Abstract

Blended learning is a concept that combines printed and digitalized study material to include all students in a classroom. Every student has its own way of learning and every teacher is obligated to take that into consideration in her lesson plans.

The traditional way of teaching was for many years through passive learning. John Dewey was a well-known psychologist, philosopher, and educator that broke new grounds by his theory titled "Learning by doing". David Kolbs was influenced by John Dewey and further developed his theory.

Teachers have inherited an education model from the 20th century that prepared students for a more industrial economy. That model that students only learn as a group, one way at the same time is outdated and inefficient. Student centred learning is the golden standard of education, but due to the costs associated with a required one to one teacher to student ratio, that remains just a dream.

Teachers can use blended learning to individualize instructions for each student and to facilitate instruction pace to each students’ unique learning needs using a combination of one to one time with them, peer group interactions, traditional teacher let lessons, tutoring and digital tools and content.

Blended learning challenges teachers to customize their teaching so that every student has a chance to develop to its full potential. A survey conducted on more than 1000 teachers, based on an initiative from Sanoma education, confirms that variation in teaching is possible through digital and printed teaching aids. Furthermore, the study also shows that digitalized teaching enables greater variation in the field of teaching. The survey also shows that digitalized teaching enables a more individualized teaching, it engages more and saves both students and teachers time for example through self-correcting tasks. Digital tools also give teachers a better view of the students’ development and results. When teachers are being asked if they have adequate access to various digital tools the answer is positive, which makes it easy for them to use the tools in their teaching. Though due to lack of education on how to use the digital material in the teaching, as shown by the survey, teachers tend to not use their accessible resources to their full potential.

Through highlighting good lesson examples, it can be concluded that blended learning is a new way to learn successfully. In practice, this may mean that a math lesson can start with a joint examination on the board carried out by the teacher. The lesson can continue with a math problem challenge that the students will solve first individually, then in pairs and finally the whole class together. The students can then work in the math book combined with a digital complement. An exit ticket in the form of recorded problem solving created by the students can be a good end to the lesson.

A long list of lesson examples only confirms that blended learning is the right way of teaching for students to reach their full potential in knowledge acquisition. Students fuelled by the exponential power of blended learning show results that true student-centred learning is achievable, manageable, and scalable for each student.

Teachers today want to work with both digital and printing material. More research is needed in how digital tools can be improved to further personalize the teaching for the student.

Keywords: Blended learning, digital and printed teaching material, good lesson examples.

1 INTRODUCTION

When we learn, we use all our senses and our brain to develop and improve as a human being. We learn new things through observation, reflection, experiment and imitation. We interact with others for
common learning. We analyze, evaluate and draw our own conclusions from the learned to bring in new ways of thinking, skills and habits in our everyday lives.

In a historical perspective the classic way of learning was by passively listening. That was questioned by John Dewey, who was an American philosopher, psychologist and educator and who at the beginning of the 20th century worked a great deal with e.g. how we humans think and learn. He came up with a new method of learning called "Learning by doing". The pedagogy was based on active learning by turning theory, practice, reflection and action. An example could be the following: A student wants to learn about elephants. Instead of reading it in books, the student goes to a zoo and looks at the elephants there. The student observes the animals there and experiences its behavior. After that, the student reflects on their experience and thus learns something new.

Eventually, teachers began to talk about "Experience-based learning" and one of the first to start talking about this was David Kolbs. He is an American psychologist and educator and is among others influenced by John Dewey. He has also created an educational model that is based on the different phases of learning, which are concrete experience, reflective observation, abstract concept formation and active experimentation.

The responsibility of schools to provide a quality education to every student is harder today then ever before. Schools and classrooms are increasingly diverse, and students must graduate college and be ready for a knowledge-based global economy. However, teachers have inherited an education model designed to prepare previous generation for a more industrial economy. The model of education in which one teacher delivers the same instruction to 20-30 students in age-based grades was successful when schools prepared students for work of the 20th century. That model in which students learn in one way at the same time is outdated an inefficient. Students today learn differently. The economy today is different. And so, schools need a different teaching and learning approach.

2 METHODOLOGY

Blended learning is a concept where printed and digitalized teaching tools are combined so that all students are included. Every student's way of learning must be considered by the teacher in her lesson planning.

Taking that into consideration, Sanoma Education, a mayor educational material publisher in Sweden, conducted a survey where they asked teachers about their use of study material. The survey was made in 2018 and answered by more than 1000 Swedish teachers. The survey was sent by email to teachers all over the country and they were asked to answer it anonymously. Teachers from elementary school up to high school answered five questions about their teaching. The questions they were asked are the following:

1 Many factors affect students' results. Which of the following factors do you think affects the most.
   o Student engagement and motivation
   o Variety of activities in the teaching
   o Individual support of each student
   o Quick feedback to the students
   o Individualized material for each student
   o The curriculum is followed
   o Use of technology / IT
   o Others

2 Which are the biggest challenges when it comes to getting students to reach the knowledge goals
   o Possibility to adapt the teaching to all students
   o Heterogeneous student groups
   o Time constraints
   o Too many administrative tasks
   o Too big classes
3 R E S U L T S

For decades researchers and school leaders have touted student centred learning as the best way of learning. Our survey is showing that student-centred learning incorporated with teachers personalising instructions and support is a preferable way to teach. Meeting students at their individual competency levels while challenging them to progress at their own pace is the best way to go.

The survey shows that students’ engagement and motivation affect their results the most. Other things that affects their results are the variety of activities in the teaching and individual support of each student. Further the survey shows that the greatest benefits of digitization in teaching is that it enables a greater variation in teaching followed by a more individual teaching (Fig.1). The survey also indicates that digital content engages more. Teachers are agreed that half digitally and half printed teaching aids benefits the students the most. Though due to lack of education on how to use the digital material in the teaching, teachers tend to not use their accessible recourses to their full potential.
4 CONCLUSIONS
In blended learning teachers can leverage adaptive technology to exponential scale individualized instruction for each student. This also gives teachers more time for planning, analysis and student support. Teachers use blended learning to facilitate instruction pace to each student unique learning needs. Using a combination of one on one time with the teacher, peer group interaction, traditional teacher led lessons, tutoring, and digital tools and content. Online programs help teachers identify student achievement gaps in real time. Students receive feedback where they need the most, allowing them to advance upon mastery. Technology lets students learn anywhere and anytime, building skills for lifelong learning. Student centred learning is no longer just a dream it’s a reality. Teacher can now meet all students where they are and help them learn and grow at their own speed and how they learn best. Student centred learning is achievable, manageable, and scalable for each student.

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REFERENCES
recording), and to individualise learning (by giving the student control over their path through the material, and over the pace of learning). This quartet of time, place, path and pace meant that different educators could value the new tech range of possibilities presented by combining. Internet and digital media with established class-. room forms that require the physical coâ€presence. of teacher and studentsâ€™ [3]. Other theorists and practitioners offer definitions, which are similar to those of Graham and Friesen. For Staker and Horn, blended learning is. â€œa formal education program in which a student learns at least in part through online delivery. of content and instruction with some element of. student control over time, place, path, and/or. Blended classrooms are designed to meet personal learning needs of every college student by allowing tutors to formulate personalized educational strategies and instructions. Blended learning is implemented not only at colleges, but also on any grade level. It combines both â€œface to face and online communication between learners and educators. Due to this combination, students can work with tutors when they are at school, as well as use additional online resources at home. With blended learning, studying extends beyond the school day. 7. Educators Claim That This Method Shows Them How To Be â€œBetter Teachersâ€. If teachers keep an eye on their students and provide strong support to them, more quality courses will be delivered. An individualized learning environment usually involves learners with special needs where they have an individual education plan (IEP). These learners have been evaluated to determine their strengths and weaknesses in areas such as: reading, math, writing and other cognitive challenges. From these evaluations, a set of measurable goals are determined along with accommodations for the individual learner in an IEP. An agreement by the IEP Team is needed to implement them. Implementation can include out of classroom one-to-one instruction and/or tutoring plus classroom accommodations by the teach