MAKING CLASSROOM LEARNING PERSONALIZED

A RESEARCH BRIEF FOR POLICYMAKERS, PRESENTED BY DIVISION 15 (EDUCATIONAL PSYCHOLOGY) OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

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Personalized Learning (PL) refers to a broad assortment of approaches and programs for adapting instruction to learner characteristics to achieve learning outcomes. The range of possible PL approaches is quite diverse and includes (but is not limited to): the use of technology for individualized instruction, rotation models where students move between different instructional formats, learner profiles that assist teachers' decision-making, student-driven academic goal setting, project-based learning, social-emotional learning, and competency-based learning where students master concepts at their own pace. PL is often implemented at the school, district, or even state level when stakeholders come together around a particular set of PL approaches.

In the last 10 years, PL has grown in popularity, becoming embedded in federal and state policies and supported by millions of dollars of private funding. For example, at the federal level, the 2015 *Every Student Succeeds Act* provides funding for states that enact PL[1], while state-level policies either mandate specific PL approaches or support PL through statewide programs.

The diversity of PL approaches appearing across the nation means that we have an incomplete picture of their effects on learner outcomes. Local, state, or national decisionmakers who would adopt PL are faced with two related challenges:

- **A lack of a research base for PL.** There is a lack of clear evidence of the effects of PL. The large-scale studies available detect modest positive effects[2] but often include PL approaches that vary widely and involve approaches that are highly specific to one context. These approaches therefore may not be applicable to all types of school settings. A lack of a clear and convincing research base makes it difficult for decisionmakers to know what PL approaches work best and with whom.

- **A lack of a clear definition of PL.** PL options are often no more than a mishmash of intuitively attractive educational approaches that range from teacher-centered instruction to student-driven inquiry.[3] Vague definitions make it problematic for decisionmakers to know what programs are best for their context.

Note: This is an official statement of Division 15 (Educational Psychology) of the American Psychological Association, and does not represent the position of the American Psychological Association or any of its other Divisions or subunits.

We recommend policymakers only adopt PL approaches that *clearly define* goals and outcomes. Specifically, any PL approach being considered should clearly stipulate how teachers could adapt instruction to meet the needs of learners in order to change a clearly targeted outcome (e.g., increase reading scores). Research in educational psychology on student motivation, cognition, and metacognition can inform the selection of a PL model. When reviewing or deciding upon PL programs or approaches, consider the degree to which they incorporate the following principles. While one definition or enactment of PL need not incorporate all of these principles, they represent many of the core advances in knowledge over the past two decades in the science of how people learn through personalized approaches.[4]

• **Promote Interest**: Triggering students' interest in learning and supporting the development of that interest can enhance learning. Interest can be developed over time in *all* students through repeated exposure to activities and experiences in and out of school.[5] Using strategies like project-based learning and framing content in a way that is relevant, timely, and novel has been shown to be effective.[6] Consider how the PL program is designed to build students' authentic interest in and curiosity for the subjects they are learning.

• **Focus on Value**: Connecting learning in school to things learners care about and value (e.g., career pathways) can enhance interest and promote learning.[7] This is especially true if students take a role in generating the connections themselves and if the connections are deep and meaningful.[8] Examine how PL programs promote students' appreciation of the importance of the subject area and their ability to connect it to their goals.

• **Provide Choice**: Allowing students to have autonomy through choice and control can enhance learning.[9] Placing boundaries on choice by providing productive options can ensure students avoid becoming frustrated or overlearning objectives that are too simple.[10] Look for programs that provide students meaningful, structured choices, and control over their learning.

• **Encourage Self-Regulation:** To direct their own learning, students need to make plans, set goals, choose effective learning strategies, monitor their learning, and adapt.[11] These skills can be trained efficiently[12] and teachers can model self-regulation.[13] Effective PL programs will explicitly support students in learning self-regulated learning strategies.

• **Develop Mastery**: Focusing students on developing mastery of knowledge increases autonomy, promotes perceptions of competence, and frames learning as personal improvement rather than competition.[14] Mastery learning can be implemented in systems that determine current knowledge and guide instructional choices or provide appropriate tasks.[15] When instructors encourage student reflection on their growth using data, students improve their self-assessment, learning judgments, and future choices.[16] Choose PL programs that allow students to master concepts at their own pace and offer tools for students to self-assess their learning.

ACTIONABLE STRATEGIES

FOR SCHOOL DISTRICT ADMINISTRATORS

1. **Clearly define PL and the theory of change.** Make sure PL initiatives clearly define PL and map out a specific "theory of change" that describes how and why change will happen and how those goals are appropriate for their context. This involves planning and aligning the following elements with one another: (1) learner characteristics the school will prioritize as they tailor instruction, (2) instructional systems, professional development, school policies, etc., needed to enact PL, and (3) the learner outcomes the initiative will seek to impact.

2. **Design PL initiatives using educational research.** Link PL design to a relevant educational research base and adopt effective practices that can be drawn from research in educational psychology about interest, value, choice, self-regulation, and mastery. Avoid PL programs that embrace educational myths that lack evidence (e.g., "learning styles"[17]).

3. **Invest in PL resources that align with the theory of change.** Invest in resources for PL, including learning technologies, instructional design resources, and professional development that are aligned to the theory of change and to research principles.

4. **Measure progress for continuous improvement.** Assess the effectiveness of the PL implementation, particularly through direct observation of classrooms and continuous feedback from teachers. Exchange results and ideas with others in local, state, and national PL networks to allow for evidence and strategies for PL to be built.

FOR STATE POLICYMAKERS

1. **Require clear, but flexible definitions of PL.** Encourage clear definitions of PL and coherent theories of change from PL implementers based on the research principles given above. Definitions provided at the state or federal level should be sufficiently flexible to allow implementers to respond to local needs, while also placing clear boundaries on PL based on state and federal priorities. Provide financial support for implementers who need help designing high-quality PL based on research and studying results of their implementation.

2. **Make strategic investments based on the theory of change.** Make strategic investments in PL resources (e.g., learning technologies, professional development) warranted by a proposed PL model. Gather data from continuous improvement efforts regarding local and contextual considerations.

3. **Incentivize researcher-practitioner-leader partnerships.** Incentivize researcher-practitioner-leader partnerships around PL to improve implementation. The data generated from these partnerships can inform local practices and add to the evidence on effective PL designs and practices relevant to implementation across educational contexts.

4. **Proactively plan for collaboration and dissemination.** Support and coordinate the dissemination of local and state PL implementation efforts to encourage cross-pollination among PL initiatives. Create infrastructure to collect and monitor this dissemination.

IN-TEXT CITATIONS

[1] Zhang, Yang, & Carter, 2020
[2] e.g. Pane, Steiner, Baird, & Hamilton, 2015; RAND Corporation, 2014; McCarthy & Liu, 2020; Walkington & Kamata, 2018; Xie et al., 2019; see Zhang, Basham, & Yang, 2020
[3] Cuban, 2018
[4] Aleven et al., 2017; Plass & Pawar, 2020; Bernacki et al., 2020; Walkington & Bernacki, 2020
[5] Bernacki & Walkington, 2018; Hidi & Renninger, 2006; Renninger & Hidi, 2015
[6] Woods & Walkington, 2020
[7] Gaspard et al., 2015; Harackiewicz et al., 2014; Hulleman & Harackiewicz, 2009; Walkington, 2013
[8] Canning & Harackiewicz, 2015; Durik & Harackiewicz, 2007; Durik et al., 2015; Walkington & Bernacki, 2014

[9] Cordova & Lepper, 1996; Patall, Cooper, & Robinson, 2008; Patall, Cooper, & Wynn, 2010
[10] e.g. Beck & Gong, 2013; Long & Aleven, 2017
[11] Greene, 2018; Winne & Hadwin, 1998; Zimmerman, 2000
[12] Bernacki, Vosicka, & Utz, 2020
[13] Perry, Phillips, and Hutchinson, 2006
[14] Deci & Ryan, 2000; Elliot, 1999; Usher & Pajares, 2008
[15] McCarthy & Liu, 2020; Pane, Griffin, McCaffrey, & Karam, 2014
[16] Long & Aleven, 2013
[17] Pashler, McDaniel, Rohrer, & Bjork, 2008

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