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Personalizing learning experiences for individual students

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Introduction

Take a minute, look around yourself and consider the following questions: To what extent has the world changed since you were in school? How much has technology simplified or maybe complicated your daily life? Has communication remained the same over the years? What about entertainment: do you spend your free time doing the same type of activities? Have your career prospects taken a different route from those of your parents? Do you have to face similar challenges or fear the same things as your grandparents?

The questions could go on and if we paused to think about possible answers, we would notice that it is relatively easy to list many of the ways the world has changed in just the last 10 years. However, if we were to consider what happens in education, we would be shocked to admit that most classrooms in our schools look and operate exactly like they did 50 or 60 years ago. Consequently, it should come as no surprise that many of the problems that have affected, in a negative way, our education system over time – such as educational inequality, lack of universal access to high-quality educational opportunities, poor student motivation for learning, lack of dedication or creativity from teachers - still exist.

Nonetheless, we are all aware that kids do not have the same access to opportunity. Many high school graduates enter college or the workforce without the skills they need to succeed. Therefore, it is time teachers, leaders, students, their families and other members of local, regional, national and even international communities across countries come together to explore how schools can better meet the needs of students in today's society.

When trying to find solutions, we must inevitably think about what students need to know and do to be able to thrive in the modern world; we should also consider what learning experiences are necessary to ensure students graduate with these skills and traits, as well as in what ways schools must transform so that they create these new learning experiences.

Generally, the answers specialists have produced have much in common: from urban districts to rural schools and from preschools to universities, teachers and leaders are reaching the conclusion that personalized learning is a promising solution. They see the tremendous potential of personalized learning to better educate all students and to better equip them to thrive in college, career and life.



Therefore, this chapter will focus on: various definitions for personalized learning, the positive implications of this type of education, the potential challenges associated with personalised learning, the changes that have arisen in the teachers' and students' roles, as well as the connection between the Metaverse and personalised learning.

- **What is personalised learning?**

While no generally, unanimously established definition of personalized learning exists, many definitions envelop general principles that include customization, student agency, and flexibility of instruction. Personalized learning is in direct opposition to the one-size-fits-all model because it focuses on the direct needs of the individual student.

The most cited definition is from the U.S. Department of Education (DOE) as stated in the 2010 National Education Technology Plan, "Transforming American Education: Learning Powered by Technology" report. The U.S. Department of Education defines personalized learning as: Instruction that is paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners. In an environment that is fully personalized, the learning objectives and content as well as the method and pace may all vary (so personalization encompasses differentiation and individualization).

According to the Aurora Institute, an organization whose mission is to drive the transformation of education systems and accelerate the advancement of breakthrough policies and practices to ensure high-quality learning for all, personalized learning is tailoring learning for each student's strengths, needs and interests including enabling student voice and choice in what, how, when, and where they learn - to provide flexibility and supports to ensure mastery at the highest standards possible.

The National Center for Students with Learning Disabilities considers that personalized learning allows all children to receive a customized learning experience. Students learn at their own pace with structure and support in challenging areas. Learning aligns with interests, needs and skills, and takes place in an engaging environment where students gain a better understanding of their strengths.

Another notable definition was provided by ISTE - a community of changemakers who help educators use technology to revolutionize learning: personalised learning is tailored to the preferences and interests of various learners and instruction is paced to a student's unique needs.



Bill & Melinda Gates Foundation offered the following perspective: personalized learning has four key attributes: learner profiles, personal learning paths, competency-based progression, and flexible learning environments.

Enlarging upon these attributes, personalized learning should, therefore, consist of experiences for all students which include:

- ✓ Learner profiles that capture individual skills, gaps, strengths, weaknesses, interests and aspirations;
- ✓ Personal learning paths that encompass learning goals and objectives and learning experiences that are diverse and matched to the individual needs of students;
- ✓ Individual mastery that involves continually assessing progress against clearly defined standards and goals, with advancement based on demonstrated mastery;
- ✓ Flexible learning environments which could include multiple instructional delivery approaches that continuously optimize available resources in support of student learning

In conclusion, in many ways, the principles of personalized learning stand in stark contrast with traditional classrooms: students move at their own pace, pursue learning that aligns with their individual interests and set goals to reach their potential. Personalised learning involves extending the educational concepts of differentiation (teaching tailored to the learning preferences of different learners) and individualisation (teaching paced to the learning needs of different learners) to connect to the learner's interest and experiences and meet the needs, abilities and interests of every student through tailoring curriculum and learning activities to the individual. The ultimate aim of a personalised learning environment is to create an educational system that responds directly to the diverse needs of individuals rather than imposing a 'one size fits all' model on students.

- **The benefits of personalised learning**

For an objective presentation of the topic under discussion, it must be stated that personalised learning has a number of advantages, just like there are several challenges that will be faced by teachers who choose to shift to this type of learning. In the following section, we will be concentrating on the benefits that come along, once educators understand that students, although in the same grade, have different knowledge base levels and learn at different rates. Teachers who are currently applying personalised learning have acknowledged that presenting the same lessons to a whole class and allocating equal time and resources to all students for learning the material cannot be a viable solution. Students



are more likely to succeed academically, emotionally, and behaviourally when they are supported as individuals.

One of the main advantages of employing personalised learning consists in the fact that students benefit from a **content which is developed based on their individual needs and interests and tailored according to their overall goals and objectives**. Teachers use flexible content and tools that can differentiate the path, pace, and performance tasks of learning for diverse groups of students. Nowadays, the instructional resources are so diverse and abundant that teachers need a minimum effort to seek out information, networks, and learning experiences beyond school walls; thus, they can cater to diverse groups of learners and can synthesize and evaluate information through tools, promoting new forms of collaboration and expression. Moreover, content is no longer delivered in isolated core subject, but rather through interdisciplinary learning experiences that require complex thinking.

Since students' individualised needs are essential in personalised learning, teachers must use a flexible content in order to **customize the learning path a student may take**. This means selecting a variety of methods or resources to achieve a learning goal. Students will benefit from an individualised path when they require content to help fill in critical knowledge gaps, or interests, as well as when they choose from a variety of culturally relevant materials in order to customize the lens with which they approach an area of study.

At the same time, students will be the beneficiaries of a **differentiated pace of learning**, which translates into the creation of individualised conditions for each student, so that he / she can explore and master concepts faster or slower than their peers, according to their needs and interests. In a traditional classroom, the educator is the one who sets the pace of instruction and all students must follow the lead on a tight timeline. Many times, this has caused frustration among both struggling and advanced learners. In personalized learning, however, teachers use flexible content, are more fluid with time requirements and students can drive their own inquiry into a topic or access resources to review essential skills, whenever they feel the need.

Another important point to be made is that “slow” learning must not be equated with “poor” learning. A student may gain confidence only after experiencing a concept through multiple learning modalities, or he / she needs supplementary time and resources to learn more deeply about specific topics. This must, by no means, be interpreted as poorer learning.



Additionally, when applying personalised learning, **students benefit from individualised tasks**, which offer them the opportunity to apply knowledge in authentic and relevant contexts. Teachers customize the learning experience for students, both the requirements and the topics could be different, unlike in a traditional classroom, where all students have to work through the same material in a unit and are asked to demonstrate knowledge in the same way on the same final test. In order to personalize learning, teachers can indicate articles, artifacts, lectures and demonstrations, which would not happen when teaching content in a traditional classroom; nonetheless, this is vital in order to prepare students for real world application of ideas. Students can build knowledge from a diverse set of resources; a set of flexible tools enables new forms of investigation and collaboration; thus, teachers lay the groundwork for authentic pedagogy - instruction, curriculum, and assessment requiring application in real world contexts.

Another advantage brought by personalised learning is **the possibility to integrate digital content during classes**. We are all aware that technology has greatly affected our daily lives, its benefits are numerous and education is expected to profit of technology's transformative powers. However, this does not mean that students will be isolated on a device for an entire class period. Rather, teachers actively find ways to incorporate digital content into their curriculum, thereby providing deeper learning through reinforcement and practice at the level that each student requires.

What is more, in personalised learning, **teachers use targeted instruction, developing flexible methods to smaller groups of students**, with the purpose of meeting their specific needs. This type of instruction offers students more opportunities to share thoughts and express concerns, while working closely with both the teacher and their peers, whose needs are similar. Teachers also testify that working with students in small groups creates possibilities to listen, mentor and build stronger relationships with students.

Possibly, one of the greatest benefits of personalized learning consists in its **potential to create meaningful opportunities for students to take ownership of their own learning**. Too often, students experience frustration and discouragement because they do not truly understand how their academic performance relates to their progress. In personalised learning, though, students begin to develop the abilities to reflect and take ownership of their learning, since these skills can lead to increased engagement, goal-setting and self-direction. Eventually, students will be better equipped for college and career opportunities in the future.



Yet, we should be aware that, in order to achieve this goal, teachers will need to provide frequent mentorship, training and support to students. Before they are able to demonstrate self-direction, students will struggle, even the high-performing ones, because generally, they are accustomed to following an explicit set of directions from teachers rather than working in an environment in which choice drives actions. That is why it is necessary for teachers to start offering students various opportunities to reflect on their work, to take time to compare their efforts to their results and then make plans to improve. Once students master the ability to reflect, to set and track goals, it will not be long before they become self-directed learners, which requires more advanced skills such as prioritization of tasks and creation of their own schedules.

- **Challenges and limits of personalised learning**

It is widely recognised that the cultural shift towards personalisation of learning is positive, however several potential challenges and limitations have been highlighted.

1. Making sure that the lessons and activities are adapted to each student's requirements is **sufficiently demanding, it calls for careful preparation and continual evaluation.**

Teachers must spend a considerable amount of time to collect as many data as possible about their students, about their background, their needs and interest. It takes dedicated teachers to ensure that customized learning is tailored and satisfies each student's individual requirements. Unfortunately, not all educators are willing to sacrifice the time needed to prepare differentiated contents, methods and tasks. In addition, it could be challenging to strike a balance between the requirements of each student and those of the class as a whole, especially in bigger classes where there may be a broad variety of talents and needs.

2. There is a **lack of understanding of what it actually means to personalize.** Similar to students, teachers need examples to draw from to aide and promote instructional design. Personalized learning requires educators that are proficient in different perspectives of learning, data analysis, and student grouping, as well as teachers who are willing to amend their role and adapt it to the new learning environment.

3. Another challenge of personalized learning is **the potential for students to feel isolated or disconnected from their peers.** In a traditional classroom, students often learn and work together, which can foster a sense of community and support. In a personalized learning environment, students may feel more isolated as they work independently or in small groups, which can lead to feelings of loneliness or lack of support. To overcome this challenge, it is



important to create opportunities for students to collaborate and connect with their peers, such as through online discussion forums or group projects.

4. One additional limit that specialists attribute to personalized learning concerns **technical issues when using technology for this purpose**. Anyone who has used digital devices in class can testify that sometimes, technology can seriously affect every good intention they had before a certain class that was heavily dependent on modern tools. Therefore, it is important to have a plan in place for addressing technical problems and to ensure that all students have access to the necessary technology.

- **The changes in teachers' role and their relationship with students**

Since personalized learning represents a transformation of the “one-size-fits-all” educational model, it will definitely require a paradigm shift in the role that teachers play in implementing it. In this new role, teachers are no longer expected to be “all-knowing providers of information”, but they act as facilitators, as coaches and guides, leading students to actively find their own knowledge.

In personalized learning, first of all, teachers must determine each learner's needs, gain an understanding of the student's strengths, challenges, aptitudes, interests, talents, aspirations as well as his/her preferences for accessing and processing information. Educators have to find out how the student prefers to engage with the content, and how he /she prefers to express what he/she knows and understands. All this information is vital to redesign the instructional environment so that teachers can support the best way in which the learner acquires information. Continuing the process, educators must create instructional goals, methods, and assessments, using a variety of flexible approaches which, theoretically, could work for everyone. McClaskey rightly pointed out that “if you are going to transform learning so learners have a voice and a choice, you involve them in unpacking and how they meet standards when learners co-design their learning strategies, they become better prepared for college and the workforce because they are more engaged in the learning process and can continue to use these skills throughout their life” (McClaskey, 2013, p.18).

At the same time, personalized learning is a model which focuses on including the learning styles, needs, and motivations for each individual student. Therefore, the teacher-student relationship helps to foster an environment in which the individualistic value of all students is properly addressed. When students move from grade to grade, they encounter increasing complexity, but what can help them overcome difficulties and all kinds of challenges is the relationships they developed with adults in their schools. If teachers manage to show care,



empathy, generosity, respect, reciprocity and a genuine desire to know students personally, they will have an important contribution to developing the young generation's ability to adapt, to be self-confident, resilient and to gain knowledge.

Another essential contribution teachers can make is in assisting students with their personalized learning plans. These are developed by students, generally in collaboration with teachers as well as parents and are based on a "student's talents, interests, and aspirations". The plans' role is to assist students in achieving their learning goals, and are centred on the belief that, if they decide what they want to learn, how they are going to learn it, and the reasons they need to learn it, students will be more motivated to learn, more engaged, will achieve more in school and will feel a stronger sense of ownership over their education. Teachers should therefore help students think about their personal life aspirations, particularly their career goals, analyse their learning strengths and weaknesses, identify specific learning gaps or skill deficiencies that need to be addressed, outline a personal educational program that would allow achievement of educational and aspirational goals, set major learning accomplishments or milestones.

Personalized learning is definitely not a replacement for teachers. On the contrary, it provides the data and strategies educators need to make better pedagogical and interventional decisions to allow students to learn in their own ways, at their own paces.

- **The metaverse and its connection to personalised learning**

In the metaverse education, personalized learning takes centre stage, which can be translated into adaptive learning technologies that harness the power of data analysis to offer customized learning paths. VR learning experiences are reshaping the way we acquire knowledge and develop new skills, offering interactive simulations, gamified learning, and personalized pathways for learners of all ages. These innovative solutions tailor educational content and experiences to match each student's unique learning styles, interests, and abilities.

One way in which this goal can be achieved is by using virtual classrooms, where students can engage with teachers and peers in real-time, fostering collaboration and active participation. Students are thus enabled to ask questions, seek clarification, and receive immediate feedback, all of which contribute to an individualized educational experience, in an interactive learning environment. Utilizing Metaverse capabilities and VR goggles, learners immerse themselves in virtual campuses, where education is transformed by facilitating efficient and adaptable learning experiences that bring together individuals from



diverse backgrounds. At the same time, the Metaverse opens up opportunities for immersive skill development within realistic scenarios. Virtual labs and environments enable students to practice experiments, fostering confidence and practical application skills. Moreover, students become able to bridge the gap between theoretical knowledge and real-world application.

In personalised learning, the ultimate goal is to empower students to progress at their own pace and in their preferred style of learning. This tailored approach not only maximizes engagement, but it also ensures that students are receiving the support and resources they need to thrive academically. In the Metaverse, each learner has a personalized avatar, which allows for self-expression and identification, making the virtual experience more engaging and enjoyable. The virtual teacher, whose avatar resembles a knowledgeable guide, welcomes students, reviews the learning agenda, and highlights key learning objectives.

In addition, the Metaverse overcomes the challenges of distance learning, empowering teachers to design spaces for internal meetings and encouraging student interaction. However, since one important characteristic of personalised learning is the students' contribution to their own educational process, when using the Metaverse, students are given the opportunity to establish study spaces, interact, collaborate, and socialize, enriching the overall learning experience. What is more, gamification enhances engagement, while social dynamics in virtual environments foster collaborative practice.

At the beginning of this paper, we stressed the importance of offering all students equal possibilities and chances, The Metaverse holds the potential to broaden access to social and educational opportunities for individuals with disabilities. VR applications offer a secure environment for communication, skill practice, and immersive experiences, benefiting those with special needs and challenges in social interaction. The metaverse provides a supportive and non-judgmental environment, positively impacting the emotional well-being of special learners. It also brings its contribution to reducing anxiety and stress levels. At the same time, the metaverse transcends geographical boundaries, fostering a genuinely global learning experience.

- **Conclusion**

Personalized learning should not be regarded as a “patch” for a broken education system, but as a new way of expanding and enhancing learning for all students, regardless of their individual abilities and circumstances. Personalized learning must not be interpreted as the



digitization of traditional learning, but as individualization of learning through use and mastery of modern digital tools and collaborative strategies among teachers, students, and peers who utilize the unique possibilities of the digital environment. Technology is the tool that makes personalized learning easier and more efficient.

At the same time, personalized learning is meant to serve as a dynamic enhancement to the classroom, freeing up teachers to spend more time interacting with students. This type of learning also allows teachers to mediate learning rather than act as “gatekeepers”, because it transforms the classroom into a hub of self-directed learning, in which teachers’ role is to enable and empower each student’s unique learning path.

In conclusion, the following characteristics define a successful personalized learning initiative:

- ✓ students take control over the learning paths they take to achieve established goals, building self-efficacy, critical thinking, and creativity skill;
- ✓ students’ interests and abilities are engaged in authentic, real-world activities to promote the learning of content area standards;
- ✓ teachers take on the roles of facilitators and coaches in the classroom rather than the dispensers of knowledge;
- ✓ formative assessment throughout the learning cycle, supported by digital tools, helps teachers and students address weaknesses and build on strengths;
- ✓ technology enables students’ choices related to what they learn, how they learn, and how they demonstrate their learning;
- ✓ progress through subject area content is measured by the demonstration of proficiency in identified skills and understanding.



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