

# Defining & Measuring Student-Centered Outcomes



Equitably Preparing All Students for College,  
Career, Civic Participation, and Life

*Education Evolving is a Minnesota-based, nonprofit, nonpartisan organization focused on improving educational opportunities and outcomes for all students, in particular those who are and have been traditionally underserved. Toward that end, our mission is to advance **student-centered learning** for all students, by **supporting teachers** designing and leading schools, and by **advocating for policy** that is open to innovation. Read more at [www.educationevolving.org](http://www.educationevolving.org).*

*We are immensely grateful to the more than 50 students, families, educators, policymakers, community advocates, researchers, and business owners we spoke to for this paper. We do not list them here since we asked them to speak candidly from their experience, and indicated we would not identify them by name, but each contributed in unique ways to the final product. Thank you!*

*Report design by Marcus Penny.*

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# Introduction and Context

As goes the adage, what gets measured gets done. This statement has proven true, over time and across sectors.<sup>1</sup> In education, the outcomes set for students and schools, and the measures used for those outcomes, influence whether learning can truly be designed with students at the center.<sup>2</sup>

In recent years, there has been an unprecedented focus on measurement and data in public education, beginning most notably with the 2002 passage of the No Child Left Behind Act (NCLB) and continuing through the Every Student Succeeds Act of 2015 (ESSA). To be sure, these policies have made important contributions. They brought attention to egregious and unacceptable inequities among students in very important areas of academic achievement,<sup>3</sup> and some analyses have shown modest student gains in tested subjects over this period.<sup>4</sup>

At the same time, these policies have had unintended consequences. The emphasis on assessments of reading and math has corresponded with a narrowing of curriculum to focus on these subjects,<sup>5</sup> and data has come to be associated more with accountability than with improving teaching and learning. Perhaps most importantly, the measures emphasized in this era do not capture a full picture of what matters to equitably prepare all students for success in college, career, civic participation, and life.<sup>6</sup>

“It's time to expand how we define and measure student and school outcomes.”

To be clear, we are not advocating to eliminate standardized tests. Rather, we assert it's time to expand how we define and measure student and school outcomes to also include broader and deeper sets of knowledge and skills that are valued by students, families, and communities,<sup>7</sup> and are necessary for students' success in the 21st century. And, it's time for assessment and data to be seen, first and foremost, as tools to inform student learning and school improvement, in addition to the purpose of accountability.

Fortunately, a growing movement of educators and policymakers around the country are doing just that. These pioneers are defining and measuring broader, deeper, and more student-centered outcomes for students and schools. **The purpose of this paper is to synthesize the research and ideas that underlie this movement, in order to grow a shared understanding, set of terminology, and vision for the future.**

Toward that end, this paper is divided into three parts:

- **Part 1** describes the **student and school outcomes** that research has shown to be important for student success in life, and that are valued by students, families, and communities.
- **Part 2** explores the various **purposes for measurement** in public education, and some of the specific **measurement strategies** that are used to capture the outcomes described in *Part 1*.
- **Part 3** draws on the analysis from the first two parts to present a **vision and specific ideas** for educators and policymakers seeking to define and measure student-centered outcomes. While our vision is focused on Minnesota, where our organization is based, the ideas presented in this paper are also relevant to other states.

# PART 1

## Defining Outcomes

In this part, we present our findings on the student and school outcomes that research has shown to be important for student success in college, career, civic participation, and life—and that are valued by students, families, communities, educators, and employers. Our research consisted of a comprehensive literature search, an examination of 15 existing outcomes frameworks, and interviews with over 50 students, families, educators, policymakers, community advocates, researchers, and business owners (see Appendix A for research methodology).

Our intention in this part is not to define the full set of outcomes that all states, districts, and schools must use, but rather to present a framework or “menu” of research-backed outcome domains and competencies that communities can draw on as they decide what student-centered outcomes they will define and measure. This will be described further in the third and final part of this paper.

Note that in this paper we use the word “outcome” in a broad sense, to describe both student learning outcomes (for example, math knowledge, critical thinking skills, and developing a positive sense of identity) as well as other student and school outcomes that support learning (for example, engagement, safety, and school culture). We now consider both of these broad categories in turn.

“States, districts, and schools must use an inclusive, asset-oriented process to identify the specific student-centered competencies they will define and measure, to be responsive to the students, families, and communities they serve.”

## Student Learning Outcomes: Four Key Competency Domains

We concluded from our research that, to be prepared for success in the 21st century, students need to develop competencies in four primary domains, as shown in the following figure. While we have chosen our own names for these domains, we do not claim originality; these domains are emerging as a consensus across the learning science research and the various outcomes frameworks we reviewed.

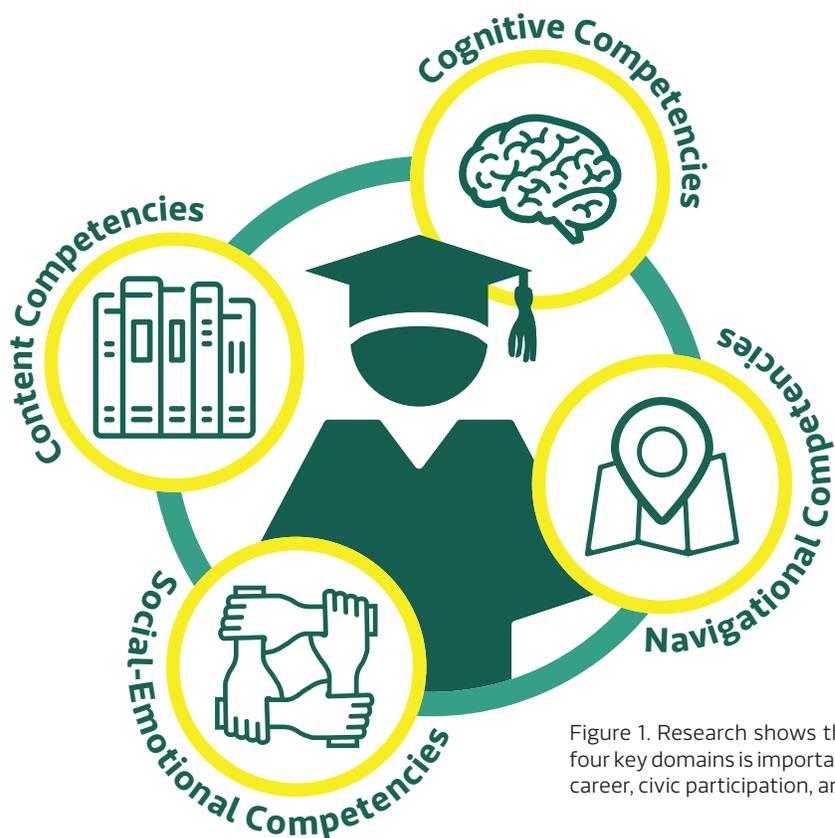


Figure 1. Research shows that developing competencies in four key domains is important for student success in college, career, civic participation, and life in the 21st century.

### A note on terminology

In this paper, we define a **competency** as a learning outcome of which mastery can be demonstrated. The three main types of competencies include:

- **knowledge**, for example, an understanding of the Industrial Revolution;
- **skills**, for example, writing persuasive arguments, and;
- **mindsets**, for example, a belief in one's own capabilities.

All three types of competencies are included in each of the four domains shown in Figure 1, as will be described further in this section.

## A Call for Inclusive Definitions of Competencies

In conducting our research, we were mindful that different communities have distinct ideas about outcomes for learning, and so sought to speak with and read the work of individuals representing a variety of cultural, racial, ethnic, linguistic, geographic, socioeconomic, and ideological backgrounds and identities.

We found the four domains described in this section are generally valued across different communities. At the same time there were important differences, and we assert that states, districts, and schools must use an inclusive, asset-oriented process to identify the specific student-centered competencies they will define and measure, to be responsive to the students, families, and communities they serve.<sup>8</sup> This will be described further in *Part 3: Moving Forward*.

Additionally, the idea of “developing competencies” must also be inclusive. Many students exhibit mastery of these competencies in their lives outside of school, yet in school many of those same students are disengaged, reporting that education is not relevant to their lives nor reflective of their histories and identities.<sup>9</sup> As such, we contend that educators must work with students to create supportive environments where all students see learning as relevant, and so want to express, expand, and demonstrate—in academic contexts—the competencies they often already possess.

We now turn to consider each of these four domains, including the key competencies within each domain, the primary sources of evidence that make the case for that domain, and the “blurry lines” that exist between that domain and other domains.



## Domain 1: Content Competencies

**Also called:** subject-area knowledge; academic content; foundational knowledge.

**Overview:** This domain is fairly well represented in the state standards in Minnesota and other states, however some important areas described below—such as self, cultural, technology, and media understanding—are not as explicitly addressed. While the competencies in this domain are primarily *knowledge*, some domain-specific *skills* are also included; for example, mathematical problem solving.

### Key competencies in this domain:

- **Academic disciplines.** Understanding of language arts, mathematics, science, and social studies—and including knowledge traditions from a variety of cultures and backgrounds.
- **Self, cultural, and global knowledge.** Understanding one’s personal history and that of one’s ancestors, cultures that are different from one’s own, macro-level global trends, and world languages.
- **Technology and media literacy.** Knowing how to navigate vast amounts of information available on the internet, evaluate the credibility of sources, and use technology to create and disseminate information.

**Evidence:** The evidence for this domain comes primarily from the cognitive science principle that all higher order mental processes build on foundational content knowledge and academic abilities,<sup>10</sup> in particular on numeracy and literacy.<sup>11</sup> Assessments of this domain—namely, standardized tests in reading and math—show correlation with success in other areas of life.<sup>12</sup> At the same time, some point out that high test scores are the results of other skills co-occurring with content knowledge and academic ability,<sup>13</sup> such as persistence, study skills, and short term memory, and are correlated with other characteristics such as family socioeconomic status and access to supplementary academic resources.

**Blurry lines:** As students exercise higher order critical thinking and problem solving within the Content Competencies domain—as is common, especially in middle and high school—they use a number of skills that fall more within the Cognitive Competencies domain, which we describe next.



## Domain 2: Cognitive Competencies

**Also called:** cognitive skills; higher order thinking skills; cognitive strategies; fluid intelligence; 21st century skills i.e. "the Four Cs".

**Overview:** This domain includes higher order thinking skills that are applied within and across disciplines to solve problems, generate ideas, analyze and synthesize information, formulate arguments, and create plans for action. Recent iterations of the state standards in Minnesota and other states incorporate more of this domain, although even more could be done.<sup>14</sup>

### Key competencies in this domain:

- **Critical thinking.** Conceptualizing, analyzing, synthesizing, and evaluating information gathered through observation, experience, reflection, and reasoning—and using that information to guide belief and action.<sup>15</sup>
- **Creativity** (also called inventiveness or innovative mindset). Using imagination, original ideas, or out of the box thinking to accomplish tasks, solve problems, produce works of art, or create inventions.<sup>16</sup>
- **Communication.** Possessing skills in writing, speaking, listening, and other nonverbal dimensions of communication.

**Evidence:** Much of the evidence for this domain comes from literature on the importance of overall cognitive capacity or “general intelligence”, which has been shown to overlap with and be part of all of the competencies in this domain.<sup>17</sup> Proponents of this domain point to the overall malleability of intelligence,<sup>18</sup> and the fact that encouraging positive mindsets can improve competency in this domain.<sup>19</sup> Research has long shown that competencies in this domain are highly context-dependent (i.e. do not “transfer” very well across fields<sup>20</sup>), which underscores the importance of designing learning experiences that develop both Cognitive Competencies and Content Competencies concurrently.<sup>21</sup> Finally, employers usually rank the skills in this domain high on their list, indicating they find them to be extremely important to employees’ success on the job.<sup>22</sup>

**Blurry lines:** Researchers differ in how they categorize interpersonal skills, especially communication and collaboration. Some frameworks (such as the influential 21st Century Skills Framework) group these into Cognitive Competencies, whereas others group them into Social-Emotional Competencies, which we describe next.



## Domain 3: Social-Emotional Competencies

**Also called:** character; noncognitive skills; interpersonal & intrapersonal skills; soft skills; habits of success.

**Overview:** This domain includes competencies related to one's understanding of and relationship with self and with others. The ideas that underlie this domain appear in writings on youth development from a variety of traditions and cultural heritages.<sup>23</sup> In the world of academic research, the initial work on this domain was done mostly in the field of personality psychology.<sup>24</sup> While the list below primarily uses terms that appear in academic research, we acknowledge that different knowledge traditions use different terms for these competencies.

### Key competencies in this domain:

- **Self-efficacy** (also called agency). Having conviction and confidence in one's ability to be successful with a situation, task, activity, or pursuit.
- **Positive self-image** (also called hope, positive future self, positive identity). Having a positive mental image of who one is, including the various dimensions of one's identity, and what lies ahead in one's future.
- **Growth mindset.** The belief that intelligence and ability are malleable, and that one can improve over time with effort.
- **Curiosity** (also called intrinsic motivation). Having a natural desire to learn more about and explore the world, and the experiences of others.
- **Self-awareness** (also called mindfulness). The ability to recognize one's emotions, thoughts, values, and behaviors—and how they relate to one another.
- **Self-management** (also called self-regulation, self-discipline). The ability to regulate one's emotions, thoughts, and behaviors in different situations.
- **Perseverance** (also called conscientiousness, resilience, grit, persistence). The ability to stay on task in working towards a solution or goal, in spite of setbacks.
- **Social awareness** (also called empathy, respecting others). The ability and desire to understand the experience of others, especially those from cultures and perspectives different from one's own.
- **Relationship skills** (also called social skills). The ability to build and maintain healthy and rewarding relationships with others.
- **Collaboration** (also called teamwork). The ability to work together productively with others in pursuit of a common goal or endeavor.
- **Generosity** (also called prosocial orientation, civic responsibility, ethical behavior, spirit of service). A belief that all people matter, and a commitment to service and stewardship of one's community, environment, and the world.

“Learning in this domain should emphasize understanding—on the part of all students, including those who identify with the dominant culture—how people from different cultures and backgrounds might define and experience these competencies differently.”

### Domain 3: Social-Emotional Competencies (continued)

Care must be taken not to define these competencies only in reference to Eurocentric, dominant cultural norms.<sup>25</sup> Rather, learning in this domain should emphasize understanding—on the part of all students, including those who identify with the dominant culture—how people from different cultures and backgrounds might define and experience these competencies differently. As an example, mastering the competency “relationship skills” would include understanding how maintaining eye contact in conversation can be seen as polite in some cultures, while other cultures consider averting one’s gaze to be a sign of respect.

**Evidence:** Most of the initial research on these competencies was conducted in the early childhood, youth development, and out of school spaces,<sup>26</sup> although research in the K-12 space has expanded significantly in recent years. While there isn’t space in this paper to review the evidence for each individual item in the list on the previous page, there is conclusive evidence that competencies in this domain are malleable rather than fixed,<sup>27</sup> can be intentionally developed through learning experiences and interventions,<sup>28</sup> support learning in other domains,<sup>29</sup> and are correlated with success in one or more areas of college, career, civic participation, and life.<sup>30</sup> See Appendix A for more information and a full bibliography.



### Domain 4: Navigational Competencies

**Also called:** college and career skills; practical skills; wayfinding skills; transition knowledge and skills; sense of purpose.

**Overview:** This domain includes practical competencies a student needs to navigate the quickly changing world of work and life after public education. Of all four domains, this is the newest domain to be commonly included in frameworks, with less common language developed and less consensus as to what it includes.

#### Key competencies in this domain:

- **Exploration and planning skills.** Identifying interests, exploring potential careers and career pathways, and setting longer-term life goals.
- **Opportunity seeking skills.** Applying to college and for financial aid, seeking scholarships, searching for jobs, and doing job interviews.
- **Social capital skills.** Cultivating networks, seeking mentors, and drawing on one’s social capital to identify opportunities for professional advancement.
- **Practical life skills.** Financial literacy and managing money, finding a place to live, preparing healthy food, and caring for one’s physical and mental health.

**Evidence:** As the frequency with which people change jobs and careers has increased—driven by factors such as globalization and technological automation—so too have calls for more emphasis on this domain in school.<sup>31</sup> Most evidence for this domain comes from evaluations of programs that successfully help students develop skills in this domain,<sup>32</sup> as well as from studies showing how significant barriers such as complicated admissions and financial aid forms are to some students and families.<sup>33</sup> Evidence for the social capital dimensions of this domain comes from sociology, where the presence of such capital is identified as a primarily factor influencing economic mobility.<sup>34</sup>

## Other Outcomes that Support Learning

At the beginning of *Part 1*, we defined “outcomes” to include both student learning outcomes, as well as other student and school outcomes that *support learning*.<sup>35</sup> In this section we explore the latter category.

We acknowledge that in practice the lines between learning outcomes and outcomes that support learning can be blurry. For example, while “sense of belonging” appears below as an outcome that supports learning, arguments could be made it is also a learning outcome in and of itself. We accept this definitional ambiguity but contest that, either way, the outcomes described in this section are important.

### Other Student Outcomes that Support Learning

Some of the *student* outcomes that have strong evidence in research, and per interviews and surveys also emerged as important to students and families,<sup>36</sup> include:

- **Engagement.** The student sees school as relevant to their lives and expresses interest in learning. They are regularly engaged in deep, active, rigorous learning that involves retrieval, synthesis, and processing.<sup>37</sup>
- **Relationships and Expectations.** Adults and peers at school trust and respect the student, believe in their potential as a person and in their abilities as a scholar, and hold them to high expectations.<sup>38</sup>
- **Sense of Belonging.** The student feels valued and embraced by the school community, and the broader community of which it is a part. They feel they can bring all dimensions of their identity with them to school without fear, shame, or embarrassment.<sup>39</sup>

### Other School Outcomes that Support Learning

Some of the *school* outcomes that have strong evidence in research, and per interviews and surveys also emerged as important to students and families, are listed below.<sup>40</sup> Unless otherwise noted, the evidence for many of the school outcomes below draw on the extensive literature on **school culture and climate**.<sup>41</sup>

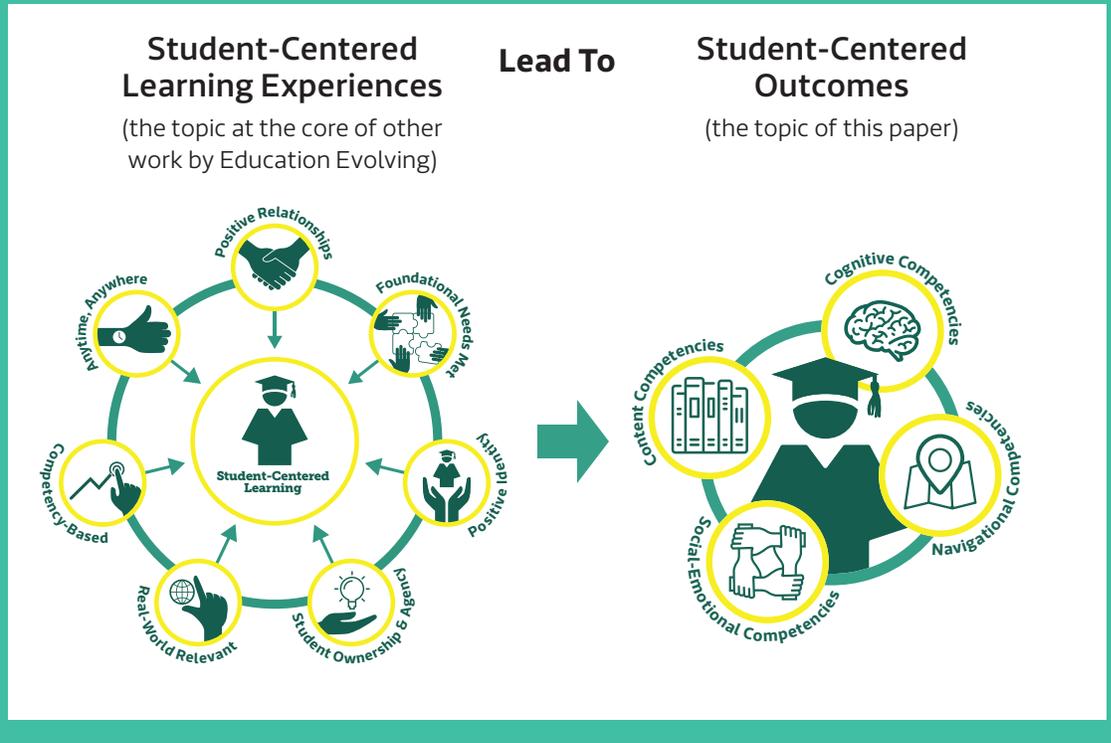
- **Safety.** Members of the school community (educators, students, and families) treat each other with respect and feel safe from physical and psychological harm.<sup>42</sup> There are rarely or never incidents of bullying or violence, and restorative practices are used where possible rather than punitive disciplinary actions.
- **Culturally affirming environments.** Students’ cultures and identities are respected, honored, and celebrated in school. Adults and students make an effort to understand each other’s cultures and traditions. Students have adult role models in the school with whom they share elements of cultural, racial, and ethnic identity.<sup>43</sup>
- **Community involvement.** Families and community members feel welcome at school, have opportunities to participate at times and in ways that work for them, and are included in school decisions.<sup>44</sup> The school has strong relationships with local organizations, businesses, and other community partners, and draws on those partnerships to provide real-world learning opportunities for students.
- **Strong and stable staffing.** The school is staffed by highly competent, committed, and culturally conscious educators.<sup>45</sup> These adults like working at the school—with minimal turnover from year to year—and have the opportunity to access and shape professional development opportunities.
- **Educational opportunities.** The school offers a rich and rigorous set of program offerings, either through courses/classes, or non-traditional avenues such as projects or internships. Students are able to participate in AP, IB, CTE, PSEO and college in the schools courses, as well as music, arts, athletics, internships, and other electives.

- **Strong finances.** The school spends its funds in accordance with an approved budget that is well-aligned with its vision and mission, and has protocols to prevent waste and fraud. The school receives equitable resources to meet the needs of the students it serves (noting that this is often not a factor the school can control).
- **Strong operations.** The school has strong, functioning systems in place with respect to human resources, transportation, facilities, enrollment, and other back office systems that support teaching and learning.
- **Strong governance.** The school’s board or site council upholds their governance duties, ensuring that all students learn and that the school operates legally and ethically. The board operates in positive partnership with teachers and administrators, and avoids micromanaging or becoming directly involved in school program and personnel decisions.

## How to Foster Student-Centered Outcomes?

Here in *Part 1* we have described the student and school outcomes important for student success in the 21st century. We acknowledge an obvious next question emerges: How can these student-centered outcomes for schools and students be fostered?

That is a substantial question, which is beyond the scope of this paper, but which Education Evolving’s Theory of Change, and the rest of our organization’s work, addresses directly.<sup>46</sup> In sum, we assert that *student-centered learning experiences*<sup>47</sup>—enabled by larger professional roles for teachers, and state and district policies which create openings for innovation—are the route to these broader, deeper, more student-centered outcomes. Read more at: [www.educationevolving.org/theory](http://www.educationevolving.org/theory)



# PART 2

## Measuring Outcomes

While there has been some movement over the last decade to define and value the broader, deeper, more student-centered outcomes described in *Part 1*, measurement of those outcomes is still lagging. Partly, this is fine; not everything needs to be measured, and simply setting new goal posts can help students, teachers, schools, districts, and states to reorient toward more student-centered outcomes.

At the same time, we assert it is critically important to increase *measurement* of student-centered outcomes. In this part, we describe why measurement and data are useful and important, explain three main purposes for which they can be used, and finally inventory nine main strategies that we found are currently used to measure student-centered outcomes.

Our intention in this part is to present a framework of possible measurement purposes and strategies for state, district, and school communities to consult as they craft their own cohesive approach to measuring outcomes. This will be described further in the third and final part of this paper.

# Why Measurement? Three Main Purposes

Why are measurement, assessment, and data useful and important for advancing student-centered outcomes? Practically speaking, there are three main purposes—each held by different stakeholders within public education—which together answer that question. We consider these three purposes in turn.

## 1. To Inform and Improve Teaching and Learning

First, and arguably most importantly, students and educators working directly with students can use data to take a pulse on where students are at and adjust teaching and learning accordingly. This can include discerning areas where individual students are struggling in order to identify needed supports and interventions, or understanding where a class or group of students is as a whole, to know what concepts need review. Data can also help students to take ownership of their learning, celebrate their growth and successes, and accelerate boldly ahead toward the goals they set for themselves.

Additionally, administrators, teachers, and other educators at the school or district level can use data to illuminate which programs and strategies are working when, where, and for whom, and identify when adjustments might be needed. Writings about data for this purpose use terms like “formative assessment” or “assessment for learning”, which often happens in “professional learning communities (PLCs)”<sup>48</sup> or “networked improvement communities”.<sup>49</sup>

“First, and arguably most importantly, students and educators working directly with students can use data to take a pulse on where students are at and adjust teaching and learning accordingly.”

## 2. For Research and Evaluation

Researchers use data to produce generalizable conclusions that can inform practice at scale. Rather than informing practitioners’ work with specific students or schools, the focus of research is to understand broadly what learning models, interventions, and instructional strategies work well, and under what conditions. Of all three purposes, research is furthest along in measuring student-centered outcomes; indeed, many of the measures now being contemplated for other purposes were originally created for research.

## 3. For Transparency and Accountability

With public education provided for in state constitutions and funded with tax dollars, policymakers and the public value using data to understand how students, schools, and districts are doing.<sup>50</sup> Namely, families report that they value using data—for example, data on a school’s “report card” as required under federal law—to help select a school to attend, to support their school in areas where it is struggling, and to advocate for their students.<sup>51</sup> This purpose is often called “data for transparency” or “soft accountability”.<sup>52</sup>

Additionally, policymakers, school districts, and charter authorizers charged with overseeing public schools benefit from using data to monitor how individual schools are doing, in order to celebrate success and provide targeted support, interventions, and (although rare, at least in Minnesota) closure. This purpose is typically called “data for accountability”.

## A Common Theme: Promoting Clarity and Objectivity

Across these three purposes, a common theme is the role measurement and data can play in promoting objective, comparable conclusions across different students and schools. While hardly perfect, focusing on reliable and valid measurement can help combat bias and promote clear and high expectations for all students.<sup>53</sup>

Next, we describe specific measurement strategies that can be used for these three purposes.

### Nine Measurement Strategies Commonly Used

From our research, we identified nine strategies commonly used to measure the student-centered outcomes described in *Part 1*. While most of these measurement strategies are focused on the individual student—which yield data that could be aggregated to the school, district, or state level—the ninth and final strategy is focused at the school level.

“Focusing on reliable and valid measurement can help combat bias and promote clear and high expectations for all students.”

**1. Achievement tests** are a classic and long-standing measure of student learning outcomes. Most of the time they use a multiple-choice, true/false, or short answer format. Tests requiring longer, more involved answers begin to blur the line into performance assessments, which are described below.

Examples: The Minnesota Comprehensive Assessments, a series of multiple choice tests given to Minnesota students in English language arts, math, and science. Or, the Northwest Evaluation Association Measures of Academic Progress assessment (NWEA MAP), which is commonly used for formative purposes. Additionally, educators often create achievement tests at the classroom and school level, for example multiple-choice formative quizzes or end of course exams.

**2. Embedded assessments** are not standalone events, but rather use data collected as students participate in learning activities. For example, a student who plays an online computer game to practice Algebra generates data on concepts they do and do not understand; as a more futuristic example, researchers are developing facial expression recognition technology to monitor a student as they participate in a virtual reality world in order to assess their “curiosity.” With student learning increasingly assisted by technology, the amount of data that could be examined as embedded assessments, without interrupting student learning, is growing rapidly.

Example: In the popular software program DreamBox, students engage in math games and activities to practice their skills. At the same time, the software tracks their level of mastery of various competencies, which teachers can review and offer additional help to students as needed.

**3. Performance assessments** ask a student to solve a complex problem, demonstrate their work, and/or produce a tangible final product. Their results are then evaluated against a rubric, a model standard of work, or both. Many dimensions of performance can be considered in a single assessment; for example, a reviewer could look for evidence of mathematical knowledge, writing, creativity, and teamwork. While performance assessments have been around for decades, in recent years advances in both technology and psychometric practice have increased their feasibility, reliability, and validity.

Example: New Hampshire’s Performance Assessment of Competency Education (PACE) pilot gives performance assessments to students grades 3 through high school. As an example, one PACE high school math task might be: “Your town’s population is predicted to increase over the next 3 years. Please analyze, write, and present to the city council a proposal to build a water tower that can hold 40,000 cubic feet of water.”

# Nine Measurement Strategies Commonly Used (continued)

**4. Portfolio assessments (also called work sampling)** involve evaluating student performance based on a sample of their work selected by the student themselves, by their teacher, or randomly. Evaluators use techniques similar to those used for performance assessments—including rubrics and/or model samples of work. An evaluator may be the students' teacher, someone else at the school, or an external party.

Example: Students at Mission Hill School in Boston prepare and defend portfolios of their work at the end of seventh and eighth grade. Students select pieces of work to demonstrate their achievement and growth in literacy, mathematics, science, theme studies, and art. Students also demonstrate evidence of developing the school's five "Habits of Mind" and four "Habits of Work".<sup>54</sup>

**5. Field observations** are conducted by educators present while a student is engaged in learning. These assessments have long been used in early childhood education; for example, a teacher may count the number of times a child shares their toys with others. For older students, teachers may record perceptions such as how engaged or on-task a student is. Teachers often calibrate their behavioral observations in reference to a rubric.

Example: Montessori educators have developed a number of resources, including forms to tally frequencies of certain behaviors, for tracking the progress of young children on skills such as concentration, independent agency, and cooperation.

**6. Surveys** are typically used to assess either how people feel (i.e. whether their school's climate feels safe, respectful, supportive, etc.) or how they perceive their abilities (i.e. knowledge, skills, mindsets, and behaviors). They can be given to a variety of audiences, including students, families, teachers, and administrators. Often times a survey will ask these different groups a similar set of questions in order to get multiple perspectives on what is being measured. For example, a paired survey that measures the Social-Emotional Competencies described in *Part 1* might ask a student to self-report on their perceived level of mastery of a competency, and also ask their teacher to report on perceptions of that same student.

Example: The 5Essentials survey, used by over 6,000 schools and districts across the country, including several large districts in Minnesota as well as all schools and districts in Illinois (where it was developed), asks students, teachers, administrators, and families a series of questions about five school characteristics found to be important for school success.<sup>55</sup>



**7. Longitudinal data** is collected on students throughout their lives, including and especially after they graduate from high school. The most common measures include: college enrollment, remediation, persistence, and graduation; as well as workforce participation and earnings. Less common measures include: civic participation (such as voting), health outcomes, and more. The logistical and ethical challenge with these measures is that they require accessing sensitive information from various databases. The upside is they help tell the “true” story of whether students have been prepared for success in their lives beyond school.

Example: The Minnesota State Longitudinal Education Data System (SLEDS) tracks data on individual students from kindergarten through post-secondary education and into the workforce, including college enrollment, retention, and more.

**8. Administrative data** is information collected about the programs, activities, and incidents that take place as part of a school’s learning program. Common measures include: attendance and tardiness rates, suspension and expulsion rates, credit attainment, internship placements, and participation rates in AP, IB, CTE, PSEO, or college in the schools courses. Additional measures at the school (rather than student) level include: teacher retention rates and student waiting list size.

Example: A number of state and district data systems calculate an “On-Track Indicator,” which is an overall metric of whether a student is on track to graduate.<sup>56</sup> The specifics of the metric vary by state, but they commonly measure the percentage of ninth grade students who earn enough credit to be one-fourth of the way to meeting high school graduation requirements.

**9. External reviews** are conducted by someone external to the school who visits the school with the purpose of observing student learning, school culture, or other dimensions of school performance, usually aided by tools such as checklists and rubrics. Often times this person is either with the entity overseeing the school (such as a school district or charter authorizer), or a reviewer they have contracted. While sometimes these reviewers make general judgments about whether a school is helping to foster competencies in students, this strategy is different from the others in that it is explicitly targeted at the school level rather than individual students.

Example: In the Annual School Review Process, used in the United Kingdom, trained reviewers visit schools and evaluate their operations and program against a set of criteria. A second example common in Minnesota is the regular reviews and site visits that charter school authorizers do of the schools they authorize.<sup>57</sup>

# An Authentic, Integrated, Multi-measure System

A fair question readers likely have at this point in the paper is:

*How can teachers, schools, districts, and states that want to expand the student-centered outcomes they measure, do so within the constraints of limited time and energy, and without taking time away from learning?*

In a worst-case scenario, one can imagine a separate measurement event each hour of the day: first a diagnostic reading assessment, then a critical thinking performance task, then a curiosity skill survey, etc. With students, teachers, and the public already experiencing high levels of assessment fatigue,<sup>58</sup> it would make anyone's head spin. Fortunately, there is an alternative: moving toward an authentic, integrated, multi-measure system. This shift requires at least three significant changes in mindset.

**First**, we must see measurement primarily as an exercise in “collecting authentic evidence”, often work produced by students as part of the learning experience. For example, the performance, portfolio, embedded, and observation-based assessments described earlier in this section can be seamlessly (and sometimes invisibly) integrated into learning, without requiring a separate “assessment” or “test day”.

**Second**, we must use measurement strategies that look at several outcomes at once. For example, many schools using project-based learning require end-of-year student projects that involve research, writing, and presenting on a multi-dimensional topic. A complex piece of work like this provides students the opportunity to exhibit many different competencies, each of which can be reliably evaluated using the measurement strategies above.

**Third**, we must accept that multiple measurement strategies used together can paint a more holistic, integrated picture of outcomes.<sup>59</sup> For example, a student's “persistence” might be measured both by a survey of the student and their teacher, as well as by a performance assessment that requires persistent, extended inquiry on a complex topic.

So how, specifically, do we move forward? *Part 3* seeks to answer that question.

“Fortunately, there is an alternative: moving toward an authentic, integrated, multi-measure system.”

**Table 1. Choosing measurement strategies for student-centered outcomes**

The following table contains our estimations of the general appropriateness of the measurement strategies described in *Part 2*, for each of the outcome domains described in *Part 1*.

This table is intended to help educators, schools, districts, and states get ideas for assembling their own integrated measurement system. We compiled this table based on general findings from interviews and research, however we emphasize that the true appropriateness of a measurement strategy always depends on the combination of the purpose of the measure (i.e. formative, accountability, etc.), the specific measurement instrument used, and the specific outcome or competency measured.

**KEY**

	Not commonly used to measure this outcome domain
	Sometimes used for this outcome domain, or used for a portion of the domain
	Commonly used for this outcome domain

Possible measurement strategies to use	What are you seeking to measure?				
	Content Competencies	Cognitive Competencies	Social-Emotional Competencies	Navigational Competencies	Other Outcomes that Support Learning (school culture, engagement, etc.)
Achievement Tests					
Embedded Assessments					
Performance Assessments					
Portfolios/Work Sampling*					
Field Observations*					
Surveys*					
Longitudinal Data					
Administrative Data					
External Reviews					

\* Indicates special care must be taken with respect to reliability, validity, and overall appropriateness of this measurement strategy, if it is used for the purpose of accountability.

# PART 3

## Moving Forward

*Parts 1 and 2* of this paper yielded the conclusion that equitably preparing all students for success in the 21st century will require defining and measuring a broader, deeper, more student-centered set of outcomes for both students and schools. But what does that look like in practice, and how do we get there?

In this final part, we draw on the research and analysis from *Parts 1 and 2* to present a high level vision for a new reality at three distinct levels—for the **state of Minnesota**; for **school and district learning communities**; and for **individual students and families**—and propose ideas for next steps that pioneering educators and policymakers should consider.

Importantly, this vision and these ideas are not intended to be prescriptive, but rather to spark an inclusive conversation about next steps. Nor do we claim this vision as ours; rather, many of the leaders we interviewed in writing this paper are living portions of this vision already, and inspired what we write here. We present this vision and these ideas with humility and respect for those already blazing trails.

## Three Levels Inform a Full Set of Outcomes

In Minnesota, there are three main levels at which outcomes can be defined and measured—the state, the learning community (i.e. the school or district), and the individual student and their family. Together, these shape the complete picture of target outcomes for a student, with each level including and expanding on the preceding level, as illustrated in Figure 2. As we describe below, this is both the way things are because of state law but also **as it should be**.

**State.** Minnesota law requires state standards for what students should learn in language arts, math, science, social studies, and physical education.<sup>60</sup> In general, having state standards is important because public education exists in the state constitution and is funded with public dollars<sup>61</sup> and because some learning outcomes, such as foundational literacy, are so critical to student success that all students can and should master them.<sup>62</sup> With that said, we do present some ideas for improving what’s *included* in state standards, below.

**Learning community.** Under Minnesota law, schools and districts are free both to decide how, concretely speaking, the standards will be covered for their local learning community, and to define additional learning outcomes beyond those specified in state standards. This is as it should be; each community is unique in its composition and what it values for students to learn.

**Individual student and family.** Under Minnesota law, defining individual student-level learning outcomes is fully permitted and, in fact, under the 2013 World’s Best Workforce law, districts are required to create personal learning plans for students in which they “explore their educational, college, and career interests, aptitudes, and aspirations.”<sup>63</sup> This is as it should be; every student and their family have unique values, hopes, and dreams for learning, which should be considered by schools and teachers.<sup>64</sup>

While the following section presents ideas for defining and measuring student-centered outcomes at all three of these levels, we emphasize that **school and district learning communities (the “middle level” in the list above) need to lead the movement** toward defining and measuring more student-centered outcomes. Local learning communities are where outcomes and assessments become “real”, by shaping and informing the actual day-to-day learning experiences students have. Our ideas for states below should be seen as supporting a movement led by educators and communities.

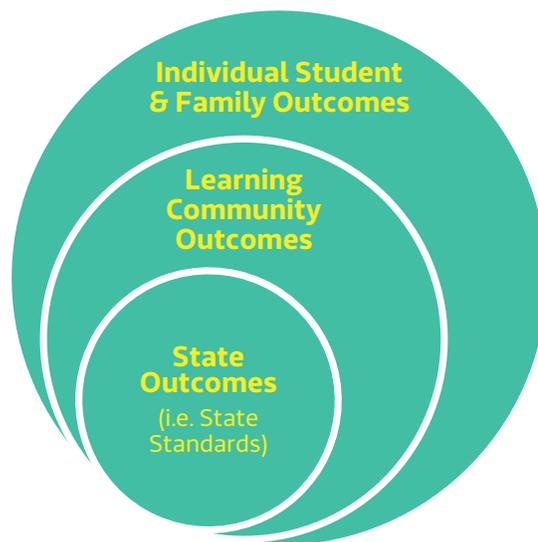


Figure 2. Outcomes defined at three levels together form a complete set of target outcomes for a given student.

“School and district learning communities need to lead the movement toward defining and measuring more student-centered outcomes.”

# Specific Ideas for Moving Forward

## A. Ideas for States

### A1 **Revise state standards to include more student-centered knowledge and skills**

While having state standards is important for the reasons described above, imagine if future revisions of those standards better reflected the student-centered outcomes described in *Part 1*. Namely, imagine if standards emphasized Content Competencies around media and technology literacy, global and cultural understanding, and personal history and identity exploration.<sup>65</sup> And, imagine if standards prioritized Cognitive Competencies such as critical thinking and problem solving, over superficial coverage of a wide base of content.<sup>66</sup>

This approach to standards is used by the highest performing, most educationally equitable countries in the world, including Singapore, Finland, and Canada<sup>67</sup>—and increasingly used in the United States.<sup>68</sup> It emphasizes what researchers call “focus and coherence,”<sup>69</sup> by prioritizing deep, enduring concepts and foundational habits of mind, which are applicable to future academic content and to students’ future lives.<sup>70</sup>

### A2 **Make state “report cards” easier to use, and add a few new student-centered measures**

Federal law requires Minnesota to create a “report card” website that provides information on all of the state’s public schools and districts.<sup>71</sup> However, many of the people we interviewed for this paper commented that the current website was difficult to use. Imagine if the report card website was more useful to students and families in making choices about which school to attend, and to educators and communities in helping support improvements at their school. Namely, imagine if it was easier to navigate and understand, and more accessible to families whose native language is not English.

And, imagine if the report cards featured a limited number of new indicators that painted a more holistic picture of student and school outcomes.<sup>72</sup> To be clear, the idea is not that statewide measures capture a comprehensive set of student-centered outcomes; as described previously, we believe the local learning community is the level at which outcomes and assessments can best shape and inform the day-to-day learning experiences students have. However, local communities do not exist in isolation, and our end goal is statewide change toward student-centered outcomes. In order to signal that the state values student-centered outcomes, to provide transparent information to families and policymakers, and to tell a data narrative that will drive the movement in the long term, we need a small set of uniform, comparable, statewide measures of student-centered outcomes beyond the conventional academic measures that predominate today.

A few possible such measures—some of which MDE already has or will be rolling out—include: consistent attendance; student disciplinary incidents; teacher experience levels and retention rates; credit attainment and on-track progress toward graduation; participation in AP, IB, CTE, PSEO, college in the schools, internships, or other advanced learning opportunities; achievement and graduation rates that are adjusted for the amount of time a student has been enrolled at the school; and post-secondary enrollment and workforce participation rates after graduation. Most of these indicators would not require schools and districts to collect new information, although some updates to state data systems would be necessary.

“To tell a data narrative that will drive the movement in the long term, we need a small set of uniform, comparable, statewide measures of student-centered outcomes.”

### **A3 Implement a yearly, statewide survey of students, families, and educators**

Another indicator commonly included on report cards, appearing in at least 11 other states, are the results of statewide surveys of students, families, and/or educators.<sup>73</sup> These surveys can yield important information about both the development of Social-Emotional Competencies in students, as well culture, climate, and student engagement in schools.

Imagine if Minnesota revamped its current statewide student survey to better fulfill this purpose. Namely, imagine if it was given every year rather than every three; was taken by students, families, and educators rather than only students; and measured a set of student and school outcomes consistent with *Part 1* of this paper. A diverse and representative group of educators, researchers, and community members should be involved in this revamp process, to ensure the survey is inclusive of those from different cultures and backgrounds, and useful to educators, students, and families.

### **A4 Improve the state's standardized tests**

While adding a few new statewide indicators of student-centered outcomes is important, Content Competencies still matter, and standardized tests have an important role to play in the state's overall measurement system. However, imagine if state tests were less intrusive for students, and more helpful for educators and families wanting to support them.<sup>74</sup>

For example, imagine if the state test could be taken in separate parts throughout the school year rather than all at once at year end (as is possible under ESSA), with results available the next day.<sup>75</sup> Or, imagine the state partnering with a company that produces formative assessments (like the NWEA MAP) so that the same tests currently used for formative purposes could also serve for accountability with, of course, important modifications and accommodations.<sup>76</sup> Or—even bolder still—imagine giving districts the option to embed standardized state questions into end of course exams, with safeguards in place to ensure question security.

### **A5 Launch a state performance assessment pilot, perhaps starting with science**

Imagine if the statewide assessment system better measured Cognitive and Social-Emotional Competencies through the use of performance assessments.<sup>77</sup> As described in *Part 2*, in performance assessments students are given a complex task involving higher order thinking. Their work is then evaluated by teachers (with safeguards to ensure reliability and consistent high expectations for all kids), and used for formal state proficiency determinations.<sup>78</sup> Students would still take standardized tests in some years; in other years they would take these performance assessments.

Minnesota has an opportunity to move in this direction over the next two years. The state science standards are currently up for revision, and when that process is complete the state science test will need to be revised. Imagine if MDE piloted a performance assessment in science with a subset of schools and districts, much like the state of New Hampshire did (see case study below). Depending on the results, the pilot could be scaled to other schools and districts, and to math and reading.

“Imagine if the statewide assessment system better measured Cognitive and Social-Emotional Competencies through the use of performance assessments.”

## **A6 Explicitly authorize competency-based education in Minnesota**

Competency-based education is an approach in which student learning is oriented around mastering clearly-articulated, measurable learning outcomes (i.e. competencies). Students have choices in how they meet those competencies, receive differentiated support based on their individual learning needs, and advance by demonstrating mastery of competencies (rather than time in seats). There are some schools and districts that are already implementing competency-based education practices in Minnesota, but the majority of educators we spoke with indicated they do not read current state statute as permitting this form of education.

Imagine if Minnesota law explicitly authorized competency-based approaches to defining and measuring state standards and local learning outcomes. Education Evolving worked with legislators to introduce such a bill during the 2018 legislative session,<sup>79</sup> and will be continuing to advance competency-based education legislation in 2019.

In fact, explicitly authorizing competency-based education would be an ideal way for the state to support and encourage the process of local school and district learning communities defining and measuring their own student-centered outcomes—which is the focus of the ideas in the next section.

### **Case Study: New Hampshire & their Performance Assessment Accountability System**

In 2015, New Hampshire received a federal waiver to use performance assessments—in some grade levels and subjects—to make proficiency and growth determinations for students as part of their statewide testing and accountability system. Students still take standardized tests in some grades; for example, they take the state’s standard math test in grades 4 and 8, and the SAT in grade 11.

New Hampshire kicked off this transition with a pilot among a small group districts, and has been adding districts every year, with the idea that eventually the new system will be used statewide. Currently, over 30 percent of districts in the state participate in PACE. Educators who participate go through extensive training on performance assessments, and regular calibration of inter-rater reliability. Early data from districts participating in the pilot show promising academic results.<sup>80</sup>

## B. Ideas for School and District Learning Communities

### **B1** Define your local community's target outcomes, i.e. "portrait of a graduate"

Imagine if, in every learning community across the state, students, families, educators, and community members came together to explicitly define a "portrait of a graduate", which articulated the learning outcomes that mattered to them. The various outcomes described above in *Part 1* are intended to be a resource for educators who are facilitating the process, to help align what they are hearing from their communities and families with outcomes that have evidence in research.

Imagine if, coming out of this process, the learning community produced a set of, say, 5 to 10 key competencies or outcomes they valued, depicted in some graphic like the one shown in Figure 3. For additional examples and resources for facilitating this process, see: [portraitofgraduate.org](http://portraitofgraduate.org).

And finally imagine if, as a result of the collaborative process through which they were conceived, these outcomes were not just a poster on the wall, but were truly shared, understood, valued, and lived out by all members of the learning community and were palpable everywhere—from the objectives in courses and curriculum, to the conversations among educators in PLCs, to the grading categories used in online learning management systems, to the report cards sent home with students.

## Learning Community: District or School?

For district schools, what constitutes the "learning community?" Is it the individual school, the entire district, or some mix?

We assert that the answer depends in part on the size and homogeneity of the district. While it's reasonable to consider a small and/or homogeneous district a single learning community, that is often not the case with large districts serving a diverse set of communities.

Large districts can certainly play a collaborative role in setting some common vision or outcomes. However, setting *all* outcomes district-wide runs the risk of preferencing the values of communities with political power—which often excludes students and families traditionally underserved.

In sum, in large, diverse districts, we urge a process of setting most learning community outcomes at the school rather than the district level, so all communities' values are included.

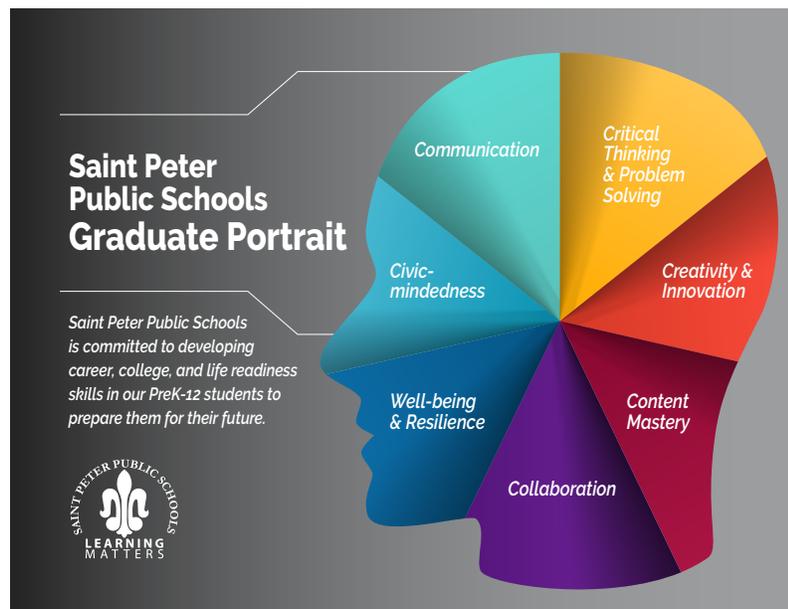


Figure 3. A sample "portrait of a graduate", used with permission from Saint Peter Public Schools, a district of about 2000 students located in south central Minnesota.

## **B2 Implement software for documenting evidence and aggregating multiple measures**

Imagine if schools and districts used online software in which students could document their evidence of progress toward learning outcomes. The evidence logged in that system could take many forms—scores on state and local assessments, student surveys, feedback from teachers, pictures of students’ projects, videos of students’ presentations, results on performance assessments, and more. The system could aggregate these pieces of evidence and indicate a student’s overall progress toward mastering both the outcomes the community had articulated (per Idea B1) as well as the state standards.

“Imagine if this collected evidence and data wasn’t just used to “check a box” or give a grade, but became the basis for ongoing reflection and conversation . . . about the next step in each student’s learning journey.”

And, imagine if this collected evidence and data wasn’t just used to “check a box” or give a grade, but became the basis for ongoing reflection and conversation among students, teachers, and families, about the next step in each student’s learning journey.

Several software vendors offer platforms that can serve this function, and the landscape of promising options is always growing. In the years ahead, it’s critical that these vendors safeguard the privacy of student data collected, and provide opportunities for all schools and districts, including those that are under-resourced, to access this emerging technology.

## **B3 Join with other learning communities to share lessons learned**

Imagine if educators from several different schools and districts, as well researchers and measurement experts, came together as a “collaborative” to strengthen their practice of defining and measuring student-centered outcomes. For example, imagine if such a collaborative hosted a workshop on the competency of “critical thinking”, at which educators and researchers shared their definitions of the concept, discussed actual samples of student work, created performance tasks and rubrics to assess it, and refined strategies for helping students to improve on this skill.

“Imagine if educators from several different schools and districts, as well researchers and measurement experts, came together as a collaborative.”

## **B4** Create a dashboard or scorecard for local learning community outcomes

Imagine if schools and districts created their own dashboard or scorecard, built from their locally-defined learning outcomes per Idea B1 and other school outcomes, and used that dashboard both to reflect on and improve their programs and initiatives, and also to communicate transparently with families and communities about their progress.<sup>81</sup> And, imagine if their relationship with the entity that supports and oversees them—be it a school board for districts, or charter authorizers and boards for charter schools—used measures from this dashboard as the basis for support and accountability.

### **Case Study: Lindsay Unified School District**

Lindsay Unified School District, located Southeast of Fresno, California, serves 4,200 students, nearly all of whom qualify for free or reduced price lunch, and nearly half of whom are English language learners. In 2007, after an extensive community engagement process, the district settled on a bold vision for competency-based learning, centered on 10 core values.<sup>82</sup>

Students' learning is oriented around learning targets, which include both reading and math standards as well as seven "lifelong learning" standards. Teachers provide various forms of customized support to students, including small-group instruction and one-on-one coaching, while other students work independently. Students have several options for demonstrating evidence of having met a learning target, including projects, performance tasks, formative assessments, and more.<sup>83</sup>

Since implementing their new model, the district has seen gains in reading, math, and science proficiency rates, as well as substantial improvements on school culture related measures such as suspension rates.<sup>84</sup>

### **Case Study: High School for Recording Arts**

High School for Recording Arts is a small charter high school in Saint Paul, Minnesota that uses a hip-hop themed, project-based learning program to engage students, many of whom are behind on credits or have previously dropped out. The school has defined 6 competencies as a community, including social justice, citizenship, and community involvement; self-starter and self-advocacy skills; entrepreneurialism and career readiness; creativity and critical thinking; communication and literacy; inquiry and technology skills; and practical life skills. Each competency contains a number of specific learning objectives students must meet within it.

Students complete projects and take courses both to master local competencies and learning objectives, and also to earn credits and meet standards as required by the state. A single project or course usually helps students meet both local outcomes and state standards at the same time. Students and teachers use an online system to help document and track progress, and to generate transcripts.

Additionally, students take the Hope Survey,<sup>85</sup> which measures a number of social-emotional competencies, as well as the NWEA MAP test to track progress and identify areas for improvement in language arts and math. Finally, HSRA tracks a number of schoolwide measures, including the overall rate of credit attainment among students, attendance and graduation rates, and more.

## C. Ideas for Individual Students and Their Families

### C1 Families make informed choices, and become advocates, based on better information

Imagine if each student sat down with their family, or other supportive adults in their lives, to select a quality school that was a good fit for them. This might entail browsing the improved state “report card” website (see Idea A2), as well as browsing the websites and dashboards of individual schools to see their learning program themes and the outcomes they value (see Idea B1 and B4). Imagine if students and families then used that information not only to inform their school selection, but also to raise helpful, informed questions about how their school might improve.

### C2 Each student creates a personal learning plan for meeting state, learning community, and individual outcomes

Imagine if each student were asked by their teacher: “What’s important to you?” Imagine if the teacher and student then together decided how required state standards and learning community outcomes would be met, while also respecting the students’ own interests, aspirations, and desired outcomes. Imagine if these conversations were captured in a personal learning plan for each student, which plotted their educational journey toward meeting state standards, local learning community outcomes, and their own personal learning outcomes.

“Imagine if the teacher and student then together decided how required state standards and learning community outcomes would be met, while also respecting the students’ own interests, aspirations, and desired outcomes.”

## Conclusion

We close by reiterating a point from the introduction. It’s imperative we value an expanded set of student-centered outcomes that will equitably prepare all students for success in the 21st century. At the same time, we must continue to value academic achievement, which research shows is also critical for student success. Debates that put one above the other are not productive; there is strong evidence **we must value both**.

Research on social change suggests this needed shift toward “valuing both” will be most authentic, deep, and lasting if it begins with those who are ready.<sup>86</sup>

Fortunately, pioneering educators and policymakers are already leading

the way. We envision the ideas presented in this paper will be embraced by increasing numbers of early adopters, with additional students, families, educators, communities, schools, districts, and states coming on board as they are ready.<sup>87</sup> We are here to support those early adopters however we can.

In sum, to equitably prepare all students for success in a rapidly changing world, schools must be redesigned with students at the center. Partly this will mean changing students’ learning experiences, but it must also involve changing the outcomes we define and measure. The two *must* go hand in hand; to flip the old adage around, we cannot change what’s done if we don’t define and measure what matters.

*Young people “deserve an education system that accomplishes two goals in concert with one another: preparation to confront the conditions of social and economic inequity in their daily lives and access to academic literacies that make college attendance a realistic option.”*

- Dr. Jeffrey Duncan-Andrade and Dr. Ernest Morrell<sup>88</sup>

# Appendix A: Research Methodology

## **Interviews**

We conducted over 50 interviews with students, families, educators, policymakers, community advocates, researchers, and business owners. We sought to speak with a diverse set of individuals, in terms of their geography, cultural background, race, ethnicity, sector, and political stance.

## **Literature Review**

We reviewed an extensive collection of reports and peer-reviewed journal articles in preparing *Part 1* of this paper. To comprehensively describe the results of that literature review in this paper would have expanded greatly its scope, and detracted from its primary purpose, which is to present a vision and ideas for the future. For those interested, we have compiled a full bibliography of the sources from which we drew our conclusions, at: <http://www.educationevolving.org/content/student-centered-outcomes-bibliography>

**(Appendix continued on the following page.)**

## Frameworks Reviewed

Part of our literature review was to consult the “outcomes frameworks” that other researchers and organizations have compiled, in seeking to answer similar research questions to those posed in this paper. The following is a full set of those frameworks which we reviewed and analyzed as part of our research. We humbly acknowledge the trailblazing work the authors of these frameworks have done.

Publisher	Title of Framework or Report	Top-Level Outcome Domains
CASEL	Core SEL Competencies	Self-awareness; Self-management; Social awareness; Relationship Skills; Responsible decision-making
Center for Curriculum Redesign (CCR)	Four-Dimensional Education	Knowledge; Skills; Character; Meta-Learning, i.e. learning how to learn
ConnectEd	College and Career Readiness: What Do We Mean?	Knowledge; Skills; Productive dispositions and behaviors; Educational, career, and civic engagement
EPIC (David Conley)	College and Career Readiness Framework	Cognitive strategies; Content knowledge; Learning skills and techniques; Transition skills and knowledge
Hewlett Foundation	Deeper Learning Framework	Mastering rigorous academic content; Learning how to think critically and solve problems; Working collaboratively; Communicating effectively; Directing one’s own learning; and Developing an academic mindset
Innovation Lab Network	Knowledge, Skills, and Dispositions	Knowledge (i.e. content, transfer); Skills (including higher order thinking, planning, etc.); Dispositions (including social-emotional skills and behaviors)
KIPP	KIPP Character Strengths	Zest; Grit; Optimism; Self-control; Gratitude; Social intelligence; Curiosity
Dr. Martin Brokenleg	Four Principles Embodied in the Native American Circle of Courage	Belonging; Mastery; Independence; Generosity
Next Generation Learning Challenges	MyWays	Habits of success; Creative know how; Content knowledge; Wayfinding abilities
National Academies	Supporting Students’ College Success	Behaviors related to conscientiousness; Sense of belonging; Academic self-efficacy; Growth mindset; Utility goals and values; Intrinsic goals and interest; Prosocial goals and values; Positive future self
National Research Council	Education for Life and Work	Cognitive skills; Interpersonal competencies; Intrapersonal competencies
Partnership for 21st Century Skills	Framework for 21st Century Learning	The “4 Cs” (critical thinking, communication, collaboration, creativity); Life and career skills; Information, media, and technology skills; Key subjects and 21st century themes
RTI International	Noncognitive Skills in the Classroom	Motivation; Effort; Self-regulated learning; Self-efficacy; Academic self-concept; Antisocial and prosocial behavior; Coping and resilience
Summit Public Schools	Science of Summit	Cognitive skills; Content knowledge; Habits of success; Sense of purpose
XQ	XQ Learner Goals	Masters of fundamental literacies; Holders of foundational knowledge; Original thinkers; Generous collaborators; Learners for life

# End Notes

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