Personalized Learning

by Robert Weisser

APASS EDUCATIONAL GROUP, LLC

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With the personalized approach, the students are deciding on their topics of interest and then we work in the learning targets to meet their individual needs... I am finding that the personalized approach keeps the students more motivated to dig deeper with their learning. I am also finding that the students are helping guide the learning of their peers with their discoveries. In our multi-age Garden (that is what we call our community), the students are modeling learning behaviors that help their peers become stronger learners.

–Susan Blaesing, K-2 group teacher, Wales Elementary School, Wales, Wisconsin

For generations, *personalized learning* mostly involved making adjustments for students who needed extra help to learn the curriculum. Depending on their needs and abilities, students might skip grades, be assigned extra help, study from audio versions of textbooks, or have testing accommodations. The focus was on fitting all students into the teacher-directed learning pattern of the traditional classroom.

The advent of ubiquitous, affordable technology has prompted a change in this focus—and personalized learning is now seen as a learner-centered method of guiding students to mastery of subjects. More teachers are experiencing what Ms. Blaesing describes above: students are more involved and perform better when they choose their topics, decide on the depth of their investigations, and make their own discoveries.

Implementing Personalized Learning

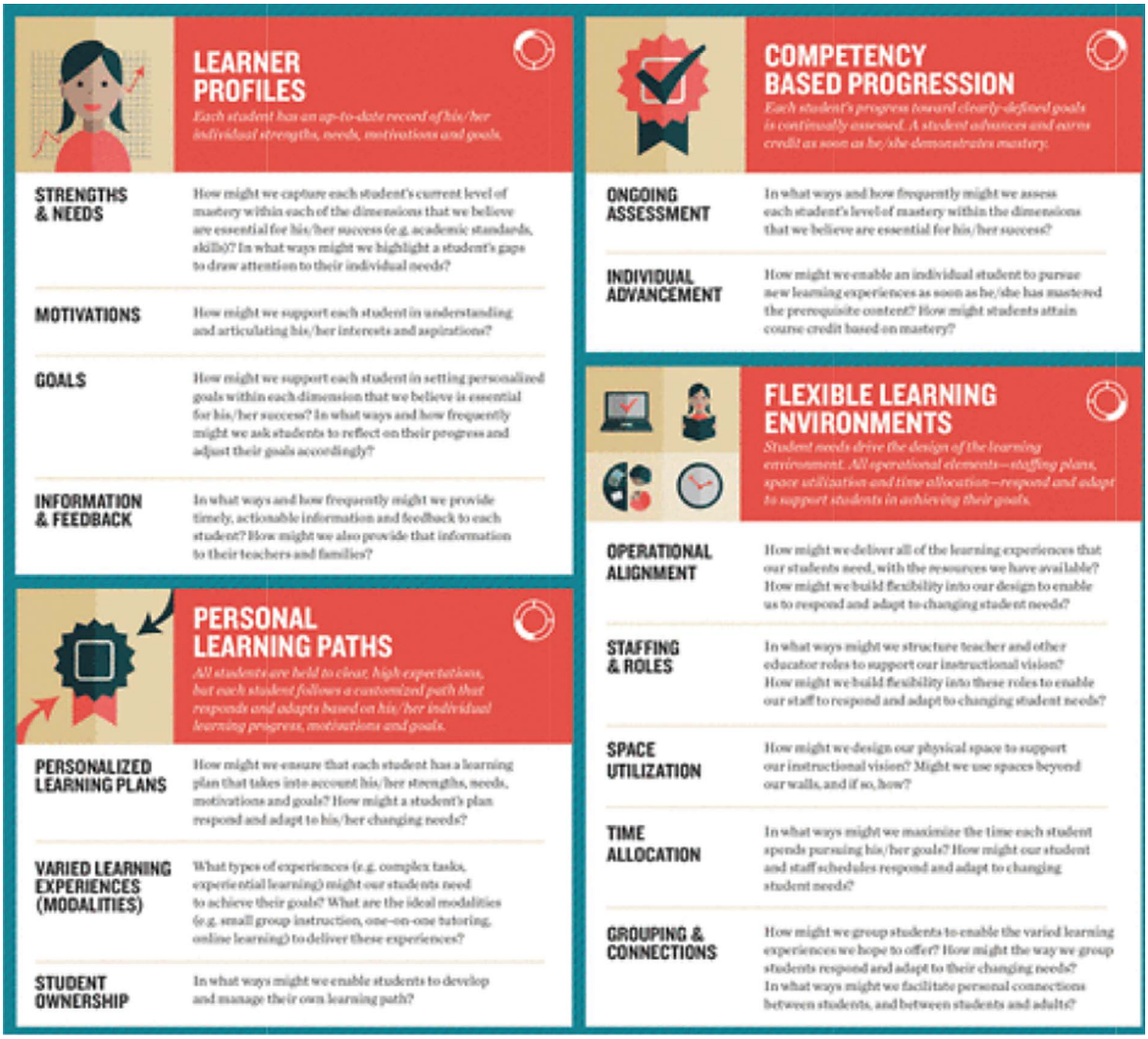
To make learning truly personal, educators must go beyond simple "differentiation" of lessons for students of varying skill levels, says Susan D. Patrick, executive director of the International Association for K-12 Online Learning (http://www.inacol.org), a nonprofit advocacy group based in Vienna, Virginia. Educators must also promote "student agency," or giving students more power over how they learn, what motivates them, and their academic goals. "Technology can help provide students with more choices on how they're going to learn a lesson," Ms. Patrick says. "(It) empowers teachers in personalizing learning" and "empowers students through their own exercise of choice." (Cavanagh, 2014)

As Cathie Norris and Elliot Soloway note, however, there are dangers to simply adding technology and calling it personalized learning (Norris and Soloway, 2014):

In so-called "personalized learning," a school is replacing a teacher standing in front of a classroom telling all the students about the water-cycle or about the War of 1812 with a computer telling the students about the water-cycle or about the War of 1812. And education well knows that telling is not teaching—and that memorizing is not learning.

Instead, educators must rethink and redesign the learning environment, which could require them to overhaul classroom structures and schedules, curricula, and the instructional approaches of teachers. For instance, as Andrew Calkins of EDUCAUSE states, the teacher's role in an effective personalized learning model is more akin to a coach or facilitator than a content provider. And a group of educational advocacy groups, including the Bill & Melinda Gates Foundation and the Michael & Susan Dell Foundation, created a working definition of personalized learning that rests on four pillars:

1. Each student should have a learner profile documenting academic strengths and weaknesses, motivations, and goals.
2. Students should have personal learning paths so they can set and manage their own academic goals.



3. Students should follow a competency-based progression through topics.
4. Learning environments should be flexible and structured in a way to support students' goals.

The original graphical version of the list shown here can be found at https://www.documentcloud.org/documents/1311874-personalized-learning-working-definition-fall2014.html.

But, how can an institution manage a system designed to personalize learning for its entire population? Peter Smith reminds us of three important parameters (Smith, 2014):

1. Though specific to each learner, personal learning may have many common elements across multiple learners' experiences. There doesn't have to be unique learning plans for an unlimited number of learners. What is unique is how a plan fits each learner's needs and aspirations.
2. Though some personal learning enabled by the institution may be specific to each learner, personal learning does not have to be unique. If the learning plan connects the learners' experience and knowledge to the learning outcome, and if learners help "build" their plans as they work, then the learning becomes deeply personal.
3. With the right learning support structure, the learners are in the driver's seat. Data about the learners—what they already know, what they need to know, how well they are achieving their goals—can be used by the learners, with the help of their "coaches," to make their own educational decisions.

This brings us back to Wales Elementary School. Ms. Blaesing and her co-teachers, Lisa Welch and Wanda Richardson, use personal learning plans for their learners in a multi-age environment. Every learner has a learning plan with goals set for the particular plan. This creates a group of collaborators that easily works across grade levels, ages, and abilities.

The group incorporates technology, as well, using Google Apps to send plans to each learner. Technology is not the only mode of learning, but it has an important role for transferring and attaining information. In addition, the learners lead seminars once a week. Each learner signs up to teach a skill or share something they learned for 15 minutes in the morning using the interactive whiteboard. This promotes the ideas that everyone is an expert on something and that learning can come from each other.

Ms. Blaesing offers as an example one boy who learned how to play chess and then taught a seminar on the intricacies of the game to his classmates. This prompted the others to learn the game and play it with each other. "We have 5-year-old learners playing chess with 8-year-old learners," Blaesing remarks. "It is truly remarkable to see!"

Personalized Learning in the Corporate Setting

As important as personalized learning is in a scholastic environment, it may be even more

important for corporate/adult learning. After all, students recognize that their "job" while in school is to study and learn. For adults, although continuing education may be a requirement for advancement or professional standing, there may be little incentive to shoehorn group seminars into an already packed schedule. Thus, effective personalized e-learning is essential to workforce education.

Although the participants are adults instead of children, the basic personalized learning assumptions remain the same:

- Each individual follows a unique path to understanding. Individuals come to a subject with different levels of prior knowledge: experts need high-level information and activities or they will succumb to boredom; beginners need entry-level information and activities or they will become lost. The pathway for recertification review for a CPA with ten years' experience is much different than the pathway for a new CPA trying to get certified for the first time.
- Individuals experience the content in their own ways, creating their own understanding of the subject. One person might have to memorize the definitions of technical terms, while another person may not need to do so.
- Learners who control how they learn tend to be more engaged in the learning and have better outcomes. Every person can dive as deeply into a course as they wish.
- Learners who accomplish the goal of the course earn continuing education credit that is required for promotion, increased salary, or other benefits.

All individuals can eventually arrive at the same knowledge level through e-learning, although the timeline will vary for each individual. The advantages of e-learning over standard seminar learning are legion:

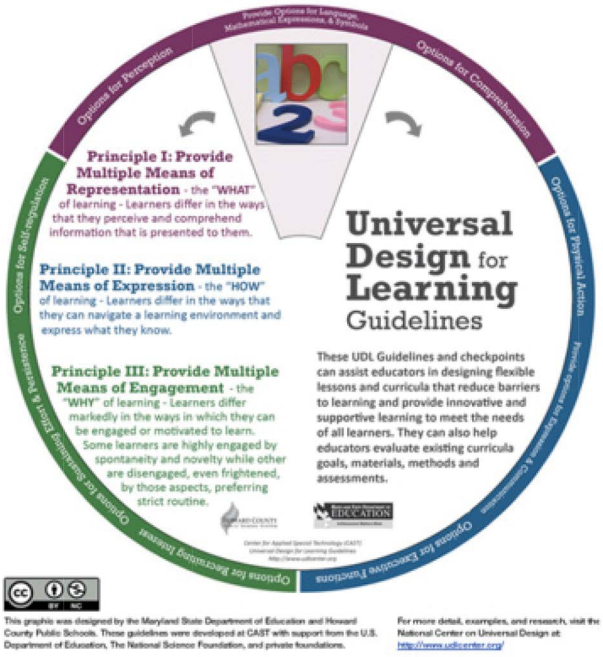
- Learning occurs at the time and place of the learner's choosing. There are multiple "down" times during a workday when the course can be accessed through the learner's device. For instance, learners can listen to audio feeds while driving to and from work, or access interactive features or videos while on public transportation.
- Learners can review complicated material until they understand it, and can access supplemental sources whose perspectives make more sense to them. For example, http://freevideolectures.com/ has more than 30 categories of college-level courses, each with multiple videos.
- Learners can access useful information in real time so that they can carry out their jobs. The website www.automd.com/how-to/ includes videos for many automotive maintenance tasks. The learner can watch the first part of a video, pause the video to carry out the learning, restart the video to learn the second part of the process, and so on.

- Learners can use feedback modules to point them to specific content they must master in order to correct errors or misconceptions. This is like having an expert tutor who can point out errors and suggest new pathways for investigation.
- Learners can expand their knowledge of a topic by researching subtopics according to their own brainstorms (or those of collaborators) produced by intriguing course material.

Instructional Design for Personalized Learning

The task of instructional designers is to form pathways between people (learners) and information or skills. These pathways are typically activities, with one activity leading to another. While traveling these pathways, learners will pass milestones that indicate the progress they've made, the improvements that are still needed, and what will come next.

A great place to begin instructional design is with the principles of universal design for learning, or UDL. (A detailed discussion of this system can be found at http://www.cast.org/.) In a nutshell, UDL helps minimize barriers to learning and maximize learning for all students. It addresses the brain's three broad networks for learning: recognition (the "what" of learning), skills and strategies (the "how" of learning), and caring and prioritizing (the "why" of learning). By taking care to address the following areas, instructional designers can create more successful e-learning courses:



- Provide multiple means of representation. Present content and information in multiple media, such as graphics, animation, and highlighting critical features. Activate background knowledge and support vocabulary so learners can acquire the knowledge being taught.
- Provide multiple means of action and expression. Give learners plenty of options for expressing what they know, and provide models, feedback, and support for different levels of proficiency.
- Provide multiple means of engagement. What fires up one learner will not fire up another.

With these guidelines in mind, designers can start creating the e-learning course.

Goals and Requirements. First, they have to understand the goals and requirements of the course. Certainly, they will access the professional/educational objectives for the learning and hold extensive discussions with subject matter experts. They will also research similar courseware to evaluate what does and doesn't work. And always, they have to see the course through the eyes of the learner, for the course matter has to address the needs of users who are not yet enlightened.

Information. Designers have to collect or attain access to the best sources of information needed for the course. Certain institutions desire that all information comes from their own learning management systems; but there are many other archives online. Designers must not only locate these archives, but test them for access, speed, and completeness.

Needs Assessment. Designers have to think about the best way to make a needs assessment for the learners. This is a process that will occur at the beginning of the course to evaluate each learner's prior knowledge, strengths, learning style, and interests. (The assessment can be adjusted as needed throughout the course.) The needs assessment can then offer a prescriptive plan to each learner, projecting a pathway that can best help the individual succeed.

Presentation. They also have to consider and choose techniques for presenting information to the learners. What sort of information has to be presented? In what forms is it best presented? What alternate forms will be needed to satisfy the diverse needs of the audience? These techniques should potentially include the full range of digital media: text, diagrams, slides, animations, videos, voiceovers, talking heads, podcasts, music, and so on.

Engagement. Engaging learners so that they feel ownership of their learning is an essential part of course creation. It might involve getting learners to use course content to solve real-world problems, or having them use trial and error to find the best procedure, or to debate competing actions with collaborators. There needs to be opportunities for teamwork: splitting up tasks, updating team members, completing a project. There must also be chances to go down investigative alleyways to see where their ideas take them, and ways of contacting associates in real time to bring them along to valuable new learning.

Feedback. Designers must incorporate ongoing feedback systems that give learners hints to do certain things, alert learners to gaps in their understanding, link learners to sources to fill those gaps, and provide rewards for successful completion of modules.

Enrichment. Learners need all sorts of additional information. The course may benefit from online video tutorials on how to use certain features, backed up by printable reference guides for offline use. Other tutorials might address issues such as how to write a report or how to make a successful sales call. If technical jargon is used, learners will probably appreciate a definition bubble that opens when a word is double-tapped. And there needs to be a myriad of appropriate links to other sources

to satisfy learners' thirst for knowledge or need for remediation.

Data Collection. For each phase of the course, designers must include secure data collection mechanisms that pass along information to the learners, teachers, administrators, and, of course, designers. These are essential not only for class and school recordkeeping, but also for evaluating the efficacy of the course and facilitating upgrades.

Databases. Designers must always account for all of the parts of the course by logging them into databases. The databases must be searchable by keyword/topic/objectives so that learners can navigate through the resources. Search functions have to appear frequently, if not on each screen, and must be simple to use.

Conclusion

As technology's impact on society accelerates, it becomes incumbent on schools, businesses, and other institutions to use the new devices and processes to their advantage. Through close cooperation between technology providers, instructional designers, and educational experts, personalized e-learning will help learners of all ages reach their true potential.

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