

# INSTRUCTIONAL METHODS AND EDUCATION MODELS SHAPING THE FUTURE OF HIGHER EDUCATION

*Defining and Differentiating Personalized Learning, Adaptive Learning, and Competency-Based Education*

## INTRODUCTION

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The higher education market is abuzz with new models, new innovations, and new ways to deliver content, engage students, and measure outcomes. As technology enables new learning experiences, instructional methods—such as Personalized Learning and Adaptive Learning as well as educational models such as Competency-Based Education (CBE)—become easier for institutions to implement and create change in the student experience.

While the education industry becomes more definitive, we see some educators using personalized and adaptive interchangeably, while others perceive a notable difference between the two. Both of these approaches do their part to combat a one-size-fits-all mentality to education, delivering a more efficient and productive learning experience that relies on individualized attention, an abundance of data, and targeted assessments. Yet, they do differ in the way that students interact with content and achieve mastery.

We view Personalized Learning and Adaptive Learning at Helix Education as instructional strategies supporting the student as an individual through intelligent course design, advanced technology, and deep data analytics. We believe CBE can take full advantage of Adaptive Learning and Personalized Learning to support an individualized path to mastery, academic credit, and on-the-job relevancy.

Based on our experience, the expertise of our academic insiders, and industry coverage, our purpose here is to provide clarity around these various approaches and highlight important considerations for each of these strategies and methodologies.

## PERSONALIZED LEARNING

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In a Personalized Learning experience, curriculum stays constant. The course itself does not vary as students encounter the same flow of information in the same order as their peers. However, a personalized guide or study plan is generated and updated as a result of pre-assessment activities to suggest which modules or topics may be skipped and where a learner should focus his or her time to develop advanced skills and knowledge.

Personalized Learning has been categorized in the industry as a learning process. This refers to various aspects of education delivery which offer students choice in their activities, ways of engaging with their mentors and peers, and other options.<sup>1</sup>

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The EDUCAUSE Learning Initiative (ELI) defines Personalized Learning as a tool to help educators design student-centered instructional models.<sup>2</sup> ELI depicts Personalized Learning as seeking to accelerate student learning by tailoring the instructional environment—what, when, how, and where students learn—to address the individual needs, skills, and interests of each student. Students can take ownership of their own learning, while also developing deep, personal connections with each other, their faculty, and others.<sup>2</sup>

Following this student-centered approach, we are seeing institutions customize instructional strategies for individual students, model different study habits based on the student’s learning style, and even group students according to various dynamics.

One of the most straight-forward ways to create personalization is the utilization of diagnostic testing. Otherwise known as pre-tests, these assessments gauge how much a student knows to create an individualized student path at the course and/or lesson level.

**AT A HIGH LEVEL, PERSONALIZED LEARNING NEEDS:**

**Clear Indicators:** The technology system should clearly indicate to students where to direct their attention. It needs to represent prior knowledge, completion of activities, and exactly what needs to be completed next. Students with a clear understanding of expectations tend to engage in the learning process at a much deeper level.

**Meaningful Assessments:** In a heavily diagnostic and formative learning environment, students need to understand the purpose of the assessment and why it is important for creating an individualized path.

**Faculty and Mentor Insight:** Since students are on their own path, faculty and advisors will need to be well informed on individual student progress and direction. The student should never feel as if they are alone in the learning process. Insight gained should open dialog between the student and mentor. The technology systems used for these programs will need to support this action.

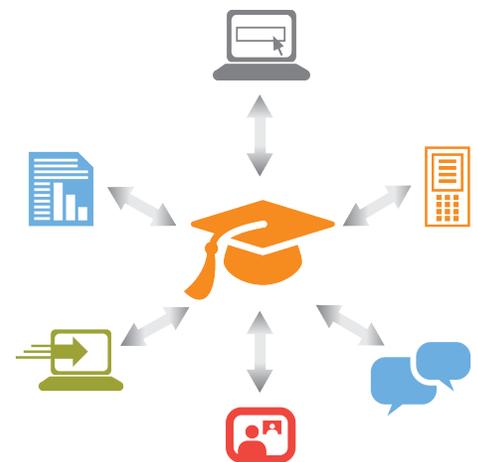
**ADAPTIVE LEARNING**

Adaptive Learning strategies create a student experience that is modified based on a student’s performance and engagement with the course materials. A research report from Education Growth Advisors tells us that, “Adaptivity is different from personalization in that it takes a more sophisticated, data-driven, and in some cases, non-linear approach to remediation. At a simple level, an adaptive learning system behaves differently based on how the learner interacts with it.”<sup>3</sup>

Whereas Personalized Learning tends to be more rules-driven, Adaptive Learning is more data-driven, continually evolving the experience over time.<sup>4</sup> In Adaptive Learning, the actual learning experience changes based on the individual’s performance. The instructional experience is organized to meet the needs of the individual learner and challenge that person at the most appropriate level. In an Adaptive Learning experience, curriculum adjusts based on the student’s baseline knowledge level. Technology can guide students to review materials where additional work is needed or can allow students to skip assignments where they have met the requirements and achieved the learning objectives. Essentially,



**A Personalized Learning experience provides learners with a custom study plan based on pre-assessment activities to suggest where a learner should focus his or her time to develop advanced skills and knowledge.**



**Adaptive Learning strategies create a student experience that is modified based on a student’s performance and engagement with the course materials.**

learning materials are presented to the student to ensure that his or her weaknesses are remediated and strengths are supported.

In an Adaptive Learning experience, each student literally sees a different course based on his or her individual learner profile and demonstrated progress. Different content is presented to different learners, which can be determined by a pre-test or formative knowledge check, but will more likely be based on his or her performance during learning time. For example, as EdSurge points out, some programs “adapt” based on the results of an assessment at the end of a unit. Other programs monitor the responses that a student provides while he or she is moving through the program. For example, how long does the student take to answer a question? How many “hints” does the learner need before scoring a correct answer? Rather than waiting until the end of a lesson, the program will continually remap the learner’s path even as they are working on concepts.<sup>5</sup>

It is also important to note that adaptivity does not solely have to be retroactive based on student performance. Through advanced technology, a system can also begin to anticipate things about the learner and serve up content based on knowledge of that profile.<sup>3</sup>

So how do we empower and support this type of instructional strategy? Technology systems and granular data analysis provide a pathway for institutions to utilize Adaptive Learning strategies to enhance the student experience.

#### **AT A HIGH LEVEL, ADAPTIVE LEARNING NEEDS TO BE:**

**Immediate:** Based on formative activities, students are immediately presented with materials to direct their attention and effort to address gaps.

**Accurate:** Formative activities should be aligned heavily to what students should be able to do based on their skills and abilities. Based on a student’s performance on specific activities, remediation is targeted to address that particular weakness.

**Effective:** The last thing a student needs is to continually fail, be presented with additional content, and then be directed back into the same loop. Escalation of support is required. Technology systems can monitor this activity, alert faculty and mentors, or connect students with student services such as tutoring.

#### **COMPETENCY-BASED EDUCATION**

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EDUCAUSE defines Competency-Based Education (CBE) as awarding academic credit based on mastery of clearly defined competencies. CBE recognizes prior learning and learning outside the scope of a course, regardless of where, when, or how that learning took place. CBE shifts the focus from grades to learning, emphasizing frequent, meaningful feedback that empowers students to take more responsibility for learning than in conventional models.<sup>6</sup>

Whereas Personalized Learning and Adaptive Learning represent instructional strategies to engage students with content and instructors, CBE is an education model that gives students ample opportunity to master designated competencies, which are often standardized, measurable learning objectives that are relevant to both a degree and a career.

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**“At Helix Education, we believe the unique thing about CBE is that it is not bound to a specific way to teach or learn.”**

As the Christensen Institute points out, students are not able to flunk or get away with a merely average understanding of the material; they must demonstrate mastery—and therefore must do dedicated work toward gaining mastery—in any competency.<sup>7</sup> Credit hours are de-emphasized as learners move through courses and programs at their own pace, putting outcomes ahead of seat time and grades. Time is no longer the measure of a credential, but rather demonstrated learning in defined outcomes becomes critically important.

According to the U.S. Department of Education, competency-based systems create multiple pathways to graduation, make better use of technology, support new staffing patterns that utilize faculty skills and interests differently, take advantage of learning opportunities outside of school hours and walls, and help identify opportunities to target interventions to meet the specific learning needs of students.<sup>8</sup>

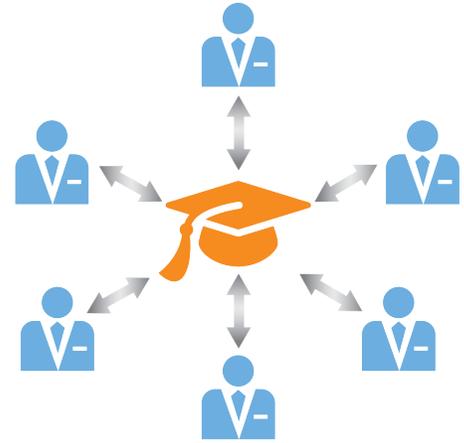
Citing an article published by SPT Malan, e-Literate’s Phil Hill explains that CBE must have explicit learning outcomes, a flexible time frame to master skills, a variety of instructional activities, criterion-referenced testing, certification based on demonstrated learning outcomes, and adaptable programs.

CBE is gaining momentum among colleges and universities who aim to deliver a student-centered focus. For example, the Competency-Based Education Network (C-BEN), which is led by Lumina, represents a group of colleges and universities working together to address shared challenges to designing, developing, and scaling competency-based degree programs. C-BEN advocates for CBE because of its potential to better plan, organize, and deliver educational opportunities and experiences at the program level than are available through traditional academic instruction. According to C-BEN, CBE programs are designed as flexible, affordable options for students who are not served well by existing postsecondary programs.<sup>9</sup>

Organizations like the Council for Adult and Experiential Learning (CAEL) are also helping advance CBE opportunities, citing that there is both excitement and hard work ahead. With one in five people in this country right now—over 43 million—having some college credit but no degree. CBE gives these students the opportunity to leverage learning from life and work experiences, saving them a considerable amount of time in earning a degree.<sup>10</sup>

CBE is generating awareness and coverage among industry analysts, thought leaders, and press too. The Christensen Institute concluded in its recently published work that “online competency-based education stands out as the innovation most likely to disrupt higher education.”<sup>7</sup> In an eCampus News article, CBE was named the “dark horse” of online education that will change everything.<sup>11</sup> Separately, eCampus News said CBE is becoming a must for any higher education institution looking to serve a broader pool of 21st-century students.<sup>12</sup>

At Helix Education, it is our assertion that the best CBE programs leverage both Adaptive Learning and Personalized Learning designs to teach and assess defined outcomes. We believe the unique thing about CBE is that it is not bound to a specific way to teach or learn.



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**“Online competency-based education stands out as the innovation most likely to disrupt higher education.”**

**- The Christensen Institute**

**AT A HIGH LEVEL, AN EFFECTIVE CBE PROGRAM INCLUDES:**

**Customization:** Because technology makes it possible to know a student's preferences, learning styles, influencers, motivations, and more, systems can make appropriate, individualized recommendations that faculty and students will come to trust and expect.

**Results-Driven Approach:** Students can do whatever works best for as little or as long as necessary to meet the defined competencies. This means that using the Personalized Learning tools and content of today as well as the emerging Adaptive Learning technologies of the future serve up an opportunity for students to master exactly what they need to in order to prepare for future careers.

**Student-Centered Experience:** Because students can move through programs in a way that meets their own needs, as well as leverage prior knowledge, learning is more efficient. Students can complete their education in a time frame that works for them, optimizing the overall cost of education and time to graduation.

**HELIX EDUCATION'S APPROACH**

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The emergence of CBE is challenging the role and functionality of the traditional Learning Management System (LMS), which, as Hill points out, is based on a traditional model using grades, seat time, and synchronous cohort of students. This is not easily adapted to serve CBE needs.<sup>13</sup>

EDUCAUSE predicts that as learning evolves to center on students, LMSs will likely become more personalized and customizable.<sup>6</sup> At Helix Education, we agree, and this is the driving factor behind the flexibility of Helix LMS.

Helix LMS enables Personalized Learning through a pretest that identifies areas of the course in which the student needs to focus and provides visible cues to the student. The LMS also supports Adaptive Learning by providing the student with suggested content based on student's performance on a formative assessment.

No matter the modality, Helix LMS delivers a single platform to serve CBE, on-campus, online, blended, or continuing education formats. Because of this, educators can adequately plan for, implement, measure, and evolve a CBE model, while simultaneously running and managing traditional learning models. This phased approach minimizes implementation challenges, allowing educators to better manage change and thoroughly test new programs, techniques, and learning models. Learn more about Helix LMS at [www.HelixEducation.com/LMS](http://www.HelixEducation.com/LMS).

At Helix Education, we are helping colleges and universities implement the best practices that impact the effectiveness of Personalized Learning, Adaptive Learning, and CBE. Through education technology's coming of age, we are facilitating the collection and immediate analysis of data to support unique student learning experiences in real time, and we are helping institutions implement and support the kinds of instructional strategies and education models that meet their needs. To learn more, visit Helix Education's CBE Resources page at [www.HelixEducation.com/CBE-Resources](http://www.HelixEducation.com/CBE-Resources).

**“Helix LMS enables Personalized Learning and Adaptive Learning experiences across all modalities of online learning through a single platform to serve CBE, on-campus, blended, online, or continuing education formats.”**

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