Idaho Mastery Education Network Implementation Evaluation

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education northwest

About Education Northwest

Founded as a nonprofit corporation in 1966, Education Northwest builds capacity in schools, families, and communities through applied research and development.

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Contents

Contact 2

Authors 2

Introduction 1

Background 1

Methodology 2

Chapter 1. State Implementation of Mastery Education 5

How does Idaho define mastery education? 5

How has mastery education been implemented across Idaho? 6

How did ISDE support the implementation of mastery education? 10

How did ISDE use state funds to support the implementation of mastery education? 12

Chapter 2. Incubator Implementation of Mastery Education 17

Incubators use assessment to inform learning by measuring competencies with a variety of tools 17

Incubators collaboratively develop personalized, individualized, and differentiated instruction, and they support students with adult mentors 19

Incubators strive to develop academic, social emotional, and workplace skills using multifaceted curricular experiences 24

Mastery education students display ownership of and accountability for their learning 28

Incubators measure success by student engagement, graduation rates, and test scores 29

Incubators value stakeholder communication, school culture, and professional development 30

Chapter 3. Lessons Learned 32

Bright spots 32

Opportunities for future growth 33

Appendix A: Mastery Education Authorizing Statute 36

Appendix B: Sources 38

Appendix C: Other Materials 41

Figures

Figure 1. Incubator enrollment, 2015–16 8
Figure 2. Location of incubators 9
Figure 3. Idaho and incubator student demographics, 2015–16 10
Figure 4. Incubator spending by category, 2016–17 and 2017–18 14
Figure 5. Assessment themes reported in incubator team presentations 17
Figure 6. Instruction themes reported in incubator team presentations 19
Figure 7. Curriculum themes reported in incubator team presentations 24
Figure 8. Outcome measurement themes reported in incubator team presentations 29
Figure 9. Other important themes reported in incubator team presentations 30
Figure 10. "Bright spot" themes reported in incubator team presentations 32
Figure 11. Future growth themes reported in incubator team presentations 33

Tables

Table 1. Evaluation questions and data sources 2
Table 2. Descriptors and color scheme of the frequency with which incubators reported common themes 3
Table 3. Incubator districts and schools 7
Table 4. ISDE mastery education pilot expenditures 12
Table 5. Incubator spending by category, 2016–17 and 2017–18 15

Executive Summary

The Idaho State Department of Education (ISDE) engaged Education Northwest to evaluate the implementation of a mastery education model in Idaho between the 2015–16 and 2017–18 school years. Mastery education is an instructional system in which students advance to deeper levels of learning by demonstrating mastery of concepts or skills rather than through time-based progression.

Using a mixed-methods analysis of public documents available online or supplied by ISDE, Education Northwest examined the features of mastery education, as implemented in Idaho, and how ISDE catalyzed and supported the initiative since receiving legislative authority and appropriations to do so in 2015. This report describes the evaluation's methods, sources, and findings.

Highlights include:

- Idaho is using a network-based implementation model in which 19 "incubators" comprising the statewide Idaho Mastery Education Network (IMEN) leverage and amplify support from ISDE and peers to design and explore mastery education approaches in public and charter schools.
- ISDE spent $3.2 million in state funds to support mastery education between 2015 and 2018. Overall, 75 percent of funds were provided to incubators for their direct use (e.g., paying salaries of teachers and staff members and purchasing services, equipment, and supplies).
- ISDE employed a collaborative approach to conceptualize and build support for IMEN, facilitate its launch, and provide ongoing support to incubators.
- Incubator sites are implementing the mastery education model as envisioned by the state:
    - Incubators use assessment to inform learning by measuring competencies with a variety of tools.
    - Incubators collaboratively develop personalized, individualized, and differentiated instruction, and support students with educators .
    - Incubators strive to develop academic, social and emotional, and workplace skills using multifaceted curricular experiences.
    - Mastery education students display ownership of and accountability for their learning.
    - Incubators measure success by student engagement, graduation rates, and test scores.

    - Incubators value stakeholder communication, school culture, and professional development.
- Incubator teams highlighted many of these findings—such as increased student engagment and ownership of learning, as well as improved school culture—as successes.
- Incubator teams identified opportunities for future growth, including building understanding of the new model and redesigning curricula, assessments, and schedules.

ISDE and legislators will want to consider these and other lessons learned as they explore continuing and expanding the use of the mastery education model. Thus far, its implementation has created a solid framework for continued study and experimentation.

Introduction

Background

Mastery education (also known as competency-based or proficiency-based education) is a system of instruction in which students advance to deeper levels of learning when they demonstrate mastery of concepts or skills, regardless of when and where they learn them and how long it takes. Mastery education contrasts with the traditional, time-based education system in which students advance primarily based on their age or the time they spend in a classroom. Mastery education gives students the chance to use meaningful content in ways that encourage deeper levels of learning. It also helps both students and educators eliminate false assumptions about learning associated with points, percentages, and grades.

In the United States, Idaho has been a leader in advancing mastery education. In 2012, mastery education was a key recommendation of the Idaho Task Force for Improving Education. This laid the groundwork for the passage of Idaho House Bill 110 by the Idaho Legislature during the 2015 session. The legislation directed the Idaho State Department of Education (ISDE) to move Idaho away from the current time-based system and toward a mastery-based system to allow for a more personalized and differentiated learning experience and to prepare Idaho students for careers, college, and life.

ISDE was allocated $3.2 million in state funds over three years (2015 to 2018) to pilot a mastery education system. In 2015–16, after a year of planning and laying the groundwork with educators and the public, ISDE launched the Idaho Mastery Education Network (IMEN) and enrolled its first cohort of 19 "incubators"—schools and districts that applied to be mastery education pilot sites.

In late 2018, ISDE commissioned Education Northwest to conduct an evaluation to describe implementation of mastery education thus far. The purpose of the evaluation is to assist ISDE and the state Legislature in assessing the value of the model as they consider continuing—and potentially expanding—mastery education in Idaho.

Methodology

In conducting this implementation evaluation, Education Northwest sought to answer the following questions:

- What is mastery education in Idaho, and how has it been implemented across the state thus far?
- How has the state used its funds to support mastery education?
- How are the incubator districts and schools implementing mastery education?

We used a mixed-methods approach that involved quantitative and qualitative data sources that were publicly available online or supplied by ISDE. These sources are listed in appendix B and summarized in table 1.

Table 1. Evaluation questions and data sources

Evaluation questions	Data sources
What is mastery education in Idaho, and how has it been implemented across the state thus far?	• House Bill 110 • IMEN pages on ISDE website • IMEN Cohort 1 professional development assets • Mastery Education Committee meeting notes (2) • U.S. Department of Education's National Center for Education Statistics
How has the state used its funds to support mastery education?	• Grant Reimbursement Application (GRA) data for incubator expenditures
How are the incubator districts and schools implementing mastery education?	• IMEN best practices presentation • IMEN blog posts (10) • Incubator team presentations (19) • National Conference of State Legislatures blog post • Parent, student, and teacher focus group summary (Mastery Education, 2018)

To answer the first two evaluation questions, we used materials, tools, publications, and notes from convenings prepared by ISDE or contracted technical assistance providers. We analyzed these data to describe the work ISDE staff members did to support the development of the incubators and IMEN. We used federal student data to provide background demographic information on students enrolled in incubator schools. Finally, we analyzed financial data from the state's Grant Reimbursement Application (GRA) system provided by ISDE to assess how the agency spent funds appropriated by the Legislature to support the work.

To answer the last evaluation question, we used the incubator team presentations as our primary data source. Every incubator team delivered a presentation that included reflections on implementing mastery education in Idaho, representing a comprehensive and complete dataset. Links in presentations were also reviewed and coded. In analyzing these data, we aggregated themes from presentations to the incubator level. For instance, an incubator might have focused heavily on one or two themes in its presentation, but these multiple instances of a theme in one team's presentation are counted as one incubator addressing a theme. We counted how many teams addressed a theme and used these counts in our reporting. We aggregated incubators and color-coded themes as a reminder of the frequency with which schools presented information on a common theme (table 2). In addition, if a team presentation included links to external sites or sources, we followed those links and incorporated the corresponding information or resources into the analysis.

Table 2. Descriptors and color scheme of the frequency with which incubators reported common themes

Descriptor	Number of incubators reporting a theme
Most	15 to 19
Many	11 to 14
Several	7 to 10
Some	4 to 6

Because the other data sources listed for the third evaluation question (the IMEN best practices presentation; blog posts; and the parent, student, and teacher focus group summary) did not include data from all incubators, did not identify incubators, and/or were prepared by outside entities, we used them as supplemental data. We combined data from the IMEN best practices presentation and the blog posts, and we refer to them as additional incubator data. The data from the parent, student, and teacher focus group summary were analyzed separately and are referred to when we discuss parents, students, and teachers.

We reviewed a handful of additional publications for background and context, although they were not included in the formal analysis. These resources are listed in appendix C.

The following chapters detail Education Northwest's analysis of the above sources:

- Chapter 1 provides analysis of the state's implementation of mastery education in Idaho and answers evaluation questions 1 and 2.
- Chapter 2 analyzes the incubators' implementation of mastery education and answers evaluation question 3.
- Chapter 3 describes bright spots, opportunities for growth, and lessons learned by ISDE and the incubators. It also answers evaluation question 3.

Chapter 1. State Implementation of Mastery Education

This chapter provides Education Northwest's analysis of the statewide implementation of mastery education in Idaho. It begins by describing how ISDE defines and conceptualizes mastery education. It then describes the IMEN incubator sites. Finally, it describes how ISDE fulfilled its responsibilities for catalyzing and supporting the implementation of mastery education assigned to it by the Legislature and how it used state funds to do so.

How does Idaho define mastery education?

House Bill 110 provided the following definition of mastery education: "[An] education system where student progress is based upon a student's demonstration of mastery of competencies and content, not seat time or the age or grade level of the student."

Using that definition as a starting point, through needs sensing, as well as work with local and national partners and experts, ISDE created a conceptual framework to guide implementation. As described in IMEN materials (e.g., the IMEN professional development assets), mastery education consists of five key tenets:

1. Meaningful **assessment** that is a positive learning experience for students
2. Timely and differentiated **support** based on individual learning needs
3. Focus on **competencies** that include explicit, measurable, and transferable learning objectives that empower students
4. Learning **outcomes** that demonstrate competency in applying and creating knowledge and in developing important skills and dispositions
5. **Advancement** upon mastery

IMEN materials further describe mastery education as built on administrator and teacher flexibility (in both environment and student grouping) to better serve students and innovate. It also provides transparency to students and families regarding expectations that include high academic, college and career, and lifelong learning competencies. Mastery education requires schools to change their culture, learning progressions and pace, instruction, and assessment systems.

Further, mastery education is student-centered and intended to increase students' desire to learn. Along those lines, instruction is purposeful and driven by student choice and voice. It actively engages students in inquiry-driven learning using the learning cycle. Students make meaning, investigate, and synthesize content, and they create and design products to communicate their learning.

Students also receive explicit, differentiated, timely, and personalized instruction based on learning plans targeted to their current stage of learning. They work at their own pace and use mini-lessons, expanded conversations, and a blend of traditional and computer-based lessons.

Students are assessed when they are ready via performance tasks, portfolios, and/or exhibitions. Assessment provides information that allows teachers to deliver ongoing support through student conferencing. When students achieve mastery, they receive credit and move on.

How has mastery education been implemented across Idaho?

ISDE established IMEN using a network-based module. IMEN is composed of a cohort of 19 incubator sites, which comprise 32 schools—three of which are charters (table 3). Five incubators serve all students enrolled, three serve multiple schools but not all schools, and 11 serve only one school.

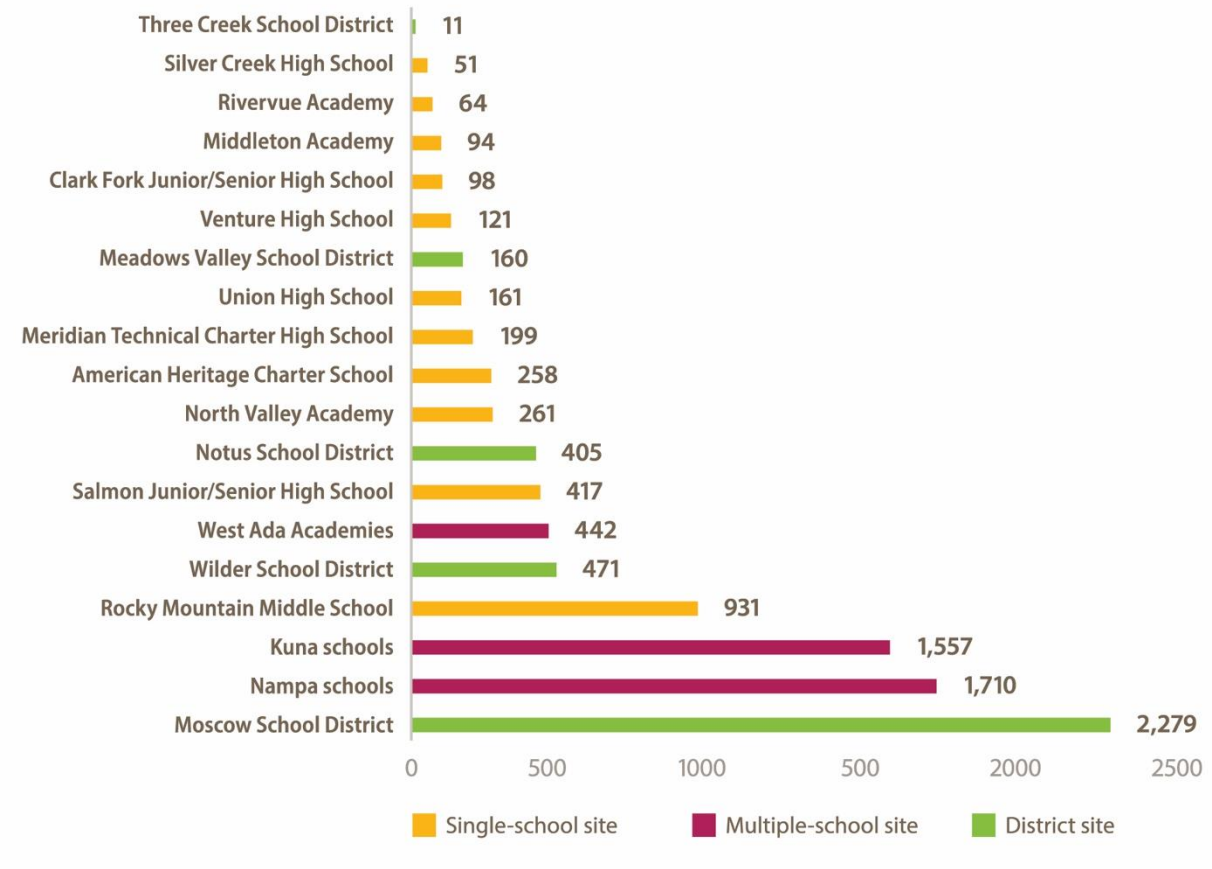
Table 3. Incubator districts and schools

Districts	Schools
American Heritage Charter School	American Heritage Charter School
Blaine County	Silver Creek High School
Bonneville	Rocky Mountain Middle School
Coeur d'Alene	Venture High School
Kuna	Ross Elementary School, Fremont Middle School, Initial Point High School, Kuna High School
Lake Pend Oreille	Clark Fork Junior/Senior High School
Meadows Valley	Meadows Valley School
Meridian Charter School	Meridian Technical Charter High School
Middleton	Middleton Academy
Moscow	Lena Whitmore Elementary School, McDonald Elementary School, Russell Elementary School, West Park Elementary School, Moscow Middle School, Moscow High School, Paradise Creek Regional High School
Nampa	Greenhurst Elementary School and Columbia High School
Nampa	Union High School
North Valley Charter School	North Valley Academy
Notus	Notus Elementary School and Notus Junior/Senior High School
Salmon	Salmon Junior/Senior High School
Three Creek	Three Creek Elementary/Junior High School
Vallivue	Rivervue Academy
West Ada	West Ada Academies (Eagle Academy High School, Meridian Academy High School, and Central Academy High School)
Wilder	Wilder Elementary School, Wilder Middle School, Wilder High School

Source: http://www.sde.idaho.gov/mastery-ed.

In 2015–16, the incubators enrolled 9,690 students (figure 1). About 25 percent of incubators enrolled fewer than 100 students; about 30 percent enrolled 100 to 299 students; about 25 percent enrolled 300 to 1,000 students; and 16 percent enrolled more than 1,000 students.

Figure 1. Incubator enrollment, 2015–16



Source: U.S. Department of Education, National Center for Education Statistics (2015-2016)

Incubators are located across Idaho, and they are in each of the six regions created by ISDE (figure 2).

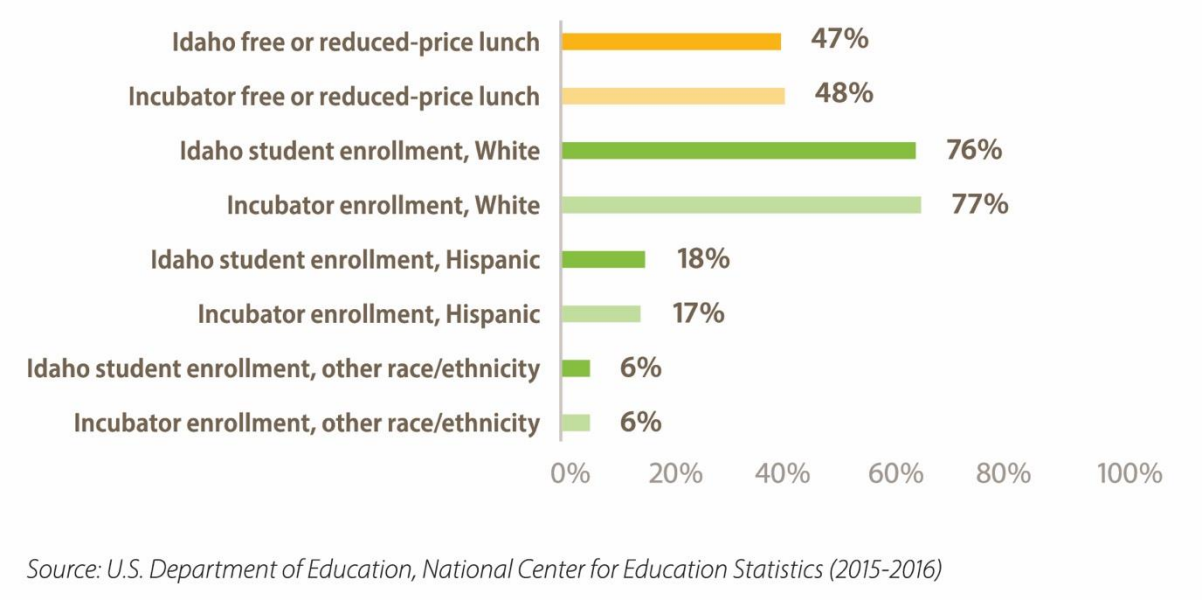
Figure 2. Location of incubators

Note: School participation in Kuna School District may have changed. Also, Atlas Alternative School is Middleton Academy.

Source: Philips & Lockett, 2017.

In 2015–16, enrollment in incubators matched the state overall in terms of eligibility for free or reduced-price lunch, as well as race and ethnicity (figure 3).

Figure 3. Idaho and incubator student demographics, 2015–16



Source: U.S. Department of Education, National Center for Education Statistics (2015-2016)

How did ISDE support the implementation of mastery education?

In the authorizing statute for mastery education (Appendix A), the Legislature charged ISDE with three tasks to move Idaho toward a mastery-based education model:

1. Conduct a statewide awareness campaign to promote understanding and interest in mastery-based education for teachers, administrators, families, students, business leaders, and policymakers.
2. Establish a committee of educators to identify roadblocks and possible solutions in implementing mastery-based education and develop recommendations for the incubator process.
3. Facilitate the planning and development of an incubator process and assessments of local education agencies to identify the initial cohort of up to 20 local education agencies to serve as incubators in fiscal year 2017.

The following sections describe how ISDE carried out these responsibilities. In doing so, ISDE collaborated with formal and informal partners at the local and national level, including:

- Boise State University (research partnership)
- Foundation for Excellence in Education (policy)
- Council of Chief State School Officers (policy)
- reDesign (a mastery education consultancy)
- Strategies 360 (a communications consultancy)

Conducting a statewide awareness campaign

ISDE worked with Strategies 360 and the incubators to design a communications campaign and associated materials. The strategy entailed holding focus groups and preparing print and electronic communications collateral, including a PowerPoint presentation that addressed various issues (e.g., legislation and department rules, key tenets, benefits and challenges of mastery education), an "explainer" video, and social media posts.

Establishing a committee of educators

ISDE established a committee of educators that met twice: in June and July 2015. At the first meeting, the committee reviewed House Bill 110; developed common definitions and language; reviewed the recommendations of the governor's task force related to mastery education and plans for mastery education programs across the state and nationwide, including application processes used in other states for funding purposes; and began working on the awareness campaign. At the second meeting, committee members continued working on communication; determining how to proceed with the incubator program by addressing logistics, timing, and funding; and identifying roadblocks and challenges, including funding based on daily attendance and seat time, graduation requirements, and accountability.

Facilitating the planning and development of an incubator process and assessments

ISDE engaged in multiple activities to initiate the incubator process. During 2016–17, ISDE staff members and partners focused on planning and design, creating a logic model, developing competency documents, reviewing applications, designing a professional development program, and collaborating with higher education institutions to develop continuing education opportunities. During 2017–18, ISDE and partners focused on strategic implementation. Activities included holding seven symposia, conducting in-person and virtual visits to incubator sites, engaging incubator team members in two book clubs, and conducting workshops that addressed various issues (including curriculum design, messaging success in student learning, supporting mastery education, creating units of study, math, and applying an equity lens to the IMEN model).

How did ISDE use state funds to support the implementation of mastery education?

ISDE was allocated $3.2 million over three years to carry out its responsibilities to support the pilot of mastery education in Idaho (table 4). The majority of funds were passed through to incubators for their use. ISDE retained funds to support planning and project management and to engage contractors to provide capacity-building support to ISDE and incubators.

Table 4. ISDE mastery education pilot expenditures

	2015–16	2016–17	2017–18	TOTAL
Legislative allocation	$400,000	$1,400,000	$1,400,000	$3,200,000
ISDE activities	$124,889	$50,000	$39,242	$214,131
Contracted services			$310,758	$310,758
Pass-through to incubators		$1,349,814	$1,050,000	$2,399,814
Total expenditures	$124,889	$1,399,814	$1,400,000	$2,924,703
Returned to Legislature	$275,111	$186		$275,297

Note: Amounts rounded to the nearest dollar.

Source: ISDE GRA data.

ISDE activities

ISDE retained $214,131 in state funds between 2015 and 2018 to support its work on behalf of IMEN. The largest expenditure—$124,889—was incurred in 2015–16 to support the labor and travel of ISDE staff members (primarily IMEN Director Kelly Brady) to build awareness and consensus for mastery education in Idaho. This work included establishing the community of educators and preparing the communications campaign. Subsequently, ISDE retained $50,000 in 2016–17 and $39,242 in 2017–18 to support its staff's efforts to provide ongoing planning, administration, and monitoring of the mastery education pilot. In spending state funds, ISDE sought opportunities to minimize costs (for example, by holding IMEN symposia at the Idaho Capitol). ISDE also sought outside expertise to support efficient project and process planning and management, and it returned funds if they could not be used productively and efficiently within the fiscal year they were appropriated.

Contracted services

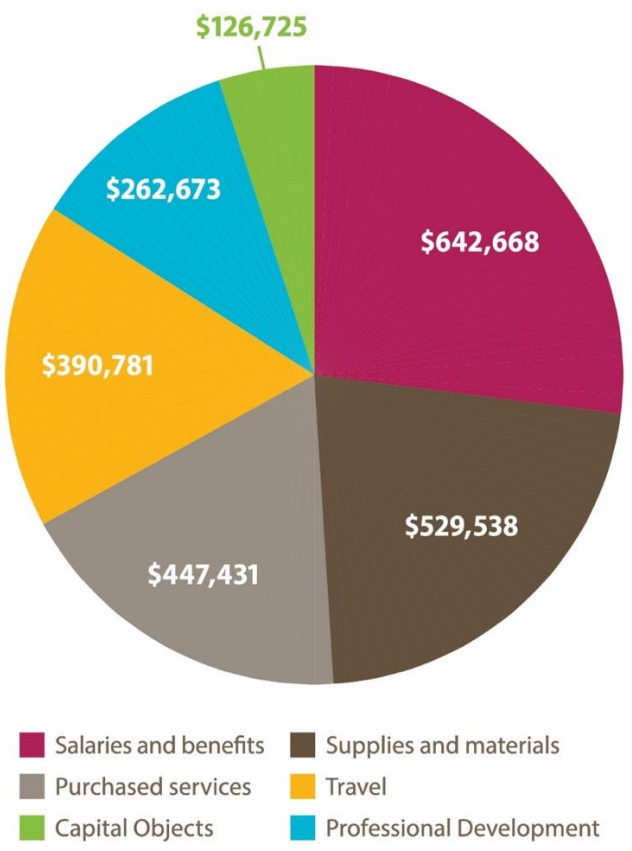
ISDE used $310,758 in state funds to retain the services of two contractors that provided capacity-building support to IMEN incubators and ISDE staff members. Boise State University received $130,000 to provide research support, assessment design, system implementation support, coaching, and focus group support. The mastery education consulting firm reDesign received $180,758 to support program design, provide general and customized technical assistance to incubator schools and districts, and support the IMEN community of practice.

Pass-through to incubators

Overall, 75 percent of funds were passed through to incubators to support their planning, design, and implementation of mastery education (figure 4 and table 5). The following is a breakdown of how incubators spent their funds:

- 27 percent on salaries and benefits
- 22 percent on supplies and materials
- 19 percent on purchased services
- 16 percent on travel
- 11 percent on professional development
- 5 percent on capital objects

Figure 4. Incubator spending by category, 2016–17 and 2017–18



Source: ISDE GRA data.

Table 5. Incubator spending by category, 2016–17 and 2017–18

Schools/Districts	Salaries & Benefits	Purchased Services	Professional Development	Supplies & Material	Travel	Capital Objects	Total
American Heritage Charter	$46,832	$10,500	$1,723	$29,070	$12,375	$0	$100,500
Clark Fork Jr/Sr High School	$48,235	$4,000	$5,267	$67,796	$61,164	$18,139	$204,600
Kuna School District	$49,010	$23,000	$17,674	$51,387	$28,929	$0	$170,000
Meadows Valley School	$25,058	$29,110	$9,558	$35,652	$11,883	$16,740	$128,000
Meridian Technical Charter	$14,090	$30,395	$0	$24,229	$2,003	$25,297	$96,014
Middleton Academy	$9,734	$9,000	$4,432	$33,793	$11,541	$0	$68,500
Moscow School District	$56,169	$17,505	$68,389	$16,425	$82,512	$0	$241,000
Nampa School District & Union High School[1]	$80,396	$36,664	$30,010	$10,562	$36,367	$0	$194,000
North Valley Academy Charter	$80,014	$14,280	$4,793	$803	$610	$0	$100,500
Notus School District	$20,852	$54,406	$0	$2,871	$24,785	$6,256	$109,170
Rivervue Middle School	$9,971	$0	$9,818	$35,566	$0	$26,145	$81,500
Rocky Mountain Middle School	$18,000	$0	$26,295	$61,544	$6,496	$0	$112,335
Salmon Jr./Sr. High School	$70,270	$20,627	$1,000	$10,138	$55,261	$15,203	$172,500

Schools/Districts	Salaries & Benefits	Purchased Services	Professional Development	Supplies & Material	Travel	Capital Objects	Total
Silver Creek High School	$9,631	$45,900	$439	$15,955	$16,439	$2,136	$90,500
Three Creek School District	$0	$23,163	$7,297	$12,915	$3,442	$1,529	$48,345
Venture High School	$0	$9,902	$45,533	$29,365	$0	$12,400	$97,200
West Ada Academies	$94,405	$69,310	$14,886	$2,636	$26,931	$2,881	$211,050
Wilder School District	$10,000	$49,668	$15,560	$88,830	$10,042	$0	$174,100
Total	$642,668	$447,431	$262,673	$529,538	$390,781	$126,725	$2,399,814

Source: ISDE GRA data.

Note: Amounts rounded to the nearest dollar.

[1] Both Nampa School District and its Union High School are IMEN incubators, but their awards and expenditures are aggregated for reporting purposes.

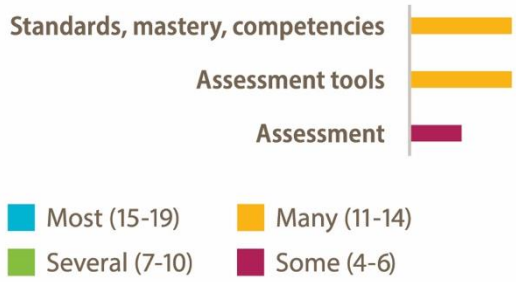
Chapter 2. Incubator Implementation of Mastery Education

This chapter draws primarily from the incubator team presentations to address the last evaluation question: How are the incubator districts and schools implementing mastery education? Additional data from the IMEN best practices presentation; blog posts; and the parent, student, and teacher focus group summary are included.

Incubators use assessment to inform learning by measuring competencies with a variety of tools

Data from the incubator team presentations showed that teams assessed **standards**, **mastery**, or **competencies** (figure 5). They did so using various **assessment tools**, including exhibitions, portfolios, rubrics, project-based assessments, and individual assessments. One team said **assessment** provides teachers and students with information rather than grades, and some teams described assessment as giving students multiple opportunities to learn through the revision process. Information gleaned from assessments was used to inform continued learning through remediation, extension, or new content.

Figure 5. Assessment themes reported in incubator team presentations



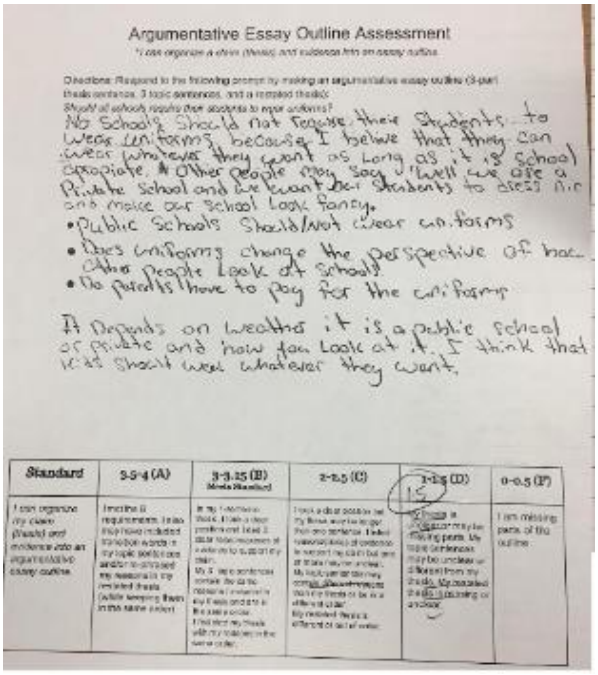
> *Students are credited for demonstration of competencies that originate from Common Core Standards. (Incubator team presentation)*

> *Our students are ready to give their first round of exhibitions to prove their learning toward earning their semester credits. During exhibitions, students will demonstrate their learning by reviewing learning plans, semester progress, projects, internship experiences, goals after high school, autobiography, work from learning opportunities, and future goals. (Incubator team presentation)*

> *Mastery of learning is ensured through a "revision process" and is demonstrated through real-life application of skills and attainment of competencies, which more accurately reflect student learning than traditional grades. (Incubator team presentation)*

Assessment is used to inform staff, students, and parents about progress toward clearly identified learning targets on their path to proficiency. This information supports a personalized approach for instruction and learning for each individual student. (Incubator team presentation)

Additional incubator data also addressed assessment and its measurement of standards and competencies, both at the beginning of the year to understand where students were in regard to their strengths and needs and during the year to determine students' "pace and progress" and when they needed additional support or could move forward. The data demonstrated the importance of how meaningful, formative feedback using the revision process helps students learn. These sources confirmed that schools were using various tools, including rubrics and point-tracking systems, to measure and document growth.



Source: IMEN best practices presentation.

The key to all of this is to provide more feedback to students. Learning happens when students get the right feedback at the right time. Things click. They move forward. Our theory of action is that with clear, high expectations of grade-level mastery, instructionally looking for and addressing gaps, much tighter feedback loops and ensuring students revise until they are successful, students will be learning more. We are already seeing in benchmark assessment that students are writing better, are computationally better, and are applying skills better. (Blog post)

I like the revision part—if I can see their thinking (for instance, in math), we can look at their work together. With some projects, it is an "aha" for me; I can see what skills are missing. The kids are not the only ones revising a lot. The goal is to take what we need to teach them and make it a part of their world. (IMEN best practices presentation)

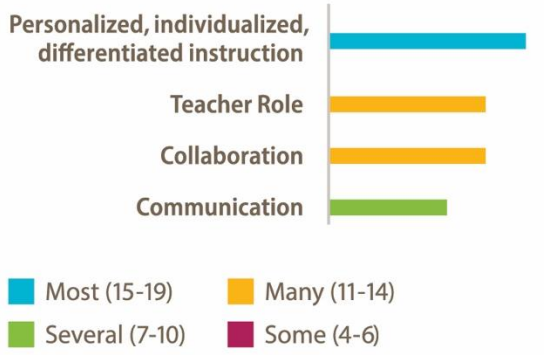
Parents, students, and teachers found many aspects of the assessment system to be beneficial, including having students demonstrate mastery, allowing students and teachers to gain information from assessments to help guide learning (including engaging in revisions), having teachers use common tools, being transparent about expected progression and actual progress, and allowing for collaboration between teachers and between students.

Constant and immediate data to guide learning, [allowing] students [to] know where they are, celebrate successes, next steps. [It provides] transparency to learning needs and [helps] students keep track of progress. (Focus group participant)

Incubators collaboratively develop personalized, individualized, and differentiated instruction, and they support students with adult mentors

Primary data from **incubator team presentations** described how students engaged in **personalized**, **individualized**, and **differentiated instruction** (figure 6). Teachers and students develop individualized plans that meet students where they are, providing them with learning opportunities at their instructional level. Students work with peers and teachers in small groups or one-on-one. Learning is often of students' choosing and flexibly paced. Students decide when to work on assignments, how much time to spend on content in a given period, whom they work with, and where they want to engage in their work.

Figure 6. Instruction themes reported in incubator team presentations



I love my team, and I wish I could be on it all through high school. I love how we get to choose what to do with our time. I also like that we get to work with peers with any focus area you want. (Incubator team presentation)

In addition, teams described how learning is differentiated. When students display mastery, they move forward. When students need additional support, they get it.

> *Last year, I fell behind in math due to a dual-enrollment history class. Instead of cramming to get a grade I didn't want, I visited with my mentor to develop a plan. As a result, I was able to complete the math coursework the following year, without penalty. It works both ways—we get to move forward or get help when we need it. (Incubator team presentation)*

> *If students don't master the content to earn credit by the end of the school year or semester, they return at the beginning of the next semester or year and pick up right where they left off. They won't be forced to start over from scratch; if a student mastered 80 percent of a class as the school year ends, the student would begin the next year working on the remaining 20 percent. (Incubator team presentation)*

Many teams also described how teachers and students work in **collaboration**. Specifically, collaboration happens between teachers and students; between teachers and teachers; between students and students; and among teachers, students, and families. Planning is an important part of collaboration, especially when learning is individualized for a student based on their needs. Students and teachers meet frequently to assess progress (this often occurs in an advisory period) and plan.

> *Students take a proactive role in designing their current learning and planning for future learning. Learning is personalized, co-planned with students, parents, and teachers, who will become mentors. (Incubator team presentation)*

> *Mentors work with several students. Mentors meet at least weekly with students to go over their work and see how they are progressing … Teachers develop close relationships with students, who understand someone is supporting them. The relationship with the mentor is probably what makes our system work. Students know their teachers are there for them. (Incubator team presentation)*

One team said its students "unite with their peers and teachers to create a collaborative learning environment." In this same school, "instead of desks, students use collaborative tables, which are better for group projects and presentations."

Teachers also collaborate to help students.

> *Student progress is shared with all the staff, from the summer school teachers to the after-school program. Everyone knows what each student lacks. Then we can all really target, and we keep going until he's got it. (Incubator team presentation)*

Several teams also emphasized the importance of **communication**, which occurred between schools and families, schools and students, and students and schools. Overall, teams expressed the desire to involve families, create transparency, and build understanding.

> *Standards-based grading supports clear communication to students and parents. (Incubator team presentation)*

> *There's also an academic coach who talks with students and their parents regularly about their progress. (Incubator team presentation)*

Many teams described how the **teacher role** is different in schools that use mastery education. In addition to serving as advisors, mentors, and coaches, they motivate and guide students, as well as monitor their progress.

> *Teachers assume the role of overseers at the school, spending the majority of their time on their feet, coaching and mentoring instead of lecturing and keeping tabs on students, making sure they stay on track. (Incubator team presentation)*

> *[The teacher] moves constantly among her 25 students, pausing to give advice and encouragement. (Incubator team presentation)*

> *Teachers serve as a guide and source to help connect students to other resources and mentors. (Incubator team presentation)*

Additional incubator data confirmed that students' work was individualized to meet their academic and social needs. Students had "personal pathways," and they received extra support when they needed it. Further, when students were ready, they were able to move forward (for example, by enrolling in dual-credit courses). Flexible pacing was a key theme, as were descriptions of what mastery education classrooms looked like when students were engaged in personalized assignments.

> *One of the challenges of visiting this type of personalized classroom—where students are all engaged, are likely to have a device in their hand or nearby—is being able to tell what they are actually doing. I mentioned this to [the teacher], and she started calling out a group of five students who were sitting in a circle of comfy armchairs. One was reviewing content for an upcoming project, two were working on producing a manual about how to get to Mars, one was reviewing content because they hadn't yet been successful in demonstrating mastery, and one was "trying to find something to work on." [The teacher] asked if he needed help, and he said he was fine and would figure it out. (Blog post)*

> *We learn in a more memorable, fun way. We are able to build on our knowledge. If you already know something, you can show this on the diagnostic test. (IMEN best practices presentation)*

> *Here, there is open communication. I appreciate how my student works with their teacher/advisor to create a plan for learning. There's that dance between "I want him to be challenged, but I also appreciate that my child is driving it a bit too." It is a partnership, not just one-sided. (IMEN best practices presentation)*

Collaboration between students and teachers was common and included reviewing work, providing one-on-one support, and working in student-teacher dyads. Teachers worked together during team time to develop lessons and common understanding, and they engaged with families when students needed additional support. Relationships were key to understanding needs and being able to provide the appropriate supports. Teachers—referred to as mastery-based education coaches, math instructional coaches, instructional coaches, teacher leaders, generalists, specialists, and mentors—facilitated learning.

> *Teachers need the ability to know students academically, socially, and emotionally. They need to know the whole child. There is a huge difference when teachers and students bond around high expectations. Strong relationships are forged, and the community becomes a family. (Blog post)*

> *It's bad that, for so long, we have had the stereotype of having upperclass- and lowerclassmen. Instead, what if I thought of someone as a human being that has a little more knowledge or less knowledge than me? Senior/freshman shouldn't matter. (IMEN best practices presentation)*

Parents, teachers, and students appreciated that instruction was individualized and focused on students' interests. Students got to choose what they engaged in, where they engaged in it, and with whom. Instruction was flexibly paced to allow students to get more support when they needed it. In addition, teachers were able to provide support and build relationships.

> *[Our instruction includes] personalized learning opportunities and support. [It addresses] student interests and passions and [includes] real-world activities. (Focus group participant)*

> *[There are a] variety of roles for teacher[s]: advisor, mentor, friend, support, and professional. (Focus group participant)*

Stakeholders found it beneficial for teachers to work together, for students to work together, and for teachers and students to work together.

> *[There is] teacher collaboration and shared support for students. [We are] team teaching, and [it is] cross-curricular. (Focus group participant)*

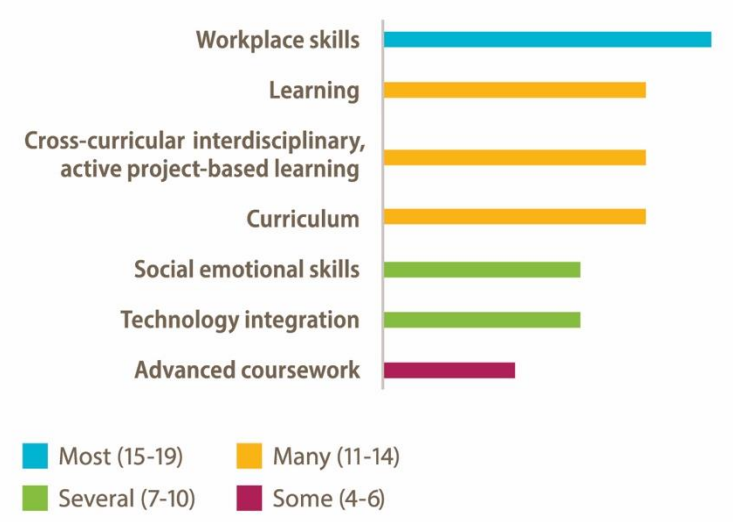
Communication was also key in regard to transparency, building trust, and sharing information and resources.

> *[There is] transparency for learning. [We know] what is needed, how to get help, where to find resources, how the learner is doing. (Focus group participant)*

Incubators strive to develop academic, social emotional, and workplace skills using multifaceted curricular experiences

Primary data from **incubator team presentations** indicate teams provided instruction in multiple areas and defined **learning** differently, even though they still addressed English language arts, math, science, social studies/history, and common electives (figure 7). Many teams said they wanted students to learn not just content but application of the content in multiple situations. In addition, many teams said they wanted to provide students with an education beyond book learning that prepares them to be successful, regardless of whether they go on to postsecondary education or the workplace.

Figure 7. Curriculum themes reported in incubator team presentations



> *Traditional education is often earmarked by busywork and activities that will never be replicated in the workplace. Instead, our work is focused on the specific competencies and skills that a high school-educated person should have. Students are only graded on the mastery of those skills, not on the activities they participate in to learn them. (Incubator team presentation)*

> *Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions. (Incubator team presentation)*

Further, because the curriculum is flexibly paced and individualized, students in some incubators had the opportunity to complete **advanced coursework** and complete dual-credit courses. In one middle school, "some students went on to earn high school credit for core classes." In another school, a student was "enrolled in two advanced-opportunity courses" through a
local university.

In addition to teaching academic skills, several teams said they hope to build students' **social emotional skills**. These included regular attendance, grit, determination, restraining impulses, soft skills, excitement about learning, time management, working with others, motivation, behavior, work study habits, active engagement, independence, personal responsibility, creativity, problem-solving, critical thinking, and character.

> *Students are taught the "16 Habits of Mind," a set of behaviors that encourage persistence and critical thinking. Students earn badges by exhibiting behaviors that match their sills. (Incubator team presentation)*

Finally, teaching **workplace skills** was another key component of most teams. Many described how mastery education gives students real-world experiences—often via field trips, job shadowing, and internships. Mastery education programs are committed to providing students with opportunities to explore various postsecondary options. Students may also obtain certifications and jobs through these types of experiences. Some teams described how this focus required them to develop partnerships with organizations in their community.

> *He did biology and conservation work at the conservancy … His mentor had him measuring water temperatures, rates of discharge, and collecting data relevant to the sustainability of the preserve. During his junior year, he built a guitar with the help from a mentor, the owner of a local guitar shop. During his senior year, he did computer software and hardware work at several nonprofits. (Incubator team presentation)*

This type of learning is often multifaceted. It involves **cross-curricular or interdisciplinary learning** that is **active** and **project-based**.

Project-based learning (PBL) is an inquiry-based process for teaching and learning. In PBL, students focus on a complex question or problem, then answer the question or solve the problem through a collaborative process of investigation over an extended period of time. Projects often are used to investigate authentic issues and topics found outside of school. (Incubator team presentation)

Exhibit 2. Example of social emotional skills addressed by an incubator

Source: IMEN best practices presentation.

A student used the district's virtual reality lab to create a multimedia project about every element in the periodic table. Another student created a dog collar that could sense heat and help keep pets safe in an area where the average high temperature tops 90 degrees for five straight months. (Incubator team presentation)

Several teams described how their schools **integrated technology**. Classrooms are often blended, with instruction coming from both face-to-face interactions with teachers and computer-based learning programs. All students typically have access to technology to engage in and share their daily work. Part of the reliance on technology allows students to be independent in their learning, but it also ensures students have technology skills necessary for 21st-century careers. According to one team, "Since the blended model incorporates both the use of technology and hands-on learning, it is more relevant to the skills our students will need to be successful [when] they leave our high schools."

In addition, many schools shared information about their **curriculum**. A few schools shared how they used outside resources, such as Big Picture Learning or Summit Learning, to provide access to curricular content. Others were proud of using character education, citizen training, and/or employability training, as well as incorporating restorative practices or school-to-work connections into the curriculum.

Additional incubator data reiterated the importance of mastery education's application to the real world and how curricula shifted to build students' skills and knowledge using problem-

based, interdisciplinary projects. These projects allowed students to gain academic skills, as well as social emotional, workplace, and technological skills necessary for future success.

> *I was badly behind. No teacher would ever stop to help me. I even had a teacher scream at me once when I asked a question. It's different at [this school]. They listen. They walk me through things. They make sure I understand. I've gained confidence, and I'm more motivated. Even though I am only a sophomore, I have enough credits to graduate. (Blog post)*

> *… students learn in [a] problem-based learning environment with flexible pacing and combined grade levels that focuses on integrating all four core subjects (math, English language arts, history, and science) into one project. (Blog post)*

> *Science is the class I learn most in because we spend time doing cool things. We did an experiment, and we were learning about waves. We learn about science because we go out to the community garden and learn there. I learn most in science because all the ways that we have to make stuff. (IMEN best practices presentation)*

Parents, students, and teachers described many benefits of mastery education, including that it is hands-on and has real-world connections. They also appreciated that students learned academics, as well as social emotional skills (such as growth mindset) and work skills.

> *Students [are] incorporating life skills: teamwork, communication, organization, etc. (Focus group participant)*

Exhibit 3. Example of workplace skills addressed by an incubator

Source: IMEN best practices presentation.

Mastery education students display ownership of and accountability for their learning

Primary data from most **incubator team presentations** showed how students take **ownership** of their learning, are **accountable** for their work, and have some level of **autonomy** to engage in the learning process. This may be a result of the individualized learning and collaborative planning process.

> *It's me sitting in class and not having a teacher tell me what to do or redirect my behavior at all. If I just sit here and put my head down, it's my choice. But, really, it's my job to push myself to get the competencies. (Incubator team presentation)*

> *Mastery is forcing an essential shift in education. Students are being pushed out of the role of passive learners—listening to a teacher, taking homework assignments from a teacher—to forging their own way through material. (Incubator team presentation*

> *We teach the kids to take ownership of their learning. That's one of the reasons a mastery-based system works; it encourages them to stay on top of their own stuff. (Incubator team presentation)*

Additional incubator data, including parents, students and teachers confirmed that students had choice and voice in their daily activities, were self-directed, and accountable for their own learning.

> *Students schedule themselves to meet with teachers as they need help. There are pacing guides for the students to help them gauge if they are putting in enough effort. (Blog post)*

> *Increased student ownership for their learning through supportive planning sessions with advisors/mentors. (Focus group participant)*

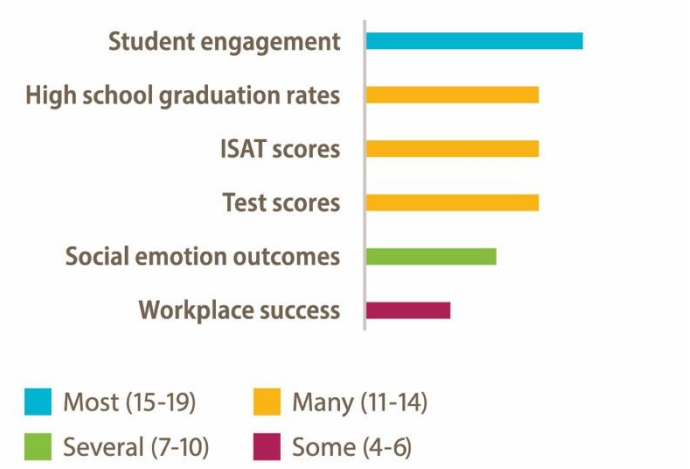
Exhibit 4. Example of resources to help students maintain accountability

Source: IMEN best practices presentation.

Incubators measure success by student engagement, graduation rates, and test scores

Primary data from most **incubator team presentations** showed that teams often used common—and various—measures to define success (figure 8). The most common one was **student engagement**. Many teams also used **high school graduation rates**, **Idaho Standards Achievement Test (ISAT) scores**, and **other test scores** (such as MAP, SAT/PSAT, and ACT).

Figure 8. Outcome measurement themes reported in incubator team presentations



Several teams measured success in terms of **social emotional outcomes**. In the incubator teams, these included accountability and ownership, attendance, behavior, civic responsibility, motivation, social emotional growth, and social learning.

Some teams also measured **workplace success**. These teams were looking at students' attainment of 21st-century skills (such as critical thinking, collaboration, and communication), employer satisfaction (from student internships), real-world learning opportunities, technology integration, and participation in project-based learning.

A few teams considered outcomes from team-developed assessments (e.g., common assessments) or other, less formal assessments that measured mastery, such as proficiency scales and/or performance-level descriptors. A few also used credit attainment, dual enrollment, and/or postsecondary placements (e.g., continued education, work, or military).

> *We are measuring student growth toward mastery based on our identified K–12 competencies with proficiency scales. We want our students to be successful in life, as well as in school. Some evidence of success would be postsecondary placements. (Incubator team presentation)*

Incubators value stakeholder communication, school culture, and professional development

Primary data from several **incubator team presentations** addressed other important themes, such as **stakeholder communication** (figure 9). Teams communicated with stakeholders in various ways, and all incubators included links to their school website in their presentations. Although some of the links were broken, many teams posted meaningful information to their website, including board meeting minutes regarding the move to mastery education, manuals, policy documents, competencies, assessments, student expectations, grading procedures, and personalized learning presentations. Many schools also included news articles about their mastery education work. In addition, some teams communicated via blogs.

Figure 9. Other important themes reported in incubator team presentations

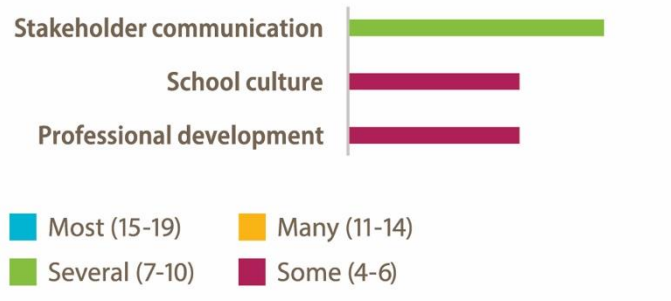
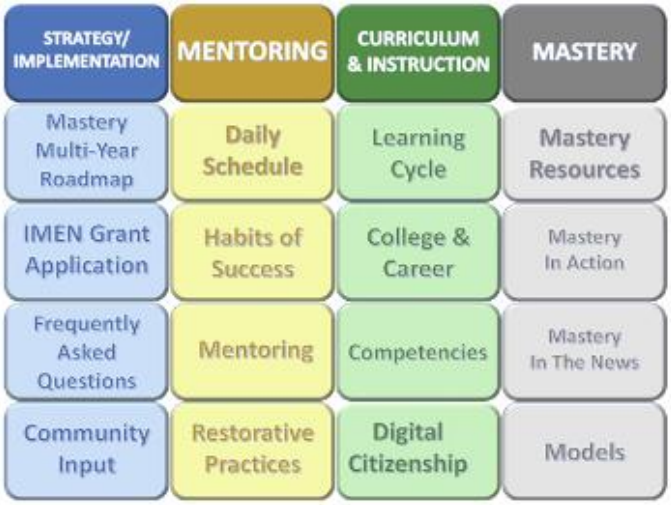


Exhibit 5. Example of stakeholder communication regarding mastery education



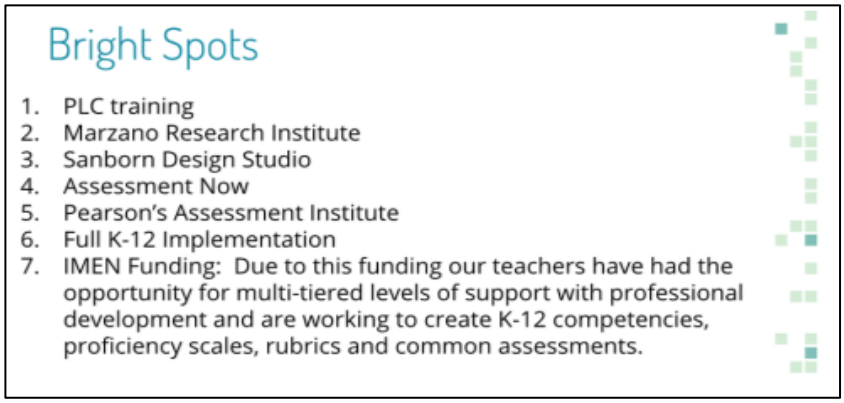
Source: Incubator school website.

Some teams described their **school culture** as positive, supportive, and/or fostering a sense of family. For a few of these teams, contributing to the development of the school and broader community was a requirement. In one school, expectations for students included "enhance community, school, and self," and other schools actively engaged students in community service projects. **Additional incubator data** confirmed the importance of school culture and how teachers need to embrace change for it to have an impact on learning.

> *We led our transformation with culture and climate. And the payoff has been learning. (Incubator team presentation)*

Finally, some teams described their engagement in or need for **professional development**. They shared how IMEN funding allowed them to attend conferences and learn about professional learning communities, assessment, integrating technology, and curriculum development. One incubator shared various professional development opportunities as a "bright spot."

Exhibit 6. Professional development received by an incubator



Source: Incubator team presentation.

Chapter 3. Lessons Learned

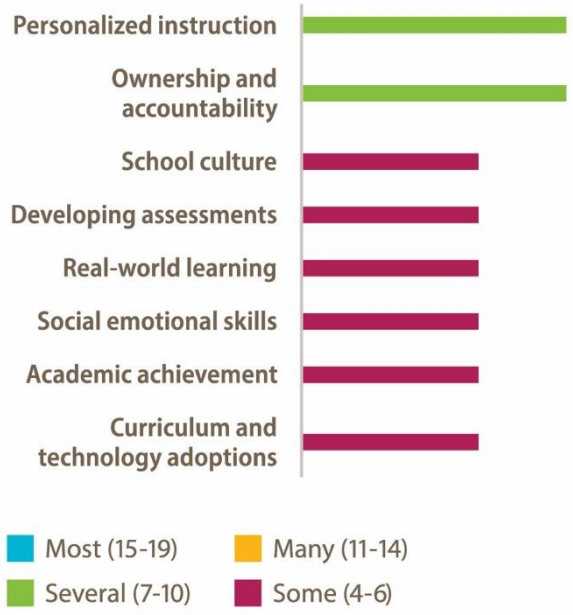
This chapter addresses the last evaluation question: How are the incubator districts and schools implementing mastery education? Specifically, it addresses "bright spots" and opportunities for future growth. It primarily draws from the incubator team presentations. Additional data from the IMEN best practices presentation; blog posts; and the parent, student, and teacher focus group summary are included.

Bright spots

According to primary data from several **incubator team presentations,** educators were encouraged by providing **personalized instruction** that was often flexibly paced (figure 10). Personalized learning also included individual learning plans, working at students' instructional level, and collaboration and meaningful conversations between teachers and students that differentiated instruction (either one-on-one or in small groups).

> *We are most proud of our students that are taking advantage of what we are creating (a mastery/personalized educational system), those that are taking ownership of their learning. Our conversations with students are now based on academic performance and future goal setting instead of avoidance behaviors. (Incubator team presentation)*

Figure 10. "Bright spot" themes reported in incubator team presentations



The above quote also highlights a second area of success: student **ownership of and accountability for their learning**. Several teams said they were witnessing a "shift in student culture … [with] students taking ownership of their learning" and that students were "keeping track of their learning growth on a daily basis" or "pursuing more from their educational experience."

Some teams also noted changes in their **school culture**. Some described it as positive and said it fosters support among students. In addition, some teams described their school as a place where students and staff members consider one another family.

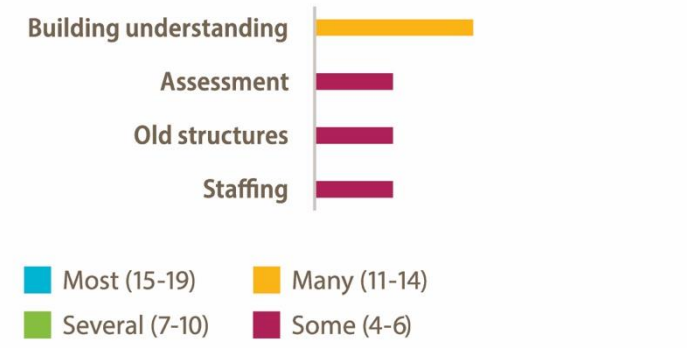
In terms of **developing assessments**, teams adopted "No Zero" and "ABC Not Yet" policies, implemented project- or standards-based assessments, evidence binders, and/or feedback rubrics. Some addressed **real-world learning** by establishing internship and job shadowing opportunities, taking students on field trips, and/or engaging in project-based and active learning. Regarding **social emotional skills**, some teams witnessed better student attendance, engagement, and behaviors. **Academic achievement** included students catching up on credits, enrolling in advanced coursework (including dual-credit classes and certification programs), learning "lifelong cognitive skills," and earning higher ISAT and SAT scores. Finally, some teams reported that their school made **curriculum and technology adoptions**.

> *We are practicing assessing students against standards and discussing being proficient versus new proficient on each specific standard. (Incubator team presentation)*

Opportunities for future growth

Primary data from **incubator team presentations** described challenges teams faced, which may be opportunities for future growth. For many teams, one example is **building understanding** of the new system; students, families, staff members, and community members have struggled with the shift to a mastery education system. For example, students needed to realize it was "OK to learn how you [the student] want instead of how I [the teacher] want," and teachers needed to understand that students would engage with their learning and not "just play with their iPad."

Figure 11. Future growth themes reported in incubator team presentations



> *One of our challenges is that we have trained students for nine-plus years and parents for [more than 250] years on one way of doing education, and now we are educating future citizens in a different manner. (Incubator team presentation)*

For some teams, **assessment** and documenting students' mastery of competencies and standards were challenging. Specifically, some teams wondered "how to measure if a student has mastered the material and what's worthy of receiving a class credit," and they were unsure about "tracking independent student progress instead of the whole class at the same level."

In addition, it was challenging for some teams to work within the confines of the **old structures**. These included supporting teachers, class scheduling, K–12 alignment, and state policy (e.g., seat time) and funding mechanisms.

Finally, some teams struggled with **staffing** issues. These included identifying funding for hiring enough teachers to support individualized learning and professional development.

Additional incubator data also identified challenges related to measuring learning, changing grading policies, and identifying an appropriate learning management system. Curriculum was also an area of challenge. To individualize learning, teachers often engaged in additional planning. Further, some curricula did not always address student needs or fit into each incubator's vision of how mastery education should work. Other areas for future growth included messaging and buy-in, as well as keeping up the momentum and doing so within confines of the old system.

> *We couldn't keep track of whether students were learning what they needed or if they were racing ahead or starting to slip behind. We couldn't hold them or ourselves accountable. (Blog post)*

> *When changes impact grades, kids and their families start paying attention. (Blog post)*

These issues may become less challenging as schools and districts gain experience with mastery education. ISDE and other stakeholders may want to provide more supports in these areas.

Parents, students, and teachers confirmed that defining, assessing, and communicating about mastery can be challenging.

> *Assessment for learning: How to determine mastery? Readiness to move on? Consistent grading/reporting practices? And how mastery is determined, maintained—80 percent, 90 percent? (Focus group participant)*

Curriculum and scheduling were particularly challenging when student work was individualized and flexibly paced—and instruction needed to correspond.

> *[How do we have a] schedule available to allow students to finish a credit and have access to another course, mid-semester, mid-quarter, etc.? (Focus group participant)*

Building staff capacity was also challenging, as teachers needed to be included in many workshops to build common understanding of new practices.

> *Professional development—common vocabulary, enrichment, remediation, calibrating expectations, competencies/learning progressions, learning opportunities, flexible grouping, technology integration, determining mastery, formative assessment for learning. (Focus group participant)*

Finally, teachers needed time to work one-on-one with students, and technology needed to meet the needs of all stakeholders.

> *Digital platform—access to content, expectations, teacher feedback, student-teacher communication, allowing for flexible pace, [individualized education programs] and [personalized learning plans], connection, maintenance, and communication. (Focus group participant)*

Appendix A: Mastery Education Authorizing Statute

TITLE 33

EDUCATION

CHAPTER 16

COURSES OF INSTRUCTION

33-1632. MASTERY-BASED EDUCATION. (1) The legislature finds that moving toward a mastery-based model of education where students progress as they demonstrate mastery of a subject or grade level is in the best interest of Idaho students. The legislature further finds that moving from the current time-based system with a mastery-based model will allow for more personalized and differentiated learning; create a focus on explicit, measurable, transferable learning objectives that empower students; and emphasize competencies that include application and knowledge along with skill development.

(2) The state department of education shall perform the following activities to move Idaho toward a mastery-based education system:

(a) Conduct a statewide awareness campaign to promote understanding and interest in mastery-based education for teachers, administrators, parents, students, business leaders and policymakers;

(b) Establish a committee of educators to identify roadblocks and possible solutions in implementing mastery-based education and develop recommendations for the incubator process; and

(c) Facilitate the planning and development of an incubator process and assessments of local education agencies to identify the initial cohort of up to twenty (20) local education agencies to serve as incubators in fiscal year 2017.

(3) The state department of education may expend or distribute moneys appropriated for purposes identified in subsection (2) of this section. The cost of activities provided for in this section shall be paid by the state department of education from moneys appropriated for this program in the educational support program budget as provided for in section 33-1002, Idaho Code.

(4) Not later than January 31 of each year, the state department of education shall report annually to the state board of education and the education committees of the senate and house of representatives regarding the progress toward implementing mastery-based education.

(5) For purposes of this section:

(a) "Incubator process" means a process where districts and charter schools that are willing and ready to start moving toward a mastery-based education system would be identified through site assessments and would form an initial cohort of incubators for mastery-based education. The incubators would receive support for staff professional development, stakeholder education and ongoing assessment and coaching. These incubators would provide data and best practices for continued implementation of mastery-based education.

(b) "Mastery-based education system" means an education system where student progress is based upon a student's demonstration of mastery of competencies and content, not seat time or the age or grade level of the student.

History:

[(33-1632) 33-1630 , added 2015, ch. 68, sec. 1, p. 183; am. and redesig. 2016, ch. 45, sec. 1, p. 95; am. and redesig. 2016, ch. 47, sec. 17, p. 111.]

Source: Idaho Code Ann. §33-16 (2018).

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Appendix C: Other Materials

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