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MODERN LEARNING IMPROVEMENTS SUPPORTED BY IT SOLUTIONS – SLIDO CASE STUDY FOR BETTER ENGAGEMENT

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Abstract

According to a study published by UNESCO at the beginning of the coronavirus pandemic, about 84% of the world's population studying some of the educational programs (including formal education through primary, secondary and higher education, and university undergraduate and postgraduate studies) is affected by prevention and social distances. Experts estimate that such disability and absenteeism will cause a significant and noticeable lack of theoretical knowledge and practical skills at the global level for several generations, the study of which was lacking in the process of switching from physical to online teaching and digital study of the material. for studying in the physical environment of a classroom, amphitheatre, laboratory or similar educational facilities.

One of the ways to partially alleviate this process of not studying the entire prescribed material and accredited curricula on time relies on more intensive application of IT technologies, innovations and solutions, with a special focus on increasing the degree of student involvement in active learning. One of such IT solutions is SLIDO, an online software, primarily aimed at use for business purposes but certainly and unstoppably finding its way to improve education. This paper aims to explore potentials of increasing students' engagement through IT solutions like SLIDO.

Keywords: *modern learning; IT; IT in learning; engagement; SLIDO.*

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JEL Classification: I25, O31, O33

Introduction

In the disruptive world of today, due to the exponential expansion of new technologies, combined with the COVID-19 crisis, a significant number of challenges emerged [Meinck *et al*, 2022]. Information technologies (IT) has become an essential part of a new world affecting all the segments of life, work and education. Quite paradoxically, IT has also challenged itself, as a function in terms of potential to initiate changes, constantly transform to the next development phase, while simultaneously keeping the business or education continuity [Jovanovic *et al* 2022]. Global educational system is under high pressure to overcome post pandemic social distances and gaps on one side, followed by new teaching modes like hybrid or online learning methods and resistance of recipients to use them with full potential on the other [Stojakovic, 2021]. Despite the many negative aspects of the impact of the coronavirus pandemic on education, positive innovations are also noticeable, which were inevitable in conditions of the "new normality". One of them is digitalization and the transition to online teaching. At the same time, it is evident that students become less engaged while attending online classes fully remote [Burch, 2021].

When the online teaching is analyzed, opinions are divided and still do not exist a clear view of whether it is better or worse than the physical presence of the teaching and lectures. There are numerous strong arguments pro et contra, but this paper would focus on the positive innovations brought about by digitalization and online teaching. In the end, the results of online learning (either positive or negative) depend on the motivation and responsibility of the individual, as on the side of the teaching staff, as well as on the side of those who study some educative program, pupils, students, etc.

One of the key challenges of modern learning is how to increase engagement of students in everyday teaching in an agile but still qualitative way. New IT solutions could play vital role in this process by adapting business solution to the new purposes like supporting online education. SLIDO is yet one example to support this concept.

Background

This section presents (if the case) the used theoretical tools: models, calculation formula. Also, any potential statistic data will be referred to, as well as their source and processing manner.

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Technology has impacted almost every aspect of life today, and education is no exception. In some ways, education seems much the same as it has been for many years.

Classrooms today do not look much different, though you might find modern students looking at their laptops, tablets, or smart phones instead of books (though probably open to social media). opportunities for communication and collaboration have also been expanded by technology. Traditionally, classrooms have been relatively isolated, and collaboration has been limited to other students in the same classroom or building. Today, technology enables forms of communication and collaboration undreamt of in the past. Students in a classroom in the rural U.S., for example, can learn about the Arctic by following the expedition of a team of scientists in the region, read scientists' blog posting, view photos, e-mail questions to the scientists, and even talk live with the scientists via a videoconference. Students can share what they are learning with students in other classrooms in other states who are tracking the same expedition. Students can collaborate on group projects using technology-based tools such as wikis and Google docs. The walls of the classrooms are no longer a barrier as technology enables new ways of learning, communicating, and working collaboratively. [Bajraktari, 2019]

Technology has also begun to change the roles of teachers and learners. In the traditional classroom, the teacher is the primary source of information, and the learners passively receive it. This model of the teacher as the "sage on the stage" has been in education for a long time, and it is still very much in evidence today. However, because of the access to information and educational opportunity that technology has enabled, in many classrooms today the teacher's role shifting to the "guide on the side" as students take more responsibility for their own learning using technology to gather relevant information. [Bajraktari, 2019] Schools and universities across the country are beginning to redesign learning spaces to enable this new model of education, foster more interaction and small group work, and use technology as an enabler.

Technology is a powerful tool that can support and transform education in many ways, from making it easier for teachers to create instructional materials to enabling new ways for people to learn and work together, while providing unlimited options of engagement [Stojakovic, 2021]. With the worldwide reach of the Internet and the ubiquity of smart devices that can connect to it, a new age of anytime anywhere education is dawning. It will be up to instructional designers and educational technologies to make the most of the opportunities provided by

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technology to change education so that effective and efficient education is available to everyone everywhere.

Adapting the existing IT technologies and solutions, like SLIDO, to support learning is a cost-effective way to provide sustainable solutions within modern education. From the perspective of the methodology used, the research presented in this paper is a descriptive-analytical study. The research was based on a comparative analysis of the level of engagement of 181 students who participated in the lectures held physically in the amphitheater as well as in the lectures online. The same group of students was addressed with SLIDO polls in both kinds of lectures with various response rates. Also, overall engagement of students showed high level of difference compared to non-SLIDO lectures.

Illustration 1 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)

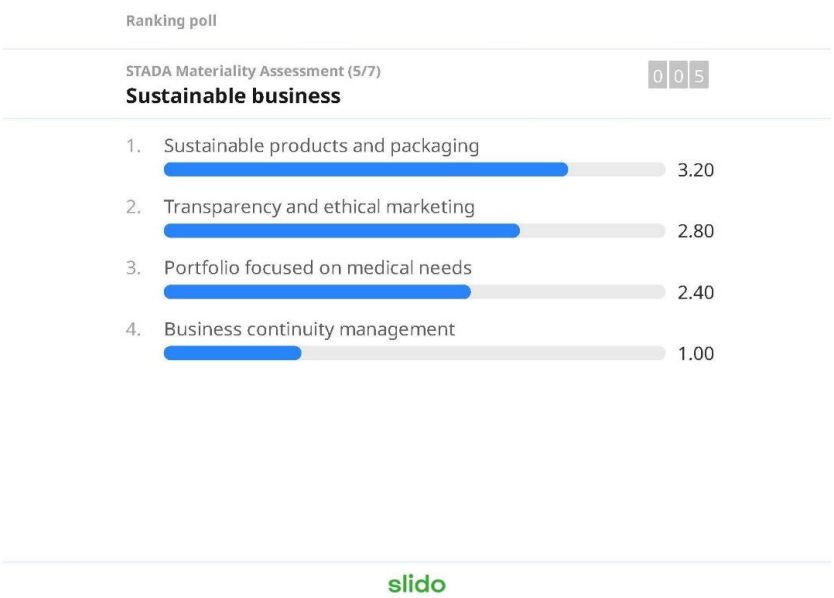

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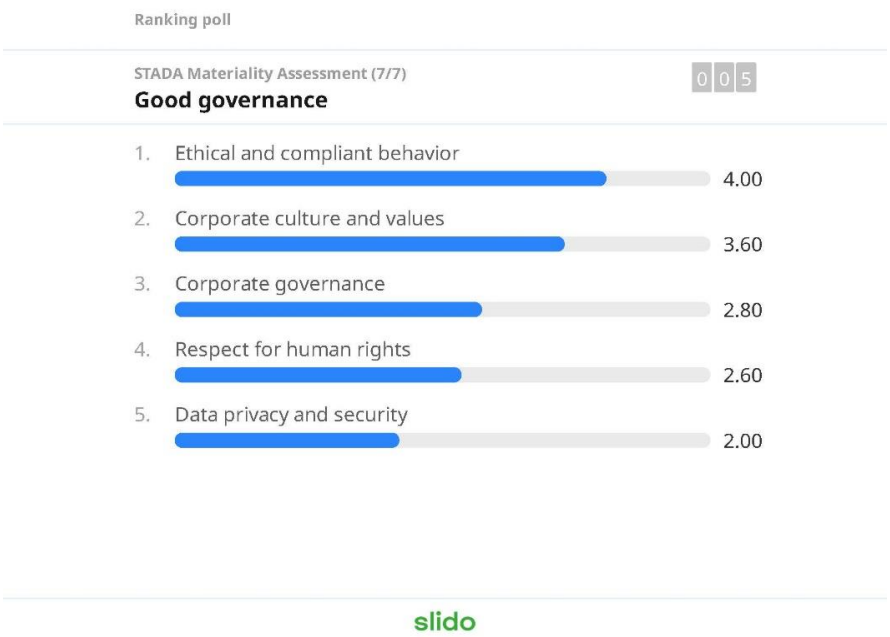
Illustration 2 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)



SLIDO from IT business solution to engagement tool in modern education

SLIDO is an easy to use Q&A and polling platform. It helps people to get the most out of meetings and events by bridging the gap between speakers and their audiences. From internal communications professionals to trainers, team leaders, conference organizers and individual presenters, SLIDO is used by anyone looking to enable open conversation at a live meeting, whether in-person or virtual. Having worked on over 1.77M events, this IT solution (software) helped to engage millions of participants, including some of the most outstanding business or scientific conferences worldwide.

SLIDO was created to support business' needs and challenges but soon it was realized to be potential solution for bridging the gap of lack of students' engagement in teaching. While physical education reduces the possibility of involving all students at once, online teaching offers certain practical solutions,

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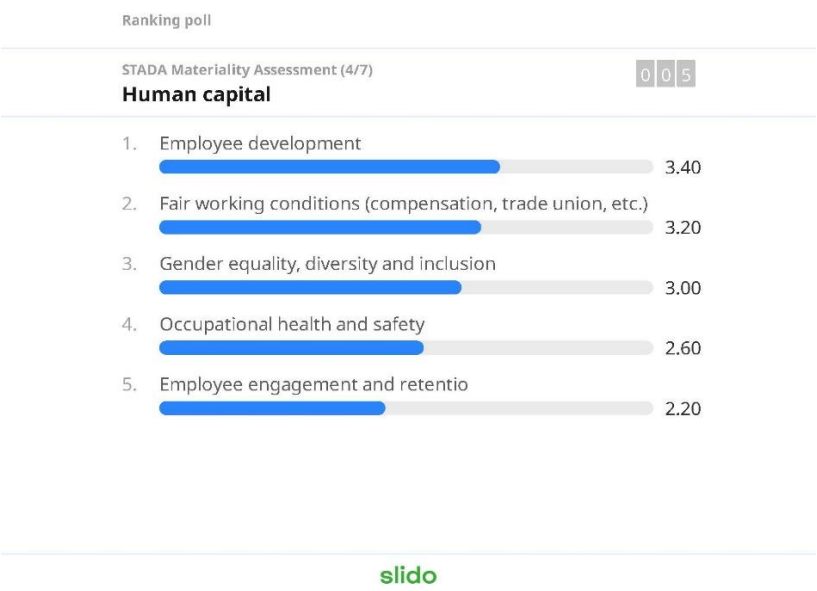
which can cover the whole class or class. One such digital solution is the SLIDO service. This free service (starting pack) is based on creating surveys and mini-tests, which are accessed via QR code, which is now close to everyone, accessible and known, and which offers real-time answers to questions, but also the exact number of those who answered. In addition to agility and precision, SLIDO offers a certain level of greater interest to those who attend education because they immediately gain insight into the opinion of the group, the correctness of their answers, sustainability of attitudes, mastering new knowledge.

Illustration 3 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)



The use of services such as SLIDO is very important in motivating students to think in a modern way and to be motivated to actively participate in teaching outside the current framework, thus increasing the potential of their preparation for new professions and professions of the future, especially those to which public educational systems did not yet paid enough attention.

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Three groups of students of equal size were involved in activations via the SLIDO tool. Two groups numbered 60 students, and the third 61. These are first-year students of the Faculty of Contemporary Arts who attend the study program of multimedia production. The research was initiated by the personal need of the professor to increase students' interest in the material, and to help them become actively involved in teaching, in an easy and fast way. At the same time, the challenge was to offer them a new and modern solution, which does not require too many activities before the concrete action. An additional challenge was the relatively narrow budget space within higher education in Serbia, which was expected to be a free solution or a very favorable license cost. From the conversations with various relevant stakeholders, primarily from the business and IT environment, it became known about the existence of SLIDO IT tool. Consideration of SLIDO as a potential teaching tool has raised several key issues:

- Is this IT service free?
- How is it used?
- Is it simple enough, agile and reviewed in the analysis of results?

Already after the first analyzes, it turned out that SLIDO requires only one step to access the content that needs to be placed with students, and that is the QR code. Assuming that all students have smartphones, as well as use them regularly, this way of engaging in teaching proved to be not only practical but also fun because students would otherwise use their smartphones to access non-teaching content (most likely social media) during the classes.

Further analysis of SLIDO showed that its basic license is either free or reasonably affordable, which meets the criterion of justification of use in terms of price, while the way of presenting the results is very intuitive and easy to interpret, with the option to monitor the number of responses in real time student participation in surveys, ranking of answers, etc.), which further affects their involvement.

Table 1. Engagement rate within Group 1 – 60 students.

Students offline	45 presents on lecture 1	Students online	55 presents on lecture 2
Lecture without SLIDO	Engagement rate 30%	Lecture without SLIDO	Engagement rate 32%
Lecture with SLIDO	Engagement rate 75%	Lecture with SLIDO	Engagement rate 90%

Out of a total of 181 students, in three groups, in two lecture modes, offline and online, in the version with and without the SLIDO survey, there is a significant increase in engagement and involvement in the case of using SLIDO tools (as shown below within Tables 1, 2 and 3).

Table 2. Engagement rate within Group 2 – 60 students.

Students offline	55 presents on lecture 1	Students online	59 presents on lecture 2
Lecture without SLIDO	Engagement rate 33%	Lecture without SLIDO	Engagement rate 40%
Lecture with SLIDO	Engagement rate 70%	Lecture with SLIDO	Engagement rate 95%

Table 3. Engagement rate within Group 3 – 61 students.

Students offline	56 presents on lecture 1	Students online	61 presents on lecture 2
Lecture without SLIDO	Engagement rate 31%	Lecture without SLIDO	Engagement rate 30%
Lecture with SLIDO	Engagement rate 80%	Lecture with SLIDO	Engagement rate 85%

Apart from being practical in engaging more student, SLIDO proved to be a good choice, as the topic addressed to students involved sustainable development, which is not so familiar to them. This innovative IT tool brought the topic closer to them in a way that also showed a level of fun in the process of learning.

Conclusions

The use of services such as SLIDO is very important in motivating students to think in a modern way and to be motivated to actively participate in teaching outside the current framework, thus increasing the potential of their preparation for new professions and professions of the future, especially those to which public educational systems did not yet paid enough attention.

The results of the research presented in this paper, based on the target group of 181 students illustrate that the engagement rate significantly increased when using SLIDO tool in both offline and online teaching.

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With the students participating in offline classes, SLIDO lectures increased engagement to an average of 75% within each group, compared to the average engagement without SLIDO of an approximately 31.33%. This result is less than a half of the previous result (with SLIDO). Similar result, but with an outstanding average of 90% of engagement came after introducing SLIDO to online lectures. Online lectures without SLIDO resulted in modest 34% of engagement which proves that online lectures without active engagement are pointless.

At the same time, the research showed that SLIDO enables check for understanding in real time - via live polls or quizzes to check if the students are keeping up with the lecture. This could help to identify the points that need clarification and adjust some lesson accordingly. It also empower quiet students to ask questions. SLIDO removes students' fear of asking questions in front of the class. With this tool, they could post questions anonymously from their phones and upvote the questions they like. Last but not least, SLIDO collects feedbacks to improve the classes. With this tool each teacher could become a better one, one lecture at a time. By asking for feedback with simple surveys it is easy to understand and see how students vote and participate over time.

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