Core Function →	**Personalized Learning: Blended Learning**

Effective Practice →	**Mix traditional classroom instruction with online delivery of instruction and content, granting the student a degree of control over time, place, pace, and/or path**

Indicator: All teachers build students' ability to learn in contexts other than school. (5314)

Explanation: Blended learning enables personalized learning at scale, offering students both traditional classroom and online learning experiences. Since online learning often takes place outside of the school, it is critical that teachers build students' independence with learning by providing plenty of explicit instruction and practice with metacognitive and motivational competencies. Evidence is emerging that teachers can build students' capacity to self-regulate their learning in independent contexts. Teachers should create self-directed learning cultures by modeling strategy use and providing plenty of practice with metacognitive and motivational strategies such as goal setting and developing a growth mindset.

Questions: How can teachers best develop students' ability to learn in out-of-school contexts?

Learner-centered, or personalized learning refers to "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" (Patrick, Kennedy, & Powell, 2013, p. 4). The student is actively involved with the teacher in co-constructing their individualized learning pathway, and the location, time and pace of learning may vary from student to student (Redding, 2016). Blended learning models grant students some degree of control over their learning pathway, and provide a mix of traditional classroom instruction and online delivery of instruction and content (Staker & Horn, 2012). While K-12 blended learning research is limited (Sparks, 2015), some evidence suggests that students with access to well-implemented blended learning models outperform those experiencing only one type of instruction (Means, Toyama, Murphy, Bakia, & Jones, 2010; Bakia, Shear, Toyama, & Lasseter, 2012; Means, Toyama, Murphy & Baki, 2013; Pane, Griffin, McCaffrey, & Karam, 2014; Pane, Steiner, Baird, & Hamilton, 2015). Students may spend part of the school day engaged with teachers and other students using both digital and non-digital content, and get tutoring or complete an online course at home or in an after-school program. Blended learning requires that students are capable of self-directed learning as they independently engage with online content both in and out of school; some evidence suggests that blended learning models may be less effective for students working below grade level who may not be able to adequately self-manage their learning (Murphy, Snow, Mislevy, Gallagher, Krumm, & Wei, 2014). Murphy, et al caution that "establishing productive, self-directed learning cultures is important for students to fully benefit from online learning" (p.8). This ability to self-manage learning is also particularly critical when students engage with online content outside of the school context, where they may have limited guidance.

How Can Teachers Best Develop Students' Ability to Learn in Out-of-School Contexts?

Metacognitive competency, one of four personal competencies within recent personalized learning frameworks[1] becomes critical for student success, particularly within personalized learning pedagogies, as students are responsible to some degree for managing their own learning (Redding, 2016). In order to build students' capacity to regulate their learning independently, teachers must explicitly teach and provide guided practice in the metacognitive strategies that are essential for online blended learning environments (Soto, 2016). Students may also need instruction in time management skills and strategies for self-motivation (Bakia, Anderson, Heying, Keating, & Mislevy, 2011). Teachers providing blended instruction must "understand and employ techniques for developing students' metacognition, self-regulation, and perseverance" (Jobs for the Future & the Council of Chief State School Officers, 2015, p. 9). Examples of these techniques include:

- Using modeling and feedback techniques that highlight thinking processes rather than exclusively focusing on thinking products;

- Helping students develop a growth mindset that attributes learning outcomes to self-regulated learning processes (ability to take responsibility for one's focus and effort) rather than to perceived ability; and,

- Using a variety of tools to support students' ability to maintain high goal expectations over time.

Murphy, et al., (2014) recommend that in order for students to fully benefit from blended learning, schools must establish productive and self-directed learning cultures by providing activities such as setting weekly progress goals. As Miller (2012) describes:

"Students need to be aware of what they are learning as well as their progress towards meeting standards. Teachers need to build in frequent moments, both as a

[1]Other personal competencies are Cognitive, Motivational, and Social/Emotional. For a complete description of a personalized learning framework see Redding, in press: http://www.centeril.org/2016handbook/resources/Redding_chapter_web.pdf)

class and individually, to reflect on the learning, and set SMART goals. Through these measurable and student-centered goals, students can become agents of learning, rather than passive recipients. [Teachers should]…Use reflecting and goal-setting both online and offline to create personal connection to the learning and personalized goals."

Lai & Hwang (2016) found evidence that building metacognitive skills in the form of self-regulated learning strategies (e.g., goal setting, how to plan and use study time) into a flipped elementary math classroom resulted in increases in learning and self-efficacy, thus providing evidence that metacognitive strategies can benefit students' online learning outside of school. Additional independent metacognitive strategies include encouraging students to take advantage of available online supports and scaffolds (e.g., calculators, translation, dictionaries), and pausing video instruction to take notes (Edgenuity , n.d.). For example, foreign language teachers using flipped learning prepared students to ensure they could be independent with online material encountered out of school:

"To ensure that students watched the assigned material, the teachers decided to place a great deal of weight on the notes that the students would take while watching the assigned material. They taught their students to take 'real' notes using the Cornell note-taking system. The teachers modeled note taking and used class time to practice note taking in a group and with partners before having students do it on their own. They all agreed that student preparation was essential to the success of their flipped classrooms." (Muldrow, 2013, p. 30)

While these descriptive findings are promising, more research is needed to develop a better understanding of how to help all students achieve competence within self-directed learning environments. For example, additional research can shed light on the non-cognitive characteristics (e.g., persistence and motivation) that are necessary for success in online learning, as well as which online learning program features can best support students with varying levels of metacognitive skill (Murphy, et al., 2014).

References and other resources

Bakia, M., Anderson, K., Heying, E., Keating, K., & Mislevy, J. (2011). *Implementing online learning labs in schools and districts: Lessons from Miami-Dade's first year.* Menlo Park, CA: SRI International. Retrieved from https://www.sri.com/sites/default/files/brochures/implementing_online_learning_labs.pdf

Bakia, M., Shear, L.,Toyama, Y., & Lasseter, A. (2012). *Understanding the implications of online learning for educational productivity.* Washington, DC: U.S. Department of Education.

Edgenuity, Inc. (n.d.). *The role of the teacher in a blended learning classroom.* Retrieved from http://www.edgenuity.com/102/pdf/Role_of_the_Teacher.pdf

Jobs for the Future and the Council of Chief State School Officers (2015). *Educator competencies for personalized, learner-centered teaching*. Boston, MA: Jobs for the Future. Retrieved from http://www.ccsso.org/Documents/Educator-Competencies-081015-FINAL.pdf

Lai, C.L., & Hwang, G.J. (2016). A self-regulated flipped classroom approach to improving students' learning performance in a mathematics course. *Computers and Education, 100*(C), 126-140.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.* Retrieved from http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record, 115*, 1-47.

Miller, A. (2012, October 12). Blended learning: Strategies for engagement. [Web log post]. Retrieved from http://www.edutopia.org/blog/blended-learning-engagement-strategies-andrew-miller

Muldrow, K. (2013). A new approach to language instruction: Flipping the classroom. *The Language Educator*, 28-31. Retrieved from https://www.actfl.org/sites/default/files/pdfs/TLE_pdf/TLE_Nov13_Article.pdf

Murphy, R., Snow, S., Mislevy, J., Gallaher, L., Krumm, A., & Wie, X. (2014). *Blended learning report*. Michael & Susan Dell Foundation. Retrieved from https://www.msdf.org/app/uploads/2016/01/MSDF-Blended-Learning-Report-May-2014.pdf

Pane, J.F., Griffin, B.A., McCaffrey, D.F., & Karam, R. (2014). Effectiveness of Cognitive Tutor Algebra I at scale. *Educational Evaluation and Policy Analysis, 36*(2), 127-144.

Pane, J. F., Steiner, E. D., Baird, M. D., & Hamilton, L. S. (2015). *Continued progress: Promising evidence on personalized learning.* Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/research_reports/RR1365.html

Patrick, S., Kennedy, K., & Powell, A. (2013). *Mean what you say: Defining and integrating personalized, blended and competency education.* International Association for K-12 Online Learning. Retrieved from http://www.inacol.org/wp-content/uploads/2015/02/mean-what-you-say.pdf

Redding, S. (2014). *Personal competency: A framework for building students' capacity to learn*. Philadelphia, PA: Center on Innovations in Learning. Retrieved from http://www.centeril.org/publications/Personal_Competency_Framework.pdf

Redding, S. (2016). Competencies and personalized learning. In M. Murphy, S. Redding, & J. Twyman (Eds.), *Handbook on personalized learning for states, districts, and schools* (pp. 3-18). Philadelphia, PA: Temple University, Center on Innovations in Learning. Retrieved from www.centeril.org

Soto, M.S. (2016). Flipped learning as a path to personalization. In M. Murphy, S. Redding, & J. Twyman (Eds.), *Handbook on personalized learning for states, districts, and schools* (pp. 73-77). Philadelphia, PA: Temple University, Center on Innovations in Learning. Retrieved from www.centeril.org

Staker, H., & Horn, M. (2012). *Classifying K-12 blended learning.* Retrieved from http://www.christenseninstitute.org/wp-content/uploads/2013/04/Classifying-K-12-blended-learning.pdf

Tamin, R., Bernard, R., Borokhovski, E., Abrami, P., & Schmid, R. (2011). What forty years of research says about the impact of technology on learning: A second-order meta-analysis and validation study. *Review of Educational Research, 81*, 4-28.