

Leading methods of teaching at universities and higher educational institutions

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Abstract This paper is centred around the determination of leading methods used for advanced teaching and lecturing at the universities and higher educational institutions (HEIs). We analyse the worldwide experience and scrutinise the best practices. Moreover, we assess the existing techniques and approaches and classify the most advanced ones. Our results show that over the recent decades, the leading methods to teaching at universities and HEIs have altered dramatically. The rise of the information and communication technologies (ICTs) enabled the access to all possible and imaginable information, partnerships with institutions and companies from across the world, and the change of perspectives among the academic staff. The motivation of students to learn have changed too, making the whole system less effective.

1 Introduction

Teaching at universities and higher educational institutions (HEIs) is undergoing unprecedented changes related to the modern trends in the economy and society (Larsen 2016; Korosteleva and Bilitski 2017; or Litau 2018). While in the 20th century most of the teaching at the university implied going to lectures and libraries, the new technologies brought the possibilities of e-learning and using selected internet resources as a respected source of academically relevant information (Woolf 2010). The students have changed too. While in many cases in past studying at university was viewed as a full time job, and few students could afford to have a real job while studying, currently most of the students tend to have at least part time jobs or combine study and earning money in a different ways (Strielkowski 2015). Both of the changes required subsequent modifications in the ways of teaching, the levels individualization for the particular student and the modernisation of the curricula (Gulicheva and Osipova 2017).

Personalized learning is such a new education model that its definition evolves. The focus of the modern approach to lecturing at the higher educational institutions (HEIs) is that teachers give students personalized learning plans tailored to their interests and abilities (McLoughlin and Lee 2010). These plans are than combined to the educational programs relevant for a particular profession, employer, or field of study. Through these different approaches, educators can gain a better understanding of how to best govern their classrooms, implement directions, and connect with their students. One of the popular approaches is the personalized learning, which is very student-centred, but lecturers need to teach, see frequent assessment data, and meet with students to make necessary changes to their curriculum (Hallam et al. 2017). It requires more individual tutoring activities from the side of the teacher but enables the program to react quicker to the changing needs of the students and requirements of the field. Another issue is the earnings of the students from various backgrounds (see Humpert 2013).

It has been long recognised that most lecturers and teachers have a combination of all or most classical teaching styles (Fox 1983). These include direct instruction, facilitation of group discussion, or delegating the

initiative to the students in students' projects. The new approaches also include the student as the designer of his curriculum and learning plans. In the simplest sense, differentiated instruction means keeping an eye on all students as they develop lesson plans and workbooks, lectures, and interactive learning.

The internet technologies enabled not only the individualization of teaching, but also enrich teaching and learning and training experience via the virtual reality (for the literature review see Freina and Ott 2015). Students can participate in field research, learning expeditions, projects or case studies to apply in-class knowledge learned to the real world. However, many types of vocational or practical training cannot be learned virtually, be it a laboratory test or woodworking. An excursion can be particularly interesting for students and lecturers and facilitates some types of learning that cannot take place in a classroom.

Besides all the changing teaching and learning options within the university, the outer world changes too. There are many more university-private sector partnerships, which enable to shape the study programs and enhance the employability of the students. The effective collaboration requires substantial motivation on the side of the firms, universities and students. However, these partnerships, though in many cases very practical and effective, encounter substantial resistance from the both the schools and the firms, and the motivation of students is also falling down. This paper studies these obstacles for the effective collaboration and the reasons for the lack of motivation on the side of students.

2 Universities and private sector partnerships

Leading methods of teaching at universities and HEIs often involves partnering with the private sector (Bejinaru 2017). Though this partnership can be officially anchored differently, the main idea is to bring new up-to-date scientific approaches to the business environment, and applicable business level cases to the university. The main types of collaboration include teaching of firm level professionals at the universities, student practices at the workplace, the collaboration of the academic and business level professionals on student thesis papers or participation of the corporate sector in the governance structures of the universities.

One can also see that private sector partnerships can bring lots of benefits for the university lecturers (Dutta and Hora 2017). By engaging into these collaborations, they can get some touch to the reality, see how the real-life business works, and obtain some financial incentives (e.g. in a form of company-funded scholarships or the so-called "Chairs"). Fundraising conducted by the special units of the leading universities is getting popular every year and the private money helps to support many research and strategic initiatives. The partnership model provides a framework for the rapid and open exchange of information between parties with a shared vision and goals.

While the types of collaboration and the benefits for both sides are rather clear, the incentive to engage in the partnerships is far from ideal (for the European perspective see Galán-Muros and Plewa 2016, for the US perspective see Ranga et al. 2013). There are substantial threats, partially real and partially imaginary, which diverge the universities and the businesses from fruitful partnership. On the side of universities there are at least three problems. Firstly, it is feared the extensive inclusion of firm teaching and practices to the curriculum will leave much less space for the more general education which is supposed to be the main role of the university. Naturally, more often than not, the firms will want to develop the types and procedures at the university which will help the students to make the easiest transformation to the workplace, which, naturally will prepare them for the particular workplace of the particular employer. On the other hand, according to the current job projections and university expectations, the students will change many jobs during their lifetime, so the university education must be general enough to give the basis for most if not all of these jobs. Naturally the interests of firms and the expectations of the students and universities are very different in this respect.

The other doubt of the universities concerning the business-university collaboration is about the possible role of the business actors in preparing the curriculum and the overall management of the university. While in some cases the firm management of the university may bring more effective use of resources and better output, there are concerns about the loss of academic freedom of the universities to the businesses. In addition, there is a threat of influence of the businesses on university research in case if the results of such research are substantial for the marketing of the firm's product. For example, in case of the research on the danger of tobacco intake, there will be the incentive for the firm selling tobacco to support the types of research which will underestimate the negative effects of smoking and will stress the possible positive effects.

The next factor that tends to limit the university-business collaboration is the threat of using university resources such as buildings situated in good locations, research capacities or laboratory equipment for the needs of the businesses only without the concern for the needs of the universities. As is sometimes happened in the countries of transition, that some of the real estate formerly belonging to the state universities were "privatised" for the benefits of the business sector and the universities had to move elsewhere.

The last but not least factor preventing the university-business collaboration is the simple fear of university employees to lose their jobs. Naturally, if some of the courses, originally taught by internal employees are transferred to external firm level teachers, the firms ones will have to look for new types of collaboration with

the university. One of the possibilities might be collaboration on research, however, not all the lecturers are able to effectively conduct research projects and not all the universities have sufficient research funds to finance them.

Thence, as seen from above, there are significant doubts of the side of universities about the usefulness of the university-business collaboration with some ideas ranging to the possible dangers this collaboration may bring. On the firm level there are also substantial impediments for the possible collaboration with the university. The first and the most crucial is the idea, that the collaboration requires time of the firm personnel, which will be diverted from the more productive processes. Few firm employees would be willing and able to devote their free time to the teaching activities, and more often than not managers want their employees to be effective in the production, viewing teaching and working with students as useless from the point of view of the firm.

Despite the cons of firm-university collaboration, in some cases the collaboration may be successful and even re-creating for one or both sides (Hewitt-Dundas 2013). The universities may open business incubators and produce spin-offs to create new job opportunities for their students. The firms participate in university research and teaching to get new technologies and well-educated personnel (Starov et al. 2014; Blaginin et al. 2019).

Companies may reduce their spending on early-stage research and are increasingly turning to universities to take on this role and seeking access to the best scientists and engineers in specific areas. Universities were more receptive given the stingier state support for academic research and the demand to contribute more to their local economies. One can regularly hear about it from university administrators, founding directors who fund scientific research, and executives from leading companies. At best, ministries need years to investigate, debate and implement new practices for public education systems under their mandate. In reality, these solutions are rarely feasible due to the small budget and great inertia of stakeholders such as teachers' unions and ministries. Other private companies prefer to focus on creating solutions for higher education, vocational training and, in some cases, early childhood development.

One of the possible models for business-university collaboration is the open source approach to development especially in IT field (Enkel, et al. 2009). The success of the open source approach to IT development has led to its use in other areas as a tool that can be used by both academic institutions and the private sector to collaborate in new ways. Open source research models have the potential to democratize innovation and discovery by bringing together science, industry, government agencies, philanthropic organizations, NGOs, private investors, and individuals around the world. HEIs can also benefit from these processes and developments. The wide spread of technologies now allows them to partner not only with private companies in their close vicinity but to strike global and international partnerships with companies from across the world.

Many higher educational institutions demonstrate the value of such policies through their use. However, we are introducing a peer review process to decide whether to accept private or charitable funds if the source of funding is closely linked to a company whose product is potentially harmful to health or if there are concerns about the potential health effects of labour standards or relationships with the local community. A research steering task force is currently reviewing actions that could lead to amendments to the guidelines. It would be helpful to have private bodies working with public bodies develop their own guidelines and make them available on their websites.

3 Student motivation in higher education

It is clear from the literature that the involvement of students in higher education leads to higher student engagement and higher institutional engagement. The drop-out rate has been one of the most important topics in higher education for decades (McCaffery 2018). Because students do not stay at universities, there are implications for both the academic and social settings.

There are several factors that contribute to the high dropout rates. Firstly, the overall massification of the university education brought reflecting in higher enrolment rates brought to the university students who do not possess the qualities enabling them to graduate (Mok and Neubauer 2016). The lowering levels of secondary education create additional boundaries for the students enrolled to successfully graduate. The demographic crisis in economically developed countries which was not reflected in the diminishing segment of higher educational institutions lowered the necessary entrance levels to the university even further. On the other hand, striving to keep the quality standards on one side and financial stability on the other, the universities were pushed to offer the chance to enter the university education almost to everybody with the minimal entrance requirements. However, many of these students do not graduate.

The increasing influence of millennial and Z generation changed the mentality of students making them to more concerned with their everyday social interactions reflected on the social networks than the hard work in the university (Alwagait et al. 2015). The overall stress to enjoying the life and being cool, the desire to travel and have new impressions, diverted the student attention even further.

The economic side of higher education also play a role. Even in the countries where the university education is free, most of the university students hold part time jobs to pay for the accommodation, necessary food and other expenses and the lifestyle of the current generation. While from the point of view of the future employer

this hunger for a job, that get the future employees the experience, is a positive one, from the point of view of the time students can devote to the daily work at university the part time jobs have their negative contribution.

While student outflow is an important institutional concern, it remains to be seen what an institution can do to improve engagement. Current research in this area typically uses and tests specific applications or programs in higher education to determine their impact on student engagement. Many of the articles discussed are specific student learning applications and may not be transferable to other higher education applications or program areas.

Most of the approaches the universities use concerns the internet based education, the courses the students can do at home in their free time and the use of internet technologies in the class room (Rumble and Harry 2018; Simpson 2018). The modern communication platforms such as Twitter or Facebook groups can be used to collect the replies of the students to the questions posed during the lecture in more effective ways than the former posing oral question to the particular students. These methods attract students to lectures, increase their mental participation rates and enhance student discussions on seminars. The information the students can get in academic and non-academic internet sources, make often unnecessary to go to the libraries, and save their time while writing their papers. On the other hand, if the students are successfully taught critical thinking and how to work with the literature, the new modern technologies may be very effecting in minimising the time the students need to get necessary knowledge leaving more time for extracurricular or job activities.

In addition, institutions must invest in new and innovative programs to motivate students and increase their institutional engagement. Often, programming is limited due to staffing capacity or budget issues, but institutions have the ability to address these issues if they so wish. Current research and theoretical models also suggest that higher education institutions need to know the demographics and backgrounds of incoming students (Eng and Daneil 2017). As institutions seek to advance into the future, they need a basic understanding of demographic change within higher education.

Students arrive on campus or participate in online courses that have experience in knowledge design, collaborative learning, and respect for the cognitive process. This process expands a global perspective as well as a flexible forum that will be ubiquitous in the working community. The technology combined with advanced teaching strategies blurs the traditional teaching approaches and the way of learning becomes more inclusive for different learners. In higher education, students' competences go beyond content-related knowledge. They prepare students and challenge them to direct their own learning, solve problems of academic importance, and overcome the controlled containment of information

4 Conclusions

In general, our results show that teaching and lecturing in modern higher education call for innovative approaches and techniques that would combine theory and practice. In the age of IT and Internet it is not appropriate to rely upon the "old" model of higher education that included memorisation and re-telling the information to the lecturers by the students. To the contrary, the new computer-enhanced methods of learning may significantly shorten the time the students need to master the knowledge leaving them more freedom to enjoy their social interactions of job-related activities.

Besides computerisation, the other trend of higher education today relies to connecting the university education with production process of particular forms (Ranga, et al. 2013). Ideally as a result of such cooperation the firms will get the adequately qualified employees and the newly created technologies. Universities, on the other hand, will benefit from the real-life examples and techniques, financial support from the business sector and managerial optimization from the firms. Our findings also confirm that partnerships between universities and the private sector (most often represented by business companies and large international corporations) might also be beneficial for students and lecturers alike.

However, despite the obvious benefits, not all the firms and universities are eager to engage to the collaboration. There are substantial impeding factors on the both sides (Galán-Muros and Plewa 2016). The universities are concerned with the potential narrowing the scope of education, excessive influence of the business environment on the management and loss of academic freedoms and jobs. The firms, on the other hand, are not always persuaded about the potential benefits of such cooperation which would necessarily be paid by the time of their employees diverted to the teaching activities from the productive ones. Thus, thought potentially beneficial, the collaboration is not always in place.

Nowadays, that each and everyone has a constant access to any possible information via Internet or social networks, it is more important to teach students how to process, analyse and classify this information. Thence, the leading approaches to educating at HEIs and universities should take these changes into the account. Most of the leading universities do so by opening long-distance internet based study programs, using the modern technologies and internet-based platform in their daily teaching to attract the new millennial generation to the classroom and save their time, as the students do also have jobs.

Thus, the university sector of education has or will have to undergo major changes of teaching and research activities to increase the student enrolment, participation and graduating which will be significantly reflected at the financial stability of the particular university and the tertiary educational sector as a whole.

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