applied in each region. We found some similarities between countries that belong to the same region, and also differences between countries from other cultural areas.

The final conclusion on the use of modern techniques was that in the fact the new tools are not the only things that define it. The way of combining traditional methods and the modern concepts was the main argument that emerged from the discussions. We don't need to drastically change the education system, but we need to improve it.

The feedback that we received from the participants was very good. They felt the need to share their new gained ideas with their other colleagues and teachers from the home university. The participants had the opportunity to work in a European team and they felt that their opinions can change the way education will shape their future.