Mean What You Say:
Defining and Integrating Personalized, Blended and Competency Education

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iNACOL
International Association for K-12 Online Learning

OCTOBER 2013

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The mission of the International Association for K-12 Online Learning (iNACOL) is to ensure all students have access to a world-class education and quality blended and online learning opportunities that prepare them for a lifetime of success. iNACOL is a non-profit organization focused on research; developing policy for student-centered education to ensure equity and access; developing quality standards for emerging learning models using online, blended, and competency-based education; and supporting the ongoing professional development of classroom, school, district and state leaders for new learning models. **Learn more at www.inacol.org.**

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Introduction

The purpose of the personalized learning framework is to open student pathways and encourage student voice and choice in their education. Personalized learning is enabled by instructional environments that are competency-based. By tapping into modalities of blended and online learning using advanced technologies, personalized learning is enhanced by transparent data and abundant content resources flowing from redesigned instructional models to address the standards. By doing this, new school models can unleash the potential of each and every student in ways never before possible.

THIS PAPER IS INTENDED TO PROVIDE A SCAN OF THE LITERATURE AND EXPAND THE KNOWLEDGE BASE for the field to integrate the core ideas of personalized learning, blended learning, competency education, and standards. The goal of the paper is to explain the nuances of key terms used across the field of K-12 education related to personalized, blended and competency education, and how the ideas integrate in order to create new learning models. In sum, the goal of this paper is to make sense of the terms and how they fit together.

iNACOL experts receive feedback from thousands of practitioners each year as new learning models are planned, piloted and implemented around the globe using different models of blended and online learning. In our effort to develop this paper, we conducted literature reviews of the definitions, surveyed the field on definitions and concepts, hosted webinars, and conducted focus groups and interviews to inform our work.

We believe that there is a critical need to describe these terms of personalized learning, blended learning and competency education in the context of the dramatic shifts around next generation learning models and new school designs.

The first section of this paper describes personalized learning and its characteristics. The second section describes blended learning and how it supports personalization, and how the two concepts are different. The third section describes how competency education is the foundation for the idea of systemic transformation to new learning models that are student-centered (Jobs for the Future, 2012).[1] The fourth section describes the critical role standards play in structurally supporting personalized, blended and competency-based learning that is both rigorous and world-class.

1 From Students at the Center: critical and distinct elements of student-centered approaches to learning challenge the current schooling and education paradigm:
- Embracing the adolescent's experience and learning theory as the starting point of education;
- Harnessing the full range of learning experiences at all times of the day, week, and year;
- Expanding and reshaping the role of the educator; and
- Determining progression based upon mastery.

Designing for Personalized Learning

Working Definition of Personalized Learning: 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 of the highest standards possible.

THE MAJORITY OF THE CURRENT TRADITIONAL EDUCATION LANDSCAPE HAS A ONE-SIZE-FITS-ALL FEEL, where each student's education is not differentiated and all are expected to progress at the same time through the same curriculum. Personalization theory pushes educators to think outside the box by emphasizing the need for learners to be involved in designing their own learning process (Campbell & Robinson, 2007). In a personalized learning environment, learners have agency to set their own goals for learning, create a reflective process during their journey to attain those goals, and be flexible enough to take their learning outside the confines of the traditional classroom.

According to Miliband (2006), there are five phases of personalized learning:

1. *Assessment phase* – Teacher and students work together in a formative manner to identify strengths and weaknesses.
2. *Teaching and learning phase* – Teachers and students select learning strategies.
3. *Curriculum choice phase* – Student chooses the curriculum, creating a pathway for student choice.
4. *Radical departure from typical education models phase* – Built on student progress, this phase provides teachers the flexibility to choose their own teaching strategies.
5. *Education beyond the classroom phase* – Using social and community connections, students personalize their surroundings (with the help of the teacher, when needed) to create their ideal learning environment.

Many educators surveyed by iNACOL understand how personalization can transform learning. These educators shared their poignant comments below:

- Personalization is an understanding that tapping into unique interests, individual styles, and specific needs can make work and learning meaningful and authentic.
- Personalization is asking each student, "What is best for you?"
- Personalization is about relationships, knowing each individual student based on their academic and personal interests.

- Personalization is students accessing a curriculum that meets their individual needs, reflects their zone of proximal development, and gives them the opportunity to access resources to progress at their personal rate of learning.
- Personalization is engaging students with personal learner plans, where contributions from students, parents, support staff, and teachers provide a path for ubiquitous learning to address students' individual needs, interests, and learning styles.
- Personalization is every student learning at his/her own pace using the tools that help them learn and augment their strengths.
- Personalization is meeting the learner where they are, determining where they need to be, and finding and scaffolding the right zone of proximal development to get them there.

As can be seen by some of the responses from the field above, differentiation is part of personalizing learning, and it is essential in education. Many practitioners look to meet each student's needs via his or her zone of proximal development. Research supporting personalization of learning includes Bloom's classic 2 sigma learning studies, in which students who were tutored in a 1-to-1 ratio achieved two standard deviations above students who learned in a traditional school setting of a 30-to-1, student-to-teacher ratio (Bloom, 1984). The implications of the 2 sigma learning studies push educators to think about the shifting role of the traditional teacher from provider of knowledge to a group of students to a tutor of each and every student, offering personalized learning to each learner based on his/her mastery learning trajectory.

Without personalization there is a gap between the individual student, his or her learning, and the support they need to succeed in a way that makes sense to his/her interests. Personalization allows students to take ownership of their learning, giving them the opportunity to feel valued, motivated, in control. It also changes the dynamic between the teacher and the student.

What does personalization look like? Personalized learning…

- Is an education full of variety and choice;
- Always involves a relationship between the teacher and the student, as well as a strong sense of community within the class as a whole;
- Is a space where students have access to a wide range of subjects that meet their pathway needs and interests;
- Is, within each subject, a students' right to access learning experiences that enable them to progress according to their level of ability;
- Is an opportunity for students to make decisions about the direction of their learning; for example, they can pick the topic they are going to research for an assignment, the book for their book chats, and how they want to write the procedures for their lab work;
- Is a dynamic learning opportunity providing students with content that addresses their personal learning needs based on their interests, parental input, and teacher observation as well as assessment data, which is the most important element;
- Is students managing their own work calendars and daily schedules to stay on track, so they are free to move through courses at their own pace and have individualized learning paths and intervention plans;
- Is students using personal learning devices, such as mobile devices to individualize their learning and improve communication within the school community;

- Is the school community including multiple layers of support;
- Is students interacting and collaborating with each other and with the content;
- Emphasizes teachers interacting with the content, with students and with other teachers;
- Necessitates social-emotional connections built between students and teachers as the foundation of their work together;
- Means various starting points within content, varied amounts of guided practice and independent practice as needed.

Personalization is about many ideas. It is about…

- Discovering students' prior knowledge and experience of the content they are about to learn and meeting them where they are;
- Guiding students to make healthy academic decisions;
- Developing learning communities that celebrate the individuality and contributions of each student; and
- Consolidating forms of student learning data so that they are useful for planning for personalized instruction.

To personalize learning is to encourage students to develop clear goals and expectations for achievement and support them to make good decisions in a challenging and rigorous learning environment. It's a space where teachers are allowed the time they need to work with students; design instruction that is rigorous, flexible, and adaptable; and focus on critical thinking and metacognitive practices to develop stronger, deeper, independent learning.

In "How Children Learn," which was developed by the International Academy of Education, there are 12 elements, with supporting research, that were developed to guide the design of instruction and curriculum to support children's learning (Vosniadou, 2001). These design elements, illustrated in Table 1, should be used to guide the design of personalized learning environments.

All of the elements in Table 1 are important in the process of personalization. Additionally, according to educators from the field, the following are the top ten essential components of personalization:

1. Student agency (student has voice and choice on level of standards/lesson and some control over how they learn)
2. Differentiated instruction
3. Immediate instructional interventions and supports for each student is on-demand, when needed
4. Flexible pacing
5. Individual student profiles (personalized learning plan)
6. Deeper learning and problem solving to develop meaning
7. Frequent feedback from instructors and peers
8. Standards-based, world-class knowledge and skills
9. Anywhere, any time learning can occur
10. Performance-based assessments — project-based learning, portfolios, etc.

Table 1. 12 Elements for Designing Instruction and Curriculum to Support Children's Learning

Element	Description of Element	Element's Supporting Research
Active involvement	Learning requires the active, constructive involvement of the learner.	Elmore, Peterson & McCarthy, 1996; Piaget, 1978; Scardamalia & Bereiter, 1991
Social participation	Learning is primarily a social activity and participation in the social life of the school is central for learning to occur.	Brown et al., 1996; Collins, Brown & Newman, 1989; Rogoff, 1990; Vygotsky, 1978
Meaningful activities	People learn best when they participate in activities that are perceived to be useful in real life and are culturally relevant.	Brown, Collins & Duguid, 1989; Heath, 1983
Relating new information to prior knowledge	New knowledge is constructed on the basis of what is already understood and believed.	Bransford, 1979; Bransford, Brown & Cocking, 1999
Being strategic	People learn by employing effective and flexible strategies that help them to understand, reason, memorize, and solve problems.	Mayer, 1987; Palincsar & Brown, 1984; White & Frederickson, 1998
Engaging in self-regulation and being reflective	Learners must know how to plan and monitor their learning, how to set their own learning goals and how to correct errors.	Brown, 1975; Boekaerts, Pintrich & Zeidner, 2000; Marton & Booth, 1997
Restructuring prior knowledge	Sometimes prior knowledge can stand in the way of learning something new. Students must learn how to solve internal inconsistencies and restructure existing conceptions when necessary.	Carretero & Voss, 1994; Driver, Guesne & Tiberghien, 1985; Schnotz, Vosniadou & Carretero, 1999; Vosniadou & Brewer, 1992
Aiming towards understanding rather than memorization	Learning is better when material is organized around general principles and explanations, rather than when it is based on the memorization of isolated facts and procedures.	Halpern, 1992; Resnick & Klopfer, 1989; Perkins, 1992
Helping students learn to transfer	Learning becomes more meaningful when the lessons are applied to real-life situations.	Bruer, 1993; Bransford, Brown & Cocking, 1999; Bereiter, 1997
Taking time to practice	Learning is a complex activity that cannot be rushed. It requires considerable time and periods of practice to start building expertise in an area.	Bransford, 1979; Chase & Simon, 1973; Coles, 1970
Developmental and individual differences	Children learn best when their individual differences are taken into consideration.	Case, 1978; Chen et al., 1998; Gardner, 1991; Gardner, 1993
Creating motivated learners	Learning is critically influenced by learner motivation. Teachers can help students become more motivated learners by their behavior and the statements they make.	Deci & Ryan, 1985; Dweck, 1989; Lepper & Hodell, 1989; Spaulding, 1992

Scott Benson, Program Officer for the Bill & Melinda Gates Foundation, identified the following working list of essential attributes for a personalized learning model (2013):

- Learner Profiles: Captures individual skills, gaps, strengths, weaknesses, interests & aspirations of each student.
- Personal Learning Paths: Each student has learning goals & objectives. Learning experiences are diverse and matched to the individual needs of students.
- Individual Mastery: Continually assesses student progress against clearly defined standards & goals. Students advance based on demonstrated mastery.
- Flexible Learning Environment: Multiple instructional delivery approaches that continuously optimize available resources in support of student learning.

Compare these essential attributes to what most traditional one-size-fits-all classroom environments look like: learner profiles with precise knowledge and skills, students with personal learning paths versus a lecture-based learning experience; flexible learning environments with a variety of modes, resources and modalities (e.g. connectivism, as illustrated in Figure 1) versus one approach for all students at the exact same pace using a single textbook. Today, with these contrasts, the vast majority of traditional classrooms in the K-12 education system are far from realizing the promise of personalized learning. However, this is where the shift to blended learning instructional models can begin to incorporate the essential elements for personalized learning — providing a roadmap and solution as a method or *modality* for delivery — and a means to transform education to student-centric learning. Realizing this transformation requires highly personalized, blended learning environments designed and built upon competency education.

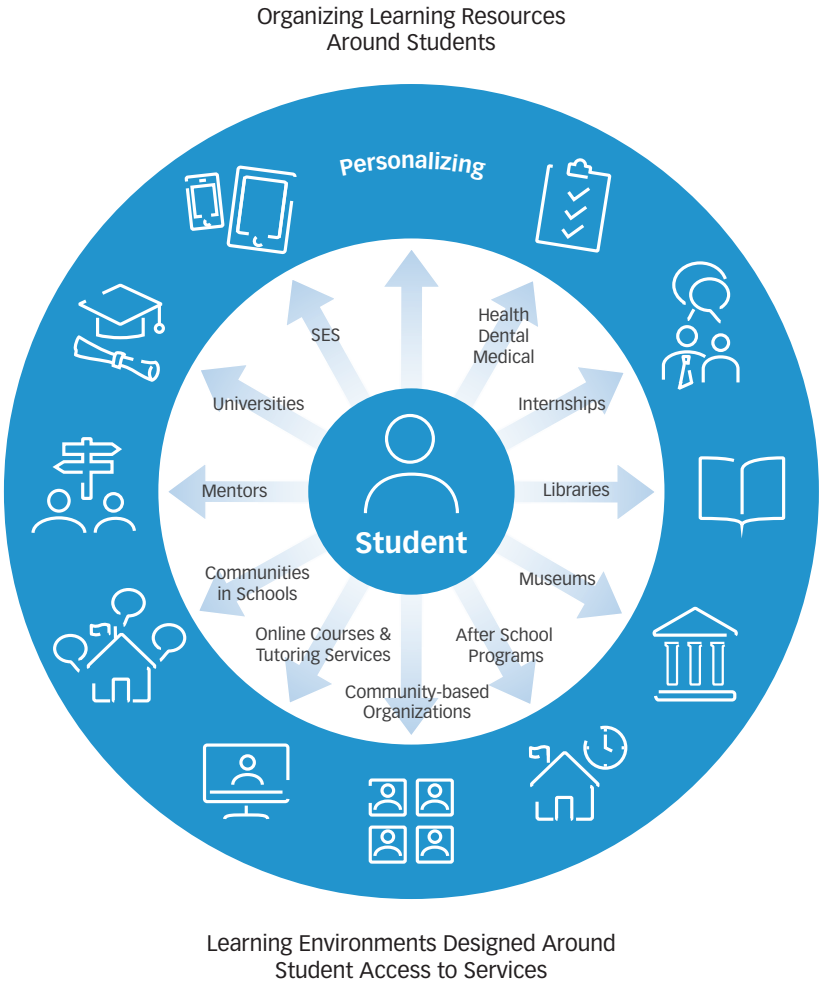


Figure 1. Educating Beyond the Classroom: Connectivism in Action

As Sir Ken Robinson said, "Education doesn't need to be reformed—it needs to be transformed. The key is not to standardize education, but to personalize it, to build achievement on discovering the talents of each child, to put students in an environment where they want to learn and where they can naturally discover their true passions" (2009).

Blended Learning: Using the Tools to Support Personalization

"Blended learning is about the ability to personalize instruction. The only way to do that is for teachers to use the data constantly to individualize instruction and provide targeted instruction. It isn't about the tech, it is about the instructional model change. Blended learning is not about whether you are just giving a kid a computer."

– Samantha Sherwood, Assistant Principal, Bronx Arena High School in New York City

IT IS DIFFICULT TO IMAGINE BEING ABLE TO IMPLEMENT PERSONALIZED LEARNING WITHOUT TECHNOLOGY. The tools in blended and online learning can support flexible pacing, differentiated instruction, immediate interventions, and anywhere, any time learning.

What is most important is to understand the nuanced differences between blended learning models and the instructional designs that can enable personalized learning and how personalized learning itself can be a driving concept for new learning models. Blended learning is a combination of face-to-face learning experiences and online learning platforms, content, and tools for personalizing instruction. True blended learning is a modality to realize a fundamental shift in the instructional model toward personalized learning.

This section of the paper will explore:

- How does blended learning enable personalized learning?
- How does blended learning change instructional design?
- How does blended learning enable student co-design?

It is important to examine blended learning models to evaluate the extent to which high-quality implementations create major shifts in the instructional design — from the differences in educator roles in traditional, one-size-fits-all classrooms (one teacher, one textbook, one pathway to learning objectives) — and transform learning experiences to result in personalized learning opportunities to optimize teaching and learning. Thus, blended learning is about the transformation of the *instructional design* toward personalized learning with teachers and students harnessing advanced technological tools to accomplish the shift toward personalization by design.

Blended learning instructional designs leverage the strengths of both the classroom and online modalities. The blended learning instructional model shifts have the potential to result in "learning optimization" to create more personalized learning opportunities.

What blended learning offers is a rational approach, focused on redesigning instructional models first, then applying technology, not as the driver, but as the enabler for high-quality learning experiences that allow a teacher to personalize learning and manage an optimized learning enterprise in the classroom.

Blended Learning As a GPS — Destination: Success

Today, with a GPS, it is almost impossible to get lost. The GPS knows multiple ways to your destination. You have access to information on the routes, speed of travel, the time to destination, and places of interest along the way to explore.

Imagine if today's learning environments were re-imagined to work more akin to the experience of using a GPS when you are driving.

Just as a car's GPS system provides an immediate alert when a wrong turn is made or the driver gets stopped in a traffic jam, a learning system can provide immediate feedback to keep a student aware of the pacing and progress toward their learning goals — and advise them when they need help.

Effective blended learning environments provide this GPS for students and teachers, allowing them to navigate with flexibility along individual pathways for truly personalized learning.

A next generation education system would offer each student their own GPS-like dashboard for learning so that each student would know if they were on track toward their destination — graduation, college and career-readiness — every moment of every day and every point along the way.

You'd no longer have to wait until the end of a grading period or school year to take a summative assessment for accountability to show whether you are on or off-track. With a GPS, the moment a student makes a wrong turn, the system would help let the student know to turn around, to seek help and exactly where to find resources to get back on their route toward success and graduation.

Blended learning offers a vehicle for optimizing the instructional design toward personalization through transparent data dashboards and a personalized learning map for enhancing a student's choice of path. This flexibility allows students to access multiple resources and a variety of content (with reviews and recommendations), but provides a clear profile of how far they have traveled along their pathway and the work still needed to continue along the pathway if they are to achieve success.

Not every student's learning happens along a straight line. Side trips — peaked by interests that contribute to the broader acquisition of an individual's knowledge and skills — can bring joy to the journey.

The blended learning journey is supported by people harnessing advanced, adaptive technologies that provide immediate feedback on time to destination, re-routing or help in order to get back on track, and opportunities to dive into areas of unique interests for deeper learning along the way. The journey is not necessarily linear, and a student is able to take multiple pathways to achieve their learning goals and explore based on individual interests — all while co-piloting with educators and receiving regular feedback on progress so they don't get lost.

A GPS for learning is an apt analogy to demonstrate how blended and online learning environments can be a vehicle for personalized learning through use of a customized dashboard display showing real-time information and offering tools to support optimized pathways along a personalized learning journey toward graduation and student success.

> "The result of smart blended learning is richer and deeper interactions between teachers and students (and between students themselves) than in traditional classrooms. Integrating technology and teaching allows students to fully master content and skills, and at the pace that's right for them… Think about it this way: an average classroom sets a "speed limit" for the class — bounded by grade-level standards and assessments — making it hard for some kids to catch up and holding others from moving ahead when they're ready. But blended learning revs up students' learning velocity, allowing them to go further and faster. Who knows how far they'll go?
>
> Simply adding online computer games or videos to a student's day or homework time doesn't count as blended learning. Neither does rolling a laptop cart into a school. Nor does it mean that students are isolated at their keyboards with no social interaction."
>
> – Education Elements, 2012

Additionally, these blended learning designs should allow for greater interactions throughout the learning process between students and teachers, students and other students, students and increased content resources and pathways, students to outside resources (experts, courses, community resources, etc.), which occur at any time and place, and provide greater access to data/information about real-time proficiency levels for students, teachers, parents and administrators.

Blended learning should focus across a student's personalized learning map (in K-12 education) on what a student has demonstrated they know, what they can do and where they are going, in a student profile — and work to fill gaps and accelerate learning opportunities to keep every student on pace toward an on-time graduation. This student profile is an important cornerstone for blended learning environments to be able to examine how students are moving along in their progressions for attaining standards, and also where the gaps are in their knowledge that must be addressed. Blended learning instructional designs should require every student's progress to be closely monitored and any gaps to be filled upon identification. Understanding exactly where a student enters the program through a benchmark or entry assessment to determine progression on mastery is a key design element for student-centered blended programs. As a student moves through the learning progressions and standards, their student profile will indicate the level of mastery and provide evidence of how the student demonstrated the competencies based on a performance or project. Thus, student profiles also include evidence of the work, usually captured within an electronic portfolio (e-portfolio) system, which showcases examples of the student's projects, writing and demonstrations. When students have gaps in proficiency across the learning progressions, it is important to address these so that the student has the foundation for moving ahead and staying on track for future learning. Building on competency-based instructional designs, blended learning should ensure that failure is not an option and offer immediate interventions when a student is not demonstrating mastery.

There are operational implications of blended learning instructional models — including structural changes that can explore more effective use of human capital/talent, facilities, time, resources, and technology to support personalized learning. When implemented effectively, a blended learning program can make better use of instructional resources and facilities, and increase content and course availability, thus speeding up the pathway to graduation for students (Dzuiban et al., 2004).

True blended learning is a modality to realize a fundamental shift in the instructional model toward personalized learning.

The key questions to ask about blended learning are:

To what extent does the blended learning environment offer transformed instructional design models that provide for optimizing personalized learning in a classroom or in a school?

Does each student have an individual student profile of their history and performance over time?

How well do blended instructional models include immediate supports and services to students having difficulty demonstrating proficiency or with gaps in knowledge and skills?

To what extent do the blended learning instructional models provide for multiple pathways to success?

Horn and Staker's definition expresses that "blended learning is any time a student learns, at least in part, at a supervised brick-and-mortar location away from home and, at least in part, through online delivery with some element of *student control over time, place, path, and/or pace*. The modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience" (Horn & Staker, 2013).

The most important component of the definition is the "element of student control" highlighting that blended learning designs need to shift instructional models to enable increased student-centered learning, so that students have increased control over the time, place, path, and/or pace of their learning pathways.

From the Jobs for the Future report on Students at the Center (2012), the definition of student-centered learning has four distinct elements for student-centered approaches to learning that explicitly challenge the current schooling and education paradigm:

- Embracing the adolescent's experience and learning theory as the starting point of education;
- Harnessing the full range of learning experiences at all times of the day, week, and year;
- Expanding and reshaping the role of the educator; and
- Determining progression based upon mastery.

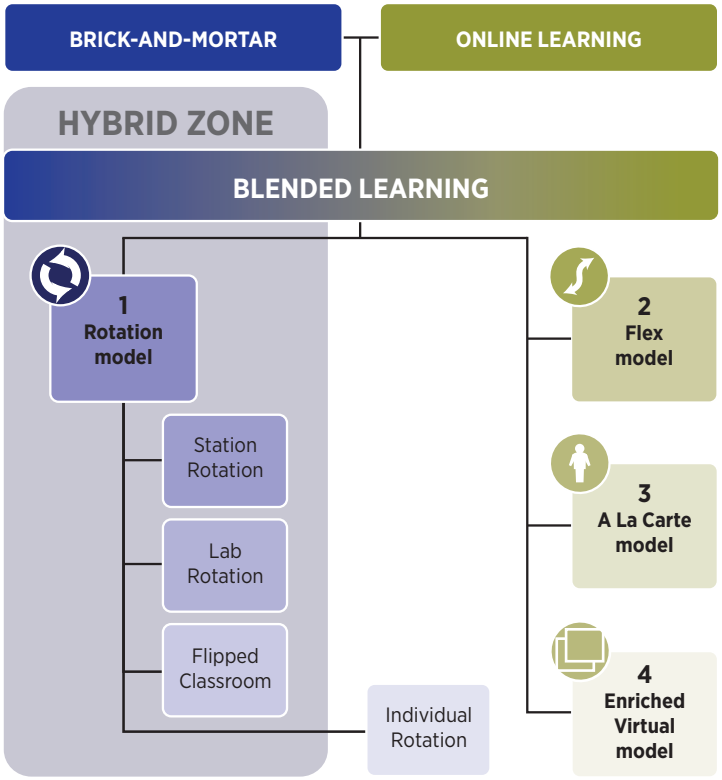
For blended learning modalities to create student-centered learning, teachers and students in the blended environment would: 1) understand the student's experience and what level the student's proficiency is upon entry; 2) enable an entire range of learning experiences and student services and supports for any time, every where learning; 3) expand and reshape the role of the educator; and 4) determine the student's progression upon mastery, allowing them to move on when ready.

Through this lens blended learning program leaders can better understand whether the modality is simply blended in name only, or is addressing the student control and student-centered approaches. Thus, Horn and Staker's blended learning definition asks the blended modality to enable the student to have increased control over time, place, path and pace. The difference between solely using technology in addition to teacher-centered instructional models and understanding the fundamental shift using blended learning implementations toward transformed, student-centered instructional models is getting clearer.

In Figure 2 are Christensen, Horn and Staker's four blended learning models. We feel that more attention in blended learning implementations should be focused on the *shifts in instructional design* and course design at the *classroom-level* that exist in each implementation of the four blended learning models.

The **Rotation** model is one in which within a given course or subject (e.g., math), students rotate on a fixed schedule or at the teacher's discretion between learning modalities, at least one of which is online learning. Other modalities might include activities such as small-group or full-class instruction, group projects, individual tutoring, and pencil-and-paper assignments. The Rotation model has four sub-models: Station Rotation, Lab Rotation, Flipped Classroom, and Individual Rotation.

Figure 2. Christensen, Horn and Staker's Four Blended Learning Models



The **Station Rotation** model — or what some refer to as the Classroom Rotation or In-Class Rotation model — is one in which students rotate within a contained classroom.

- The **Lab Rotation** model is one in which the rotation occurs between a classroom and a learning lab for online learning.
- The **Flipped Classroom** model is one in which the rotation occurs between the school for face-to-face teacher-guided practice (or projects) and the home or other off-site location for online content and instruction.
- The **Individual Rotation** model differs from the other Rotation models because each student in essence has an individualized playlist and does not necessarily rotate to each available station or modality.

The **Flex** model is one in which online learning is the backbone of student learning, even if it directs students to offline activities at times. Students move on an individually customized, fluid schedule among learning modalities, and the teacher of record is on-site.

The **A La Carte** model is one in which students take one or more courses entirely online with an online teacher of record and at the same time continue to have brick-and-mortar educational experiences. Students may take the online courses either on the brick-and-mortar campus or off-site.

The **Enriched Virtual** model is a whole-school experience in which within each course (e.g., math), students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction.

The Clayton Christensen Institute's definition and models of blended learning are very important for the field and provide a taxonomy for the K-12 education field on a macro level. However, in order to get to what quality looks like in practice and effective implementation, we need to have a conversation about those items at the micro level.

The key to ensuring that blended learning is beneficial to students is to focus on *how it enables personalized learning and instruction*. Blended learning is not teachers simply putting lesson plans online or content resources online. It is not just having teachers recording lessons so that all students do the exact same lesson in the same format with the same pacing each day. One-to-one laptop or tablet initiatives or students using the latest technological devices, software or digital content alone does not equal a blended learning model. While there may be certain educational benefits to these examples of integrating technology in education, such as increased learner engagement (Taylor & Parsons, 2011), the concept and definition of blended learning is more focused on transformation of instructional models toward student-centered learning.

Blended learning involves an explicit shift of the classroom-level instructional design to optimize student learning and personalize learning. Blended learning implementations should provide greater student control and flexibility in pathways for how a student learns, where and when a student learns and how they demonstrate mastery.

Simply, blended learning is a delivery mechanism for personalized learning. To be clear, as the prior section on personalized learning outlines — it is possible to do personalized learning without technology — but it is very difficult to scale personalized learning for each student in a classroom and school without effective and meaningful applications of technology to enable the differentiation and flexibility in pacing required.

Blended learning is not teachers simply putting lesson plans online or content resources online. It is not just having teachers recording lessons so that all students do the exact same lesson in the same format with the same pacing each day. One-to-one laptop or tablet initiatives or students using the latest technological devices, software or digital content alone does not equal a blended learning model. While there may be certain educational benefits to these examples of integrating technology in education, such as increased learner engagement (Taylor & Parsons, 2011), the concept and definition of blended learning is more focused on transformation of instructional models toward student-centered learning.

In this way, blended learning optimizes teaching and student-centered learning. It is learning beyond a single textbook. Think about how difficult it is for a teacher trying to personalize learning without the underpinning technologies to support the data-driven instruction required for differentiated strategies. It is very difficult for a teacher to personalize instruction for each individual student in a class of twenty-five students in a brick-and-mortar classroom using only a single textbook. It can be done, but it is incredibly demanding and challenging. The technology itself is not a silver bullet.

In blended learning environments, the educator optimizes learning for students by assessing progress and providing student supports. In these new models, students are supported and interventions are wrapped around the student-centered instructional models at every point through the learning trajectories. All of these things can be done in a traditional brick-and-mortar classroom, but one of the great benefits of blended learning is that the technology helps to provide teachers with data, expand student choices for educational resources and learning materials, and provide opportunities for students to practice and to demonstrate high levels of performance. However, blended learning isn't about the technology; rather, it is about empowering educators to better understand how to support and differentiate instruction for kids and make their learning experiences engaging and meaningful.

In blended learning — it is the magic of optimizing the face-to-face classroom with instructional models for personalized learning for teachers using online learning modalities and advanced technologies to accelerate and improve individualized learning experiences for each and every student, with real-time data on exactly how well each student is progressing.

"Blended instruction combines the best of empowering technology and human touch so we can help each student learn more than ever before."

– Alex Hernandez, partner at the Charter School Growth Fund

Blended Learning Enables Resources and Tools to Drive Personalization

What blended learning offers is a rational approach, focused on redesigning instructional models first, then applying technology, not as the driver, but as the enabler for high-quality learning experiences that allow a teacher to personalize learning and manage an optimized learning enterprise in the classroom. In blended learning environments, the technology optimizes the learning environment in a way that school leaders and instructors now know how and where to re-deploy their resources. In these "optimized environments," instructional approaches to blended learning must take into account changing roles of educators. The research on blended learning describes the changing roles of educators as "facilitators of learning, monitors of progress and graduation coaches" (See Keane, Irvin, de la Varre, & Hannum, 2010; Pettyjohn, Kennedy, & LaFrance, 2012).

Dziuban, Hartman and Moskal (2004) in a research brief for EDUCAUSE titled "Blended Learning" noted:

> Blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities. In other words, blended learning should be approached not merely as a temporal construct, but rather as a fundamental redesign of the instructional model with the following characteristics:
>
> - A shift from lecture- to student-centered instruction in which students become active and interactive learners (this shift should apply to the entire course, including face-to-face contact sessions);
> - Increases in interaction between student-instructor, student-student, student-content, and student-outside resources;
> - Integrated formative and summative assessment mechanisms for students and instructor.

Redesigned instructional models in blended learning enable teachers to provide each and every student with the flexibility for the learner to maximize how, when, where, and what they are learning — aligned to clear learning goals and objectives set by the teacher (academic standards and competencies). Blended learning offers a way to increase content resources, organize real-time information about the learner's progress through student profiles and personalized learning plans, and support immediate interventions through differentiated learning strategies.

Blended teaching provides educators with a toolkit of strategies, methods and resources to personalize and differentiate instruction in effective, efficient, meaningful ways. Assistant Principal of the Bronx Arena High School in New York City, Samantha Sherwood, explains: "Our teachers see blended learning as a tool to reinvent their craft. It is more about the instructional model practice change with tools to support a model where it is student-centered. Blended learning is about the ability to personalize instruction. The only way to do that is for teachers to use the data constantly to individualize instruction and provide targeted instruction. It isn't about the tech, it is about the instructional model change. Blended learning is not about whether you are just giving a kid a computer."

iNACOL's New Learning Models Vision

THE VISION OF INACOL IS TO TRANSFORM K-12 EDUCATION TOWARD A STUDENT-CENTERED LEARNING SYSTEM.

> *New learning models personalize learning using competency-based approaches, supported by blended and online learning modalities and environments.*
>
> *Teachers use technology daily to analyze and utilize real-time data to differentiate instruction, customize learning and to engage students in deeper learning. All students are responsible for their own learning and work at their own pace by demonstrating mastery of required concepts, resulting in higher achievement and ensuring all students are prepared for both college and career.*

The ultimate power of blended and online learning lies in their potential to transform the education system and enable higher levels of learning through competency-based approaches. Technology-based models can allow for rapid capture of student performance data and differentiated instruction tailored to the specific needs of individual students. By adapting instruction to reflect the skills and knowledge students have mastered, blended and online models have the potential to keep students engaged and supported as they learn and to help them progress at their own pace, leading to dramatically higher levels of learning and attainment.

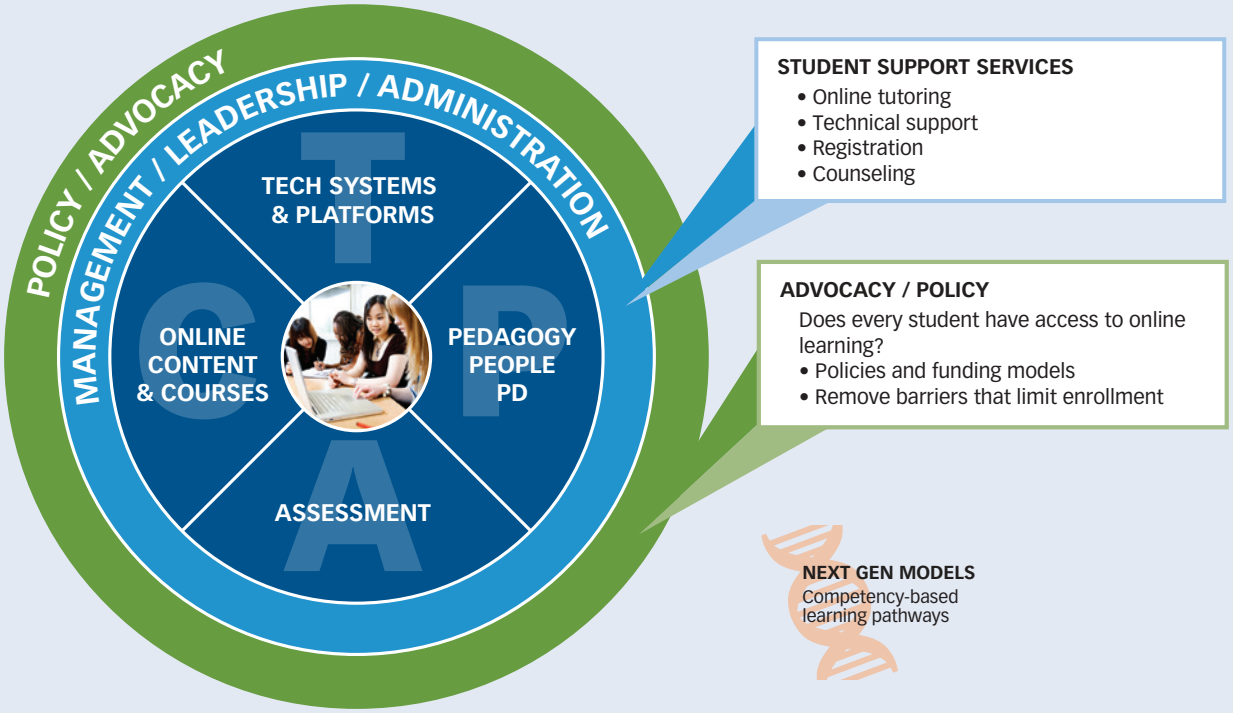
What New Learning Models Look Like

The goal of the iNACOL New Learning Models vision is to assist educators in transforming each child's educational journey into a more personalized, engaging learning experience in order to improve student outcomes.

When planning and implementing New Learning Models using blended and online learning, there are several elements to consider to ensure quality. iNACOL has developed the New Models Using Online & Blended Learning TPAC framework (Patrick, 2011) shown in Figure 3 that describes each of these elements. The student is at the center with each element supporting their individual learning. While technology ("T") is listed at the top of the list, and is essential to the development of these new models, the "P" embraces the importance of people, new pedagogical models, and professional development to transform the old system into more student-centered models. These models require a shift in mindset around leadership, pedagogy and staffing roles for all educators.

Each of the elements in the graphic are essential to planning and implementing New Models of Learning as described in the vision statement. However, to truly transform learning to a personalized experience for each student, iNACOL has identified eight design principles that will shift the instructional model at the classroom level in order to meet our vision.

Figure 3. New Models Using Blended & Online Learning TPAC Framework



T **TECHNOLOGY PLATFORMS**

- Enterprise architecture
- Learning management system/virtual learning environment
- 1:1 computing
- Broadband internet infrastructure
- New SIS models for standards-based and competency-based approaches

P **PEOPLE / PEDAGOGY / PD**

- Teachers need new skills to teach online
- Administrators need new skills to manage online programs
- New Response to Intervention (RTI) models through blended
- Personalizing instruction allowing students to accelerate at their own pace

A **ASSESSMENT**

- Online / adaptive
- Personalization engines
- Performance-based

C **ONLINE CONTENT**

- Online courses
- Dual enrollment
- Credit recovery
- Common core curriculum

Continuums: Design Principles of New Learning Models

Personalized – A 2013 iNACOL survey of the K-12 blended and online education field identified the top ten essential components of personalization as:

- Student agency (student has voice and choice on level of standards/lesson and some control over how they learn);
- Differentiated instruction;
- Immediate instructional interventions and supports for each student is on-demand, when needed;
- Flexible pacing;
- Individual student profiles (personalized learning plan);
- Deeper learning and problem solving to develop meaning;
- Frequent feedback from instructors and peers;
- Standards-based, world-class knowledge and skills;
- Anywhere, anytime learning can occur; and
- Performance-based assessments, such as project-based learning and portfolios of student work.

Student-Centered

- Learning environments respond to each student's needs and interests, making use of new tools for doing so. Critical and distinct elements of student-centered approaches to learning challenge the current schooling and education paradigm. From Students at the Center.
- Embracing the adolescent's experience and learning theory as the starting point of education;
- Harnessing the full range of learning experiences at all times of the day, week, and year;
- Expanding and reshaping the role of the educator; and
- Determining progression based upon mastery.

Equitable and Accessible for All Students

- Provides access to courses, experiences, and teachers they would otherwise not have;
- Meets the individual learning needs of each student, including students with disabilities;
- Results in equally or more rigorous learning opportunities for students;

- Provides multiple methods of instruction (context, content, and instructional methodology) to ensure that students from different cultures and life experiences have the opportunity to succeed; and
- Digital content is designed using the principles of Universal Design for Learning (UDL) so that the content is accessible to all students.

Result in Higher Student Achievement

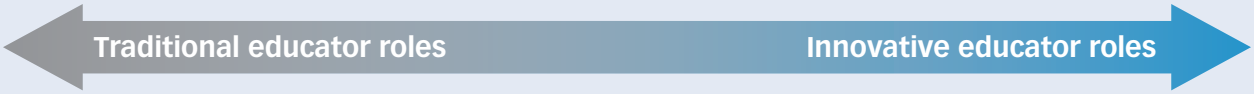
- Use competency-based models to ensure student mastery;
- Use data to drive instruction through the analysis of frequent and varying forms of assessment;
- Use valid and reliable assessments in ways that are meaningful to students; and
- Assess students on their performance in multiple ways and multiple times to ensure they have reached proficiency (may include adaptive assessments, formative assessments, imbedded assessments, performance-based assessments and summative assessments).

Technology-Enhanced

- Provide opportunities for students to collaborate with teachers and peers, unlimited by proximity;
- Students engage with digital content, which can occur anytime, anyplace, and have multiple pathways that are competency-based and not tied to a fixed school calendar; and
- Integrate student information and learning management systems designed around competency-based approaches, providing data to support students, teachers, and schools for improving performance.

Affordable and Sustainable

- Approaches add productivity and value to ensure cost-effectiveness. It is important to monitor the relationship between results and services and spending in order to be effective;
- Integrate blended and online learning into essential K-12 education funding process;
- Allow funding to follow students down to the course level;
- Performance-based funding may tie (at least part of) K-12 funding to student growth, rather than "seat time";
- Use public and private partnerships to achieve efficiencies and avoid "re-inventing the wheel"; and
- New learning models are sustainable on recurring public revenue after four years of launching and implementation.



Flexible Staffing Models

- Teachers "coordinate student learning" through the expanded use of technology-based tools and content, as well as the effective use of outside experts, out-of-school and/or community resources;
- Environments provide flexibility to mix schedules of online and physical instruction. With a highly flexible schedule, instruction and learning are possible 24x7;
- Support structures (e.g. online tutoring, home mentors, and technical support services) are in place 24x7 in addition to teacher support;
- Revise human resources policies to include a team approach to educating students, shifting educator roles, with reconsidered expectations for teaching staff to have greater expertise in instruction and assessment, and greater flexibility in hiring; and
- Provide adequate support for educators including integrated student information and learning management systems, coaching in instruction and assessment, and opportunities for educators to build a common understanding of proficiency.

Ensure Robust Competencies and High Standards for All Students

- Include academic and efficacy standards;
- Structure learning objectives so that they are explicit and measurable;
- Align with standards benchmarked for college readiness and success after high school, such as Common Core State Standards, college entrance requirements, or globally-benchmarked standards;
- Outcomes Include Understanding and Application of Knowledge, Skills, and Dispositions Through Demonstration of Deeper Learning and Evidence Toward College and Career-Ready, World-Class Standards; and
- Content is rigorous, developmentally appropriate, and based on the science of learning (Sturgis, Rath, Weisstein, & Patrick, 2010).

Next Steps

There is much to be done to achieve this promise. While enrollment in blended and online and models is growing rapidly, the field is still nascent and there is great diversity in the effectiveness of courses and content available today. Increasing access alone will not lead to better outcomes for students. In order for blended and online learning to transform the education system, it is essential that the models available are of high quality and successfully increase achievement. Fulfilling the potential of a student-centric, competency-based system will require that the field of blended and online learning — and the policy environment in which it operates — evolve to demand models that are not only different, but more effective than traditional schooling.

iNACOL wants to accelerate the development of effective new learning models necessary in order for the field to achieve its potential, enabling all students to achieve success. Blended and online learning models that are competency-based provide enormous potential for transforming the education system toward student-centered, personalized learning.

iNACOL's ambitious vision of blended and online learning models requires research, development and identification of promising practices to better understand where the field is today relative to that potential. iNACOL will continue to work with its networks across the field of K-12 education to lead innovation through collaboration on research, development, rapid prototyping, sharing information, building tools and capacity in the field to implement and sustain a variety of new learning models.

Karen: A student's perspective on blended learning

Karen is an eight year old in Michigan. Her neighborhood school is in the bottom 5% in the state. Her parents wanted to find a new school for her to attend to give her a better chance at making her dream of becoming a Veterinarian a reality. In Karen's new school, students are not placed in grade levels based on their age, they are grouped into classrooms based on their individual abilities.

Each student in Karen's class set individual learning goals each week for each subject area. Sticker charts cover the classroom walls to track student progress. Classrooms look chaotic with some of Karen's classmates working through concepts on the computer, while others are working in small groups with the subject expert teacher to learn new concepts or getting extra help on previously taught concepts with the classroom tutors. Other students are creating projects to demonstrate their understanding of multiple concepts.

Karen loves that she gets to learn in a variety of ways both independently and with her classmates. While she struggles in Reading, she can get the extra, individualized help she needs from her teacher and classmates, but can excel through her math course without waiting for the other students to catch up. She has several options both in the online content she learns from to the types of projects she creates to demonstrate her understanding of concepts.

In summary, blended learning and other new learning models can optimize personalized learning experiences for students using the best of face-to-face and online resources but it must be focused on supporting and alignment to an intentional transformation of the classroom-level instructional designs. Blended learning and personalized learning are not synonyms — but blended and online learning can provide a powerful delivery modality for personalized learning both inside and outside of classroom walls, by supporting student agency, voice and control over path, place and pace of learning.

Personalization is Supported by Competency Education Systems

TO BE CLEAR, PERSONALIZED LEARNING IS NOT EQUAL TO COMPETENCY-BASED LEARNING — but they are related and terms are often (mistakenly) used interchangeably. Competency-based learning is a system of education, often referred to as proficiency or mastery-based, in which students advance and move ahead on their lessons based on demonstration of mastery. In order for students to progress at a meaningful pace, schools and teachers provide differentiated instruction and support. People across the field of K-12 education are using the terms competency-based, proficiency-based, mastery-based, performance-based interchangeably in their own contexts — however, we use the term competency education.

To be clear on what we mean by competency education, Sturgis and Patrick (2011) developed a five-part working definition in partnership with the field at the Competency-based Education Summit hosted by iNACOL and Council of Chief State School Officers (CCSSO):

1. Students advance upon demonstrated mastery.
2. Competencies include explicit, measurable, transferable learning objectives that empower students.
3. Assessment is meaningful and a positive learning experience for students.
4. Students receive rapid, differentiated support based on their individual learning needs.
5. Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.

In a competency-based education system, students understand learning objectives and also know what they must "know and show" to be proficient. If a student does not demonstrate adequate proficiency to advance, they must be provided with supports and interventions that help them fill the gaps in their knowledge and skills.

When we think about the traditional "time-based system," students essentially have variable amounts of learning in fixed amounts of time — quite simply allowing students to have varying levels of gaps as they move through the system with passing grades. For example, in a time-based system, even a "B" average in a course assumes the student may be missing 15-20% of the content knowledge. Students are passed on with "C"s and "D"s, unprepared for the next course.

Competency-based models rely on students demonstrating their competencies toward the attainment of a degree or diploma, in K-12 education and in higher education. Students may take multiple pathways to acquire competencies. Competency education supports student-centered, new learning models that bridge formal and informal learning — allowing students to demonstrate competency in a wide variety of ways by learning content through different modalities, experiences and methods — inside and outside of school walls. The same high standards that exist for graduating are set for all students to maintain rigor — but students have greater voice and choice in how, where, when and what they are learning to achieve competency (aligned to the standards) and how they demonstrate mastery through a performance.

Competency education models challenge a key policy issue — awarding credit based on the amount of time a student is in a seat, or seat-time, for each course, regardless of what was learned. Most blended learning models occur within classrooms. However, there is a need for blended learning using competency-based approaches to provide flexibility for learning to take place inside and outside of the school building for students to have control and flexibility over path, place and pace. Right now, seat-time policies at the local and state level may limit a student's ability to engage in an internship while attending a blended learning high school, to earn credit while learning outside of the traditional school day. If the learning were based on students demonstrating competencies, with adequate policies for quality, accountability and assessment of learning — students could acquire knowledge from both formal and informal settings and demonstrate the knowledge for credit in schools. Competency education models are a foundation to transform and open anytime, everywhere learning that enables personalized learning in powerful ways.

Using the five-part definition of competency education, Table 2 describes how competency-based and personalized learning fit together.

Table 2. Where Competency-based Learning and Personalized Learning Converge

Competency Education 5-Part Definition	How Personalized Learning Strategies Are Enabled by Competency Education Systems
Students advance upon demonstrated mastery.	Each student has a personalized learning plan. Individual students demonstrate mastery to advance to the next level by mastering each learning objective in the plan.
Competencies include explicit, measurable, transferable learning objectives that empower students.	Each student sets learning goals & objectives with their teachers. Student-driven participation is involved in developing the learning process. Learning resources, flexible learning environments, pathways within and outside of school, applications, modalities, and diverse experiences are encouraged that align to the learning objectives, consistent with the individual needs of students. Clear learning objectives and goal setting based on student voice and choice help personalized learning thrive.
Assessment is meaningful and a positive learning experience for students.	Teacher and students work together in a formative manner to identify strengths and weaknesses (Miliband, 2006). Performance-based assessments enable individual students to demonstrate mastery in diverse ways. Systems of assessments are used to support frequent feedback loops from entry through progressions using embedded and formative methods to track progress in the learning environment, as well as project-based, performance-based assessments providing feedback on each individual student's skills, gaps, strengths, and weaknesses. Personalized learning strategies enable students to demonstrate knowledge attainment by relating to their own interests and aspirations.
Students receive rapid, differentiated support based on their individual learning needs.	Differentiated instruction is provided with facilitated interactions at the point a student needs support to stay on their "learning edge" of the zone of proximal development. This sensitive alert system within situational environments offers just-in-time interventions and differentiated educator roles to support individual student needs.
Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions.	Relating new information to prior knowledge is key. There are real-world skill-building and knowledge application opportunities. Students transfer knowledge through integrative experiences developing 21st century skills both inside and outside of the classroom. Social and emotional skills are valued.

Across the United States, there are significant developments in state-level policy towards competency education systems to enable new learning models and focus on mastery. Figure 4, a map created by iNACOL, illustrates the state-by-state snapshot of competency-based implementation in the United States.

A competency education system *enables* personalized learning by opening the system constraints to allow multiple pathways for demonstrating what a student knows and can do.

"Empowering students with voice and choice in their learning environments is an important step towards providing personalization. By creating personalized learning environments and pathways, schools become more flexible and adaptive in responding to the diverse needs and interests of students and thus more relevant in the lives of students. In competency-based models, learning is the constant and time is a variable. In personalized learning, each students' needs and interests can be addressed through tailored instructional environments with some choice in the curriculum and approach to how they learn. We must expect every student to demonstrate the same high level of mastery, but allow students to get there in different ways based on a student's own unique needs, goals and preferences. Personalized learning is not a trend — it is a process to leverage student voice and choice, which research ties to increased learning outcomes."

– Dr. David Haglund, Assistant Superintendent, Instructional Support, Riverside Unified School District

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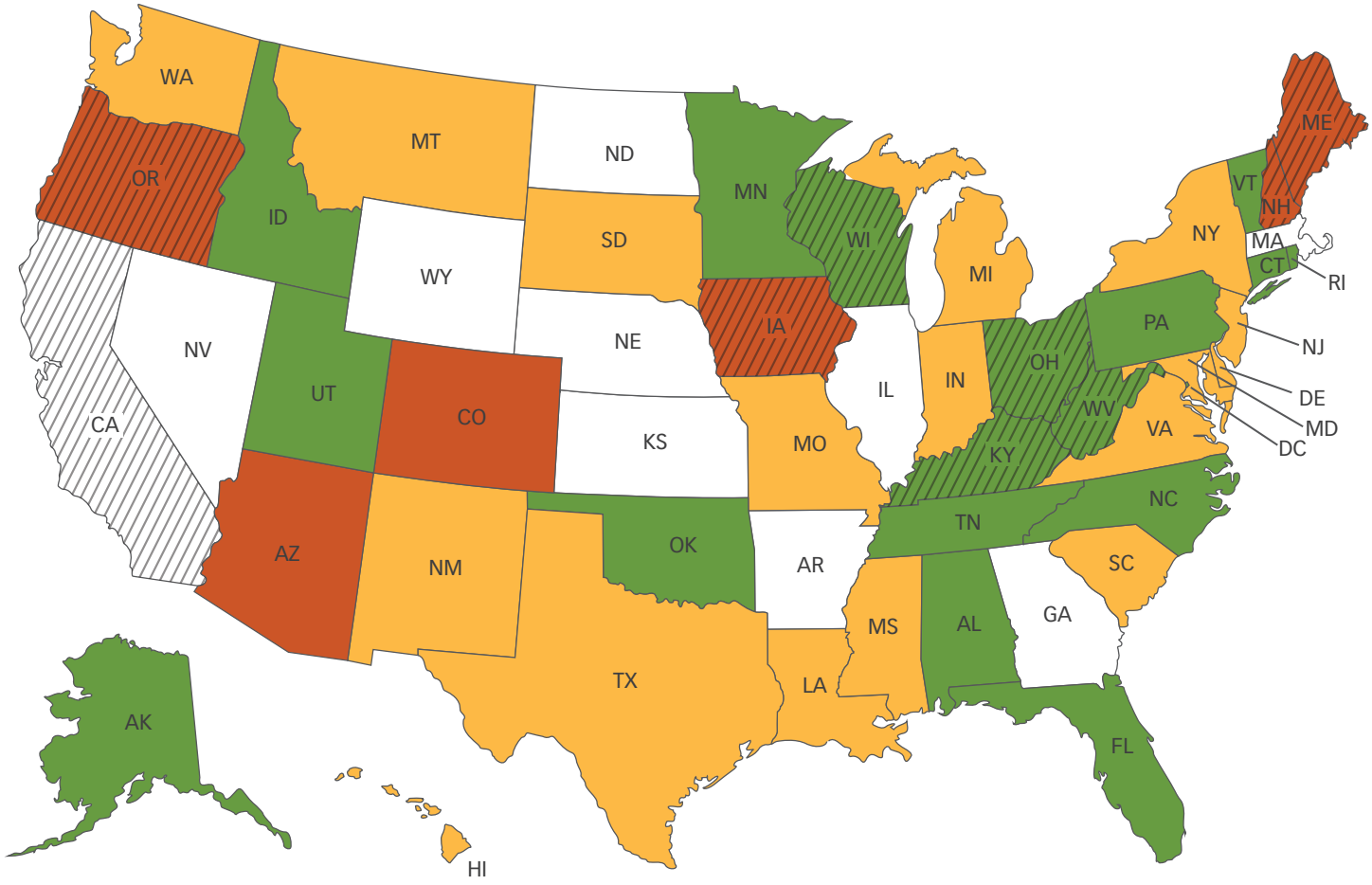
The time-based education system that revolves around students being sorted by age into grade levels, with public schools accountable for one-grade level's worth of growth per 180 day school year, is incredibly limiting in terms of what is possible for maximizing learning environments so that each and every student can reach their full potential — ensuring every student has the knowledge, skills and dispositions to be prepared for college, careers and success in today's global society.

Thus, competency education is a necessary foundation in both policy and practice for personalized learning approaches to thrive. Competency education models focus on what a student knows and can do — through a performance — and this will help ensure that in new models using blended learning — a student has to demonstrate the level of proficiency. The competency-based, blended learning environment must also provide immediate interventions and supports to keep the student on path to proficiency and graduation. Competency education requires the learning environment to be redesigned so that failure is not an option.

In order to provide transformed, student-centered, personalized learning, ensuring that both policy and practice are aligned to competency education, is foundational. Competency education is built upon making sure there are consistent, world-class standards set for our students to achieve as clear learning goals.

A Snapshot of Competency Education State Policy Across the United States



Advanced States
Those states with clear policies that are moving towards proficiency-based; more than just an option.

Developing States
Those states with pilots of competency education, credit flexibility policies, or advanced next gen policies for equivalents to seat-time.

Emerging States
Those states with waivers, task forces.

ILN States
Since its inception, the Innovation Lab Network (ILN) engaged schools, districts, and state education agencies working to identify through local efforts new designs for public education that empower each student to thrive as a productive learner, worker, and citizen. The state's responsibility is to establish conditions in which innovation can flourish and to develop capacity to sustain and scale what works through policy. The Council of Chief State School Officers (CCSSO) facilitates this network of states to support programmatic, policy, and structure design work within each participating states and across the network.

No Policies in Competency Education
States with seat-time and no competency education policies.

iNACOL International Association for K-12 Online Learning

Figure 4. Map of State Policy Development on Competency-Based Education

How Standards Fit into Personalized, Blended and Competency Education

"A large majority of K-12 teachers say that new learning standards now being implemented in most states will improve students' thinking skills, a new survey suggests."

– Greg Toppo, USA Today

Standards Set the "Benchmark" Foundation for Student Success

IN THE UNITED STATES, STATES ARE AT A MAJOR PIVOTAL POINT IN THE HISTORY OF K-12 EDUCATION for leading initiatives to adopt internationally benchmarked standards in Reading/Language Arts and Mathematics. In a globally competitive economy, this is a critical accomplishment to make sure our students are learning at high levels to prepare them for success. We must continue to raise student learning expectations and set academic standards for our students to be successful, as the global society demands higher levels of problem-solving skills and deeper levels of learning. It is important that standards are held to high and rigorous levels for all students to succeed and ensure equity. At the classroom-level, schools can become much more transparent about understanding how well students are demonstrating proficiency each and every day against these standards — and providing the supports struggling students need in real-time. This is the beginning of a journey in American education, and we believe it must be built on strong, internationally benchmarked standards, as represented by the Common Core State Standards.

The academic standards and competencies that students must know are the learning goals and create a progression. New learning models can drive personalized designs for learning these standards. The standards are the base for what a student must know and do. Once standards are set, they become the floor of expectations and set the bar. A high bar of expectations for all students helps drive equity.

If we want American students to be globally competitive, we want our students to achieve internationally benchmarked academic standards. The question often arises, why don't we set expectations that are at least as rigorous as the top ten countries internationally who lead the globe in academic performance? This is a logical first step — to internationally-benchmark what American students need to know and do — and set these standards for world-class knowledge and skills.

It is important that all students are held to high and rigorous standards and expectations to succeed and ensure equity.

The Common Core State Standards (CCSS) are a solution to a problem of preparing kids for college and careers because the current expectations are too low.

The standards offer a framework for preparing students with knowledge and skills they need to succeed.

The standards are good and a new realistic benchmark for what students must know and be able to do.

Teachers are strongly supportive of the standards to help students think critically and use deeper learning skills.

The CCSS standards are internationally benchmarked and will help students succeed.

How Competency Education Enables Personalization: Using Standards to Benchmark the Progress

Standards are the building blocks that provide a frame of what a student needs to know and do to be successful. Both personalized and competency education systems require each student to have a student profile, or personalized learning map, showing each of the standards along a learning progression. The student profile needs to indicate the level of proficiency for each standard across the entire K-12 learning progression over time.

In the *Art & Science of Designing Competencies*, Chris Sturgis writes, "The Common Core of State Standards is based upon research in learning progressions — how concepts build upon each other. Students need to have strong conceptual underpinning to retain and apply knowledge…As our mental models shift from time-based to competency-based, it is also important to move away from linear toward flexible pathways for learning… This will depend on creating powerful cultures of learning where educators are the master learners and students their apprentices" (2012).

As our mental models shift from time-based to competency-based, it is also important to move away from linear toward flexible pathways for learning.

The learning objectives must be clear and meaningful to students, and assessments also must have clear rubrics for teachers and students to understand what is below basic proficiency, what proficiency looks like, and how advanced mastery is demonstrated when a student can "know and show" their deeper levels of learning.

Competencies built on these world-class standards set clear expectations for what a student must "know and show" to demonstrate mastery. The areas that relate competency education to personalize learning most clearly are competency education's focus on: 1) each student having a personalized learning map, or student profile, exhibiting how and when a student learns and demonstrates mastery, 2) creativity and choice enabled by learning competencies in a way that is personalized to a student's interests, and 3) flexibility in competency education to support anytime, everywhere learning toward meeting the learning objectives and goals with the emphasis on each student's deeper learning through the application of knowledge and skills.

In a competency-based system, once the clear standards and expectations are set, then learning environments can offer unprecedented personalization opportunities by increasing the content resources aligned to standards and ways to learn them.

Build on Standards-Based Design: Bringing Creativity and Choice to the Lesson Level

With a level playing field of standards, the creativity in new learning models is derived from the art of teaching and how students learn and demonstrate competencies. Focusing on student voice, choice and interests, students and teachers open multiple pathways for students to demonstrate knowledge of the standards and provide flexibility in making available both formal and informal learning settings, as long as the students can demonstrate their learning through a performance assessment showing they mastered the standards at high levels.

This will increase educational opportunities with anytime, anywhere learning — through blended and online learning aligned to the standards, museum and field experiences, internships, out-of-school and afterschool learning opportunities — as new delivery systems. The focus is on providing flexibility for how a student is enabled to learn 24 x 7 and empowered to demonstrate competency on the standards through a "performance" exhibiting mastery. By demonstrating competencies in a variety of ways, personalized pathways can create expanded and diverse learning opportunities for kids.

A student must demonstrate mastery by passing a written and a driving test to earn a driver's license. Whether you think of an analogy of a student learning karate and learning different levels of belts upon demonstrating mastery, or whether you are familiar with the concepts of young people earning girl/boy scout badges for the competencies they demonstrate, the idea is the same — students may learn at their own pace, and as they master skills, they develop those competencies, and can choose the time to perform or show their knowledge, and an assessment completed by a "master" or "leader" will result in an award of the badge or an encouragement to keep working until they have sufficient mastery to advance further to the next level. They both have clear and consistent indicators of what must be demonstrated before earning a "badge" or "belt" to exhibit mastery at a certain level. These competency-based models rely on clear standards for performance before assessing and awarding the level of mastery. They are supported by a set of clear standards, with flexibility in how the standards are taught, or how a student learns and practices, but the specificity is in the consistency of the standards and the rigor of the assessment in whether they met the standards or not, with a focus on application of knowledge and skills.

Standards are consistent as a baseline, but allow creativity from local leaders and educators to teach and offer expanded opportunities for learning. Standards create a clear target, but there is much flexibility in how students take on learning to meet the targets. Local districts, schools and teachers have the ability to choose their curriculum choices aligned to standards. Students in personalized learning models have multiple pathways, voice and choice in how they learn the standards. Blended learning models rely on teaching the standards in a way that optimizes the face-to-face learning environments and online platforms and digital content (that is aligned to standards).

The purpose of the personalized learning framework is to open student pathways and encourage student voice and choice in their education. This is enabled by providing personalized learning through instructional environments that are competency-based, and by tapping into modalities of blended and online learning to build on redesigned instructional models using advanced technologies to address the standards. By doing this, new school models can unleash the potential of each and every student in ways never before possible.

In order to ensure that every student has access to a world-class education that prepares them for a lifetime of success, the academic standards and skills for what a student must be able to know and do in our classrooms must be internationally benchmarked as a floor, not as a ceiling. The deeper learning and expanded learning opportunities can be built upon the foundation of the standards to achieve higher and deeper learning.

Conclusion

Blended learning instructional designs leverage the strengths of both the classroom and online modalities.

OUR VISION OF FUTURE LEARNING MODELS IS CENTERED ON THE NEED FOR INCREASING OPPORTUNITIES, ACCESS AND EQUITY FOR ALL STUDENTS to actively engage in the highest-quality, student-centered, competency education models offering personalized learning for each and every student, so that success is the only option.

With the advent of new solutions, we must renew our focus on equity, access and educational excellence to engage in meaningful discussions about how to best personalize learning for every single student's individual needs and success and ensure only high quality models exist where failure is not an option.

The field is nascent, but the future of blended learning is exciting. If we focus on holding all students to high standards providing clear expectations for student learning that will result in success, and then rethink new school designs with the goals of personalization and differentiation as the instructional models' design, then we can intentionally create competency education models that enable personalization and expect mastery. This "continuous improvement" delivery system is adaptive and engaging when using high-quality blended modalities. By understanding how these nuanced ideas fit together and integrate — then, we can clarify our thinking on principles and design elements for transforming the American education system.

We can offer a standards-based education that sets a high standard, creates a launching pad for the future of learning, ensures every student can access personalized learning that best fits their own unique needs, and guarantees that failure is not an option. At some point, we will stop talking about "blended" learning or "online" learning — and recognize the inevitable shift toward digital learning in a modern society will just mean "learning" through multiple modalities. At that time, we can begin to focus on how we ensure high-quality, competency-based education environments that require all students to perform at high levels.

We have framed our discussions on integrating the ideas of personalized, blended and competency-based learning by taking a magnified view into differences in the terms and instructional models to help clarify the definitions. Our aim is to draw more attention to the classroom-level needs, implement best practices, conduct research and lead professional development for practitioners working in blended, online and competency-based education, as well as provide overarching policy guidance to support a transformed system.

The fuzziness of all of these terms used broadly and interchangeably has allowed for some confusion in the field of K-12 education. Some implementations of blended learning describe themselves as "competency-based" or

"personalized" when they may be so in name only. We hope through this seminal piece, we have described the nuances at the classroom-level for the ability to personalize learning across implementations.

Working with practitioners, researchers and policy makers alike on understanding the new learning models, next generation school designs, and implications related to student-centered instructional models is an important and ongoing activity for knowledge-building across the field. How is the field progressing toward the broader student-centered learning goals? Are leaders guiding a transition to student-centered learning? Are instructional models supporting student-centered, personalized learning? And if so, to what extent?

To meet every student's needs, we strive to move the system toward personalized learning models that are student-centered. The concept of personalization is the overarching instructional model goal. We believe it can be realized through high-quality blended learning modalities — but these models must be competency-based in nature, requiring students to demonstrate mastery.

The systemic goal toward competency-based education (policy and practice) still requires a heavy lift from practitioners in these key areas:

- Designing personalized instructional models;
- Empowering district/network/system leadership to create these instructional models and engage in continuous improvement to refine them;
- Enabling blended learning leaders to innovate in early models to provide tools, resources, platforms and modalities to support highly personalized, competency education; and
- Informing policy makers on how to remove barriers to these innovative new learning models.

We would like to thank the field for engaging in detailed discussions on these concepts. We welcome an ongoing discussion across the field as the instructional models and concepts continue to launch, evolve and re-imagine what is possible for new learning models in K-12 education.

Afterword

It is an honor to engage with the field in these important discussions.

Terminology in this field is often vague and used in different ways, creating fuzzy thinking that ultimately impacts implementation models. Just using technology or software that purports to be competency-based, does not create a competency-based learning environment. If there is only one pathway, modality or resource for a student to access to move through the standards, then the instructional model may lack personalization. The detailed description of the nuances in these terms is meant to push thinking and engage in better clarity for how to integrate important ideas in new learning models that are blended and competency-based — and offer greater personalization than ever. As we strive to transform the field toward student-centered learning, the ability to personalize instruction for each student's unique needs comes within reach in our vision of using new competency-based models and blended learning solutions.

Resources

Blogs

- Bill and Melinda Gates Foundation. Impatient Optimists: The Next Generation of Personalized Learning. http://www.impatientoptimists.org/Posts/2013/01/The-Next-Generation-of-Personalized-Learning
- Brandt Redd. Of That. http://www.ofthat.com/
- Clayton Christensen Institute. Five Attributes Parents Should Look for in a Classroom. http://www.christenseninstitute.org/five-attributes-parents-should-look-for-in-a-school/
- CompetencyWorks. http://www.competencyworks.org
- Education Elements. Blended Learning and the Common Core Standards. http://educationelements.com/blog/blended-learning-and-the-common-core-state-standards

Case Studies

- Clayton Christensen Institute for Disruptive Innovation. Blended Learning Universe. http://www.christenseninstitute.org/blended-learning-universe/
- iNACOL. Blended Learning: The Convergence of Online and Face-to-Face Education. http://www.inacol.org/cms/wp-content/uploads/2012/09/NACOL_PP-BlendedLearning-lr.pdf
- Michael & Susan Dell Foundation. Case studies on five blended learning schools. http://www.msdf.org/programs/urban-education/initiatives/united-states/blended-learning/
- National Association of Independent Schools. Stories of Excellence: Case Studies of Exemplary Blended and Fully Online Learning. http://www.nais.org/Articles/SiteAssets/Pages/Stories-of-Excellence/NAIS-Excellence-Booklet-0924.pdf
- Next Generation Learning Challenges (NGLC) Wave IIIa Models. Breakthrough Models for College and Career Readiness: An Introduction to Next Generation Blended Schools. http://www.educause.edu/library/resources/breakthrough-models-college-readiness-introduction-next-generation-blended-schools
- Public Impact. Rocketship Education—An Opportunity Culture Case Study (Public Impact). http://opportunityculture.org/wp-content/uploads/2013/07/Rocketship_Education_An_Opportunity_Culture_Case_Study-Public_Impact.pdf
- Public Impact. Touchstone Education—An Opportunity Culture Case Study. http://opportunityculture.org/wp-content/uploads/2013/07/Touchstone_Education_An_Opportunity_Culture_Case_Study-Public_Impact.pdf
- Rogers Family Foundation. Oakland Unified School District Blended Learning Pilot. http://www.rogersfoundation.org/system/resources/0000/0022/BlendedLearning_final.pdf

Reports & Books

- Carnegie. Opportunities by Design: New High School Models for Student Success. http://carnegie.org/programs/urban-and-higher-education/new-designs-innovation-in-classroom-school-college-and-system-design/opportunity-by-design-new-high-school-models-for-student-success/
- Clayton Christensen Institute for Disruptive Innovation. Blended Learning Resources. http://www.christenseninstitute.org/blended-learning-3/

- Competency Works. Re-Engineering Information Technology: Design Considerations for Competency Education. http://www.competencyworks.org/wp-content/uploads/2013/02/iNACOL_CW_IssueBrief_ReEngineeringCompEd_final.pdf
- Donnell-Kay Foundation. Blended Learning. http://dkfoundation.org/our-work/blended-learning
- iNACOL. Promising Practices in K-12 Online Learning Series of Reports. http://www.inacol.org/resources/publications/promising-practices/
- iNACOL. Lessons Learned from Blended Programs: Experiences and Recommendations from the Field. http://www.inacol.org/resources/publications/inacol-books/
- iNACOL. Lessons Learned from Virtual Schools: Experiences and Recommendations from the Field. http://www.inacol.org/resources/publications/inacol-books/
- iNACOL. Lessons Learned in Teacher Mentoring: Supporting Educators in K-12 Online Learning Environments. http://www.inacol.org/resources/publications/inacol-books/
- iNACOL. Online and Blended Learning: Case Studies from K-12 Schools Around the World. http://www.inacol.org/resources/publications/inacol-books/
- United States Department Of Education. Competency-Based and Personalized Learning Resources. http://www.ed.gov/oii-news/competency-based-learning-or-personalized-learning
- University of Southern Maine. Preliminary Implementation of Maine's Proficiency-Based Diploma Program. http://www.usm.maine.edu/cepare/preliminary-implementation-maines-proficiency-based-diploma-program

Videos

- Blended Learning Now. http://www.blendedlearningnow.com/home/feed/video
- Blended My Learning. Videos. http://www.blendmylearning.com/videos/
- Broad Foundation TEDx Talk. http://broadeducation.org/tedtalk.html
- Education Elements. Fundamentals of Blended Learning. http://vimeopro.com/edelements/education-elements
- iNACOL. Personalized Learning Video Stream on YouTube. http://bit.ly/personalizedlearning-youtube
- iNACOL. Personalized Learning Video Stream on Vimeo. http://bit.ly/personalizedlearning-vimeo
- Maine Department of Education. Personalizing Learning. http://maine.gov/doe/cbp/videos.html
- Re-Inventing Schools Coalition (RISC). RISC In Action Videos. http://www.reinventingschools.org/about/video/
- Rocketship Personalized Learning. http://vimeo.com/69339680

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