Research Brief

Insights on Software Piloting in an Urban School District

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As teachers begin to personalize learning in their classrooms using instructional software, district leaders need to understand how best to support this process. Software piloting is an important way to introduce teachers to using digital instructional tools in their classrooms, often for the first time. Given the constantly changing nature of technology, we anticipate that piloting will be an ongoing need as teachers, schools, and districts continue to consider new products. This research brief highlights insights from our experience evaluating a variety of software products in an urban district to suggest key considerations for piloting software.
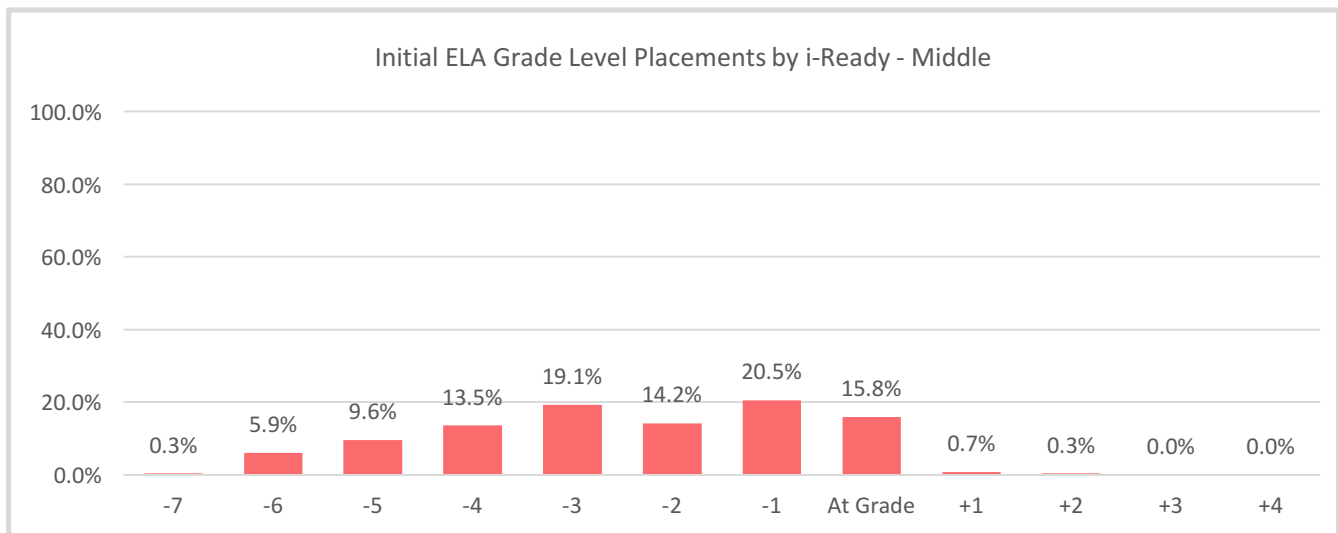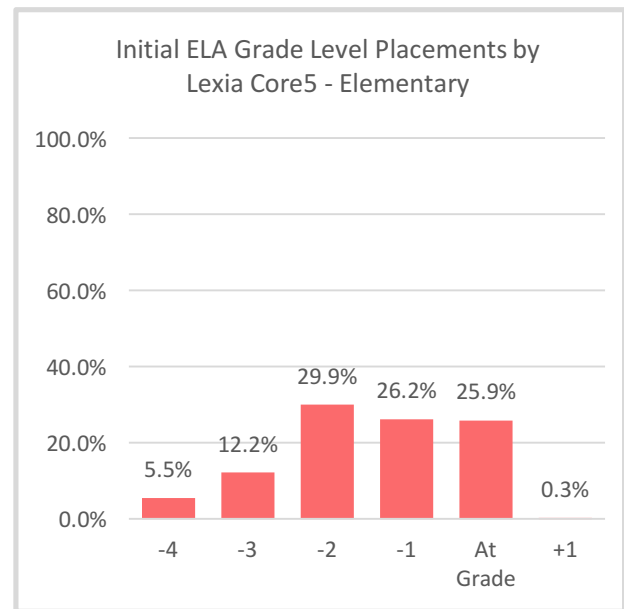
Project Background

LearnLaunch MassNET, a part of the Learning Assembly funded by the Bill and Melinda Gates Foundation, introduced instructional software for ELA content to six teams of 6-8 teachers in elementary and middle school classrooms for a total of 39 teachers and 1,126 students.

Teachers used the products for about five months. As they did this, we conducted extensive research using surveys, teacher logs, classroom observations, focus groups, teacher interviews, and product data to understand software implementation, and how teachers rated products.

Urban Context

Many students were behind grade level as placed by product assessments, often substantially:

Initial ELA Grade Level Placements by Lexia Core5 - Elementary

Initial ELA Grade Level Placements by i-Ready - Middle

As can be seen, only a small percentage of students were performing within their current grade level or above in elementary school (26.2%) and even fewer in middle school (16.8%). Furthermore, 47.7% of elementary students and 62.7% of middle school students were placed at two or more grade levels below their actual grade. These product assessment results indicate that differentiating instruction was important to support: (1) students who needed additional help to learn grade-level content, and (2) students from a wide range of entering achievement levels.

What We Learned About Software Piloting

This study provides several insights on doing instructional technology pilots, including information about:
1) Supporting teachers in the process
2) Factors to look for when evaluating products
3) Practical challenges faced by teachers when implementing instructional software
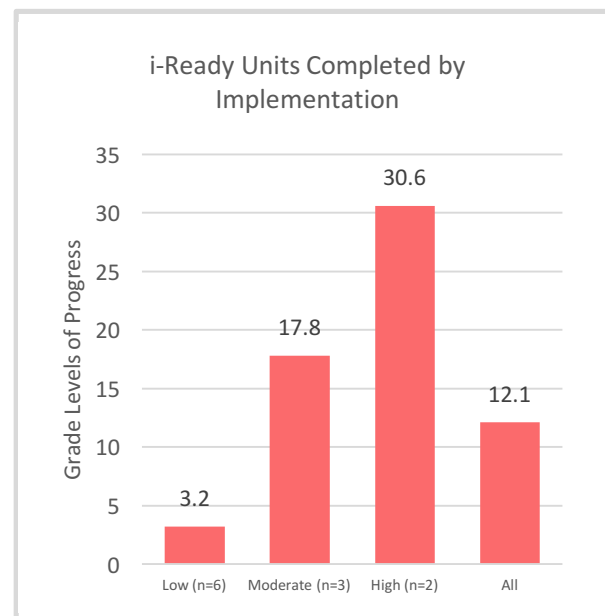4) Evaluative insights about the products used

Implementation Defined by Usage and Progress

A key distinction was made between High-Implementing (HI), Moderate-Implementing (MI), and Low-Implementing (LI) classrooms based on amount of software usage. High-Implementing (HI) classrooms (12 of 35 teachers) consistently used the product at recommended levels of approximately 45 minutes per week. Moderate-Implementing (MI) (13 of 35 teachers) classrooms used the product a substantial amount of time (400 minutes or more) but were mostly short of recommended levels. Low-Implementing (LI) (10 of 35 teachers) classrooms used the product fewer than 400 minutes.
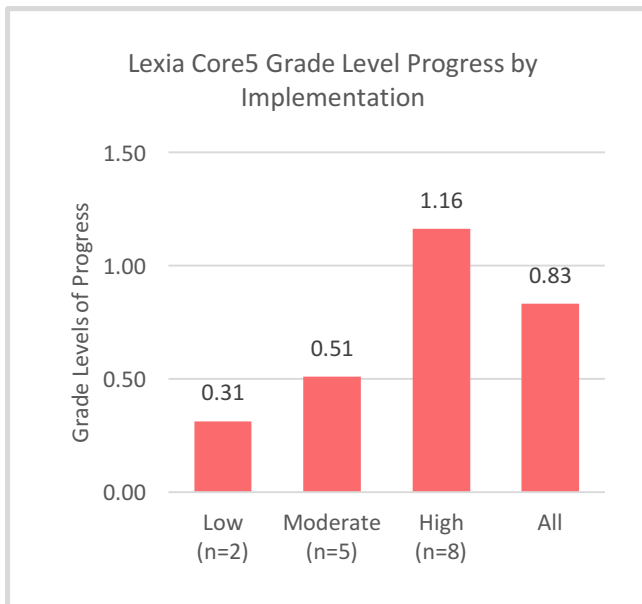
HI classrooms showed higher rates of student progress than LI classrooms. Students in HI classrooms completed approximately ten times the number of levels as LI classrooms in i-Ready and Lexia Core5. On i-Ready pre-post assessments, HI students grew an average of 18.5 scale scores versus .3 scale scores for LI students.

Students Made Much Greater Progress on i-Ready in High-Implementing Classrooms

With Lexia Core5, the HI group used the product extensively, averaging over 1,500 minutes of use for the year. Both progress measures available reflected progress within the product's levels. The number of levels varies from grade to grade, with lower grades divided into more levels than upper grades. On this metric, HI classrooms completed, on average, about three and a half levels whereas LI classrooms completed less than half a level.

Using Lexia Core5, High-Implementing Classrooms Had 3.5 Times the Growth of Low-Implementing Classrooms

Lexia Core5 Grade Level Progress by Implementation

Another progress measure was the number of grades completed, and on this measure the HI classrooms progressed on average more than one grade, which was 3.5 times as much as the LI group.

Job-Embedded PD Through the Rapid-Cycle Piloting Process Worked for Teachers

The job-embedded professional development process used in this study supported teachers to make extensive use of instructional technology products, to move toward personalized learning, and to discover numerous ways that such products could be important supports to their instruction. As such, the results of this project warrant recommending this approach as a way to evaluate products, while helping teachers move forward into personalized learning empowered by instructional software in a way they find worthwhile and effective.

This model engaged teachers as experts, emphasizing a "bottom-up" approach to implementation, allowing teachers to discover and implement practices to make software use effective and move toward personalization. At the request of our district partner, we focused on ELA instructional software, working with each team to select products to meet their needs. See "Distinctives of the Model" for more details.

Distinctives of the Model

1) Recruit motivated teams of teachers, including a point-person, with principal support
2) Offer software products aligned to instructional objectives that address school priorities
3) Provide professional development and ongoing support to teachers as issues emerge
4) Highlight the role of teachers as evaluators of products to engage their expertise
5) Evaluate products on multiple measures including the Net Promoter Score as a summative metric

This experience helped teachers to feel comfortable using products in their classrooms. Almost all participants used the software to some extent, and the strong majority made extensive use of the products in their classrooms. This was true even for a product that was almost universally rated low, as a majority of teachers persisted in finding ways to make use of it in their rooms despite ongoing challenges with software crashing due to insufficient Wi-Fi.

Teacher Practice Changed

Another important result was that teachers increased personalized teaching practices in their classrooms. This was indicated by several

data sources including pre-post LEAP Teacher Surveys, self-reported practices in individual logs, focus groups, and classroom observations.[i] Reflecting on their experiences at the end of the year, teachers were all able to identify positive changes that were made in their classroom instruction. These reflections indicated a wide range of useful changes that were made due to instructional technology.

Teachers reported making use of instructional software to change numerous practices such as conferencing individually with students, intervening with small groups, selecting lessons on products and printouts to target specific student needs, and using the products to address areas of student need. They also paid attention to student motivation and found that students were excited to be using software, engaged in friendly competition that seemed to motivate both high- and low-achieving students, used certificates and celebrations as valued rewards to students, and shared student data that helped students take ownership of their own learning progress.

> **Teachers Wanted to Continue with Instructional Technology and Move Toward Personalizing Their Classrooms**

At the end of the year, all teachers interviewed embraced the goal of moving toward personalizing their instruction by using instructional technology. At the same time, most did not articulate this vision in detailed terms. When describing their vision for personalization, 42.4% identified the need to differentiate instruction, and 21.2% mentioned other practices such as using data or focusing on student interest or choice. Thus, teachers embraced new possibilities in their teaching empowered by instructional technology, but most did not spontaneously offer this vision in detailed terms. We believe that their positive experiences laid the groundwork for future progress, and for a deeper understanding of how their classrooms could be personalized.

Higher Implementation in Core ELA Courses

Looking at amount of software usage across different types of classrooms, we found similar levels for general education, ESL, and special education. The one exception in our study was intervention classrooms, which both were categorized as LI. This finding warrants further study because of our small sample size, but this result corresponded with our general finding that software was most heavily used when teachers deeply integrated software into their instructional practice, which was more challenging when the context was a non-core classroom.

Usage Was Similar in Station Rotation and Whole Class Models

Station rotation and whole class instruction models did not differ in the amount of implementation, with both showing a range from low to high in similar proportions.

Professional Learning Communities Supported Implementation

Schools with existing professional learning communities, especially grade-level teams, tended to have more high-implementing teachers.

Net Promoter Ratings Were a Simple and Useful Summative Measure of Products

The Net Promoter Score is a widely-used measure of product satisfaction across social enterprises and other products. We found it a useful, but not complete, way for teachers to assess products, as follows:

- Lexia Core5 was the product with the highest Net Promoter Score (average=38) and was the only one in which a majority of teachers were rated as HI (8 of 13). Other products had only one-third or fewer teachers rated as HI.
- NPS ratings of products were positive, negative, or neutral relatively quickly, usually within a month.
- Products with advanced features like useful assessment data and targeted lessons tended to increase in Net Promoter ratings over time as teachers made use of these advanced features.

Other Insights on Implementation

- Teachers without prior technology experience appear to face larger hurdles in moving toward blended and personalized learning supported by instructional technology. This study suggests that they may need additional support and professional development to help them progress in their thinking and planning surrounding effective use of instructional technology.
- Quantitative analyses of teacher product ratings produced a couple of insights on usage and evaluation:
  - The strongest factor predicting usage was whether teachers perceived their students to be engaged while using the product.
  - Product ratings (NPS) were most closely related with whether teachers viewed the product as leading to improved learning outcomes.
- High implementation was only observed in classrooms where students also consistently had high rates of on-task behavior. That is, classroom management appeared to be a key factor supporting usage.
- This study reflects insights from an in-depth examination of a small sample of volunteers. Results cannot be generalized statistically to other populations, but the insights hopefully can prove useful for practitioners and for ongoing research.

Conclusion

In its first year, the LearnLaunch MassNET project found promising results on a process for evaluating software and supporting teams of teachers to begin using software to move toward personalized learning. These results were based on a rich dataset that combined a variety of data sources to give a perspective on teacher thinking and practices surrounding software use in their classrooms. As districts plan their own move toward personalized learning, we hope that these results and insights can provide useful suggestions on how to approach implementing new digital courseware in K-8 classrooms.

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[i] For complete report see *MassNET Research Report, Year One.*