TUTORMATE SYSTEM 2015 RESEARCH

Overview

During the 2014-15 school year, two important research studies were conducted to measure the impact of the TutorMate System in multiple school districts served by Innovations for Learning (IFL). George Washington’s Graduate School of Education conducted a mixed methods investigation in the Broward County Public Schools that included classroom observations, teacher interviews, teacher surveys and test score data analysis. Separately, two researchers at Epsilon Economics analyzed district test score data derived from a randomized trial of students who were tutored online during the school year. Together, these studies compellingly demonstrate the impact of the Tutormate System for beginning reading instruction.

The Randomized Study

The gold standard of research is a large trial in which students are randomly placed in treatment and control groups and compared at the beginning and end of a treatment program. This standard is seldom achieved in primary education research, since most programs impact the entire classroom, and it is difficult to obtain large samples of teachers who will divide the class into participating and non-participating students. However, in the case of IFL’s online tutoring component of the TutorMate System, only a portion of the class is provided with tutors. In 2014-15, teachers were asked to provide the names of 15 students in the lower-middle of the class. Of these 15 students, 10 were randomly chosen to receive tutoring. Over 1000 students were selected by teachers for this study in over a dozen major school districts across the country.

Test score data was collected directly from the participating school districts, and provided to two researchers at Epsilon Economics, an analytics research firm in Chicago. As described in the attached report, they found that students who received the tutoring scored 15% higher on district reading tests than the control group of students, a statistically significant outcome that corroborates teachers’ observations of student progress from online tutoring for multiple years.
Researchers at GWU’s Graduate School of Education conducted a year-long study in the Broward County Public Schools of all of the components of the TutorMate System, including online tutoring and the student and teacher portals that reinforce the learning enabled by online tutoring. The study included classroom observations of teachers in four Broward County schools, interviews of these teachers, teacher surveys and test score data analysis.

The observations and interviews enabled the researchers to study not only the impact of the TutorMate System on student learning, but also the impact on teachers’ teaching. A minute by minute analysis of teacher interaction with students during the literacy block precisely monitored teaching and learning during this key period of reading instruction. The researchers unequivocally concluded that the TutorMate System improved classroom instruction and the teachers’ knowledge of their students’ reading progress.

The researchers also analyzed test score data provided by Broward County Public Schools. As described in the attached report, students in the treatment classrooms improved from 34.5% at grade level reading at the beginning of the year to 78.2% at the end of the year.

**Conclusion**

Together, these two independent research reports demonstrate in the clearest terms yet that the TutorMate System significantly improves both teaching and learning in low income schools, on a replicable and scalable basis in school districts across the country.
November 17, 2015

Assessment of Impact of the TutorMate Program in 2014-15

By Dr. Wenqing Li and Chris Alexander

Introduction

Innovations for Learning (“IFL”) is a national education nonprofit, which conducts an online tutoring program called TutorMate in over a dozen school districts across the country. IFL recruits tutors from approximately 125 corporate partners, and pairs each tutor with a first grade student from a low-income school. Each tutor is assigned to work with the student throughout the school year, once a week, for a 30 minute online tutoring session. During each session the tutor and student read stories at the student’s instructional reading level (informed by the teacher), and play word games associated with the words the student is working on in the classroom. Nearly 3000 tutors participated in the TutorMate program during the 2014-15 school year.

The TutorMate program has been serving schools for seven years, and teachers annually report substantial positive impact that the program has for their students through an annual survey conducted by IFL. Teachers have reported a positive impact on student reading achievement, reading self-confidence, communication skills (particularly with adults) and overall self-esteem. Due to these observed improvements, teachers overwhelmingly choose to continue to participate in the program year after year.

Research

In the 2014-15 school year, data was collected on reading scores from participating students in order to conduct a research study on the objective results on students’ reading scores, relative to the intensity of tutoring received. In the 2014-15 school year, teachers were asked to provide the names of 15 students from the lower middle of their class to receive tutoring. Ten of these 15 students were randomly

* Dr. Li and Mr. Alexander specialize in economic and statistical analysis with Epsilon Economics, a Chicago-based firm focused on economic analysis and analytics. Both Dr. Li and Mr. Alexander acted as tutors in the 2014-2015 school year in participating Chicago schools.
selected to receive tutoring. At the end of the 2014-15 school year, these students were grouped into three categories: A, B or C. The A group received at least 16 tutoring sessions during the year. The B group received at least 9 sessions (but less than 16 sessions) during the year. The C group included students who did not receive tutoring and students who received less than 5 sessions per year.

Each participating district reported the beginning-of-year and end-of-year reading test scores conducted by the districts. Data was collected on 1,001 students. Each district used its own reading assessment.

Teachers tested the students’ beginning-of-year and end-of-year reading test scores according to a variety of testing methodologies. In total, we found over 30 different reading scoring systems in the data provided by IFL. This study has focused upon the students tested according to the two most common systems used to assess students’ reading abilities: the Developmental Reading Assessment (“DRA”) test and the Fountas & Pinnel Benchmark Assessment System (“F&P”), as the conversion between testing results appears to be commonly understood. Over 600 students were assessed using the DRA or F&P tests, accounting for approximately 67% of all students grouped into an A, B or C tutoring intensity group.

After isolating students tested according to these two methodologies, we converted the students’ scores to the numerical DRA system, and cleaned the data for analysis. For example, since the TutorMate program is designed to help students with reading difficulties, it probably will not have any significant impact on students whose reading levels were already high. So students were excluded if their DRA beginning reading level was 8 or above (mid first grade reading level). Similarly, we cleaned data where the scoring appeared abnormal, (e.g., if a teacher indicated a score of 55 or above). Students with no change in reading scores over the year were also

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1 Typically, teachers nominate ten students to participate in the program, and all students receive tutoring. In the 2014-2015 school year, some teachers declined to participate in the study, and instead participated in the program according to the usual nomination process. These students were not included in the study.

2 These two scoring systems accounted for approximately 67 percent students scored in the raw data. IFL provided initial DRA conversions for many of the testing methods used, however the scoring conversion chart used in our analysis between DRA and F&P was obtained from the Washington State Secretary of State website. See https://www.sos.wa.gov/_assets/library/libraries/firsttuesdays/ReadingChart.pdf. Teachers also assessed students reading scores at the beginning and end of the year using “LEAD 21”, “Scholastic”, “Success For All”, “Amplify TRC and Dibels”, “Rigby”, “Star Testing”, “Renaissance Learning”, “SRA Imagine It”, and “TRC”, among others. Although it may be possible to convert scores in other reading systems to the DRA scoring system, translating the scores from a variety of reading systems could potentially create noise in the data making measurements of reading improvement unreliable.
excluded since it is unlikely a student would not have improved his/her reading ability after spending one year in school.

The tables at the end of this report show the end-of-year reading scores and growth in reading scores for each research group, by district. Students in Group A (N=162) on average grew reading scores by 15% more than the control Group C (N=175) students (10.85 gain in DRA score versus 9.42). On average, students in Group A ended the school year with a DRA score of 13.75 compared to 12.19 for the Group C students. This represents nearly one reading level of improvement for students who received tutoring during the school year in the TutorMate program. T-tests confirmed that these gains are statistically significant at the 5 percent level.

Conclusion

We find that the data collected by IFL provided a large enough sample size to identify the statistically significant impact of tutoring intensity, using the districts’ own reading assessments. Generally, we find that the results of students’ reading assessments concur with the teachers’ own observations: that TutorMate improves students’ reading abilities, and the more consistently IFL’s tutors participate, the more students’ reading abilities improve.

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3 Certain districts show low reading scores relative to other school districts. Generally, these averages and growth calculations are based upon relatively few students in the tutoring intensity category after applying the data cleaning and reading system filters described above. Moreover, it appears that certain teachers consistently evaluated students at lower reading assessments. We continue to evaluate these data.

4 The “ALL” calculation in the tables below is a weighted average across all students in each tutoring intensity category, and does not represent the simple average of reading district level results.
### Average Growth in DRA Scores

<table>
<thead>
<tr>
<th>School District</th>
<th>Treatment Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Broward County Public Schools</td>
<td>7.29</td>
</tr>
<tr>
<td>Chicago Public Schools</td>
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<tr>
<td>DC Public Schools</td>
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</tr>
<tr>
<td>Highline Public Schools</td>
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<tr>
<td>Houston Independent School District</td>
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<tr>
<td>New York City Public Schools</td>
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<td>10.95</td>
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<td>Reynoldsburg City Schools</td>
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</tr>
<tr>
<td>Seattle Public Schools</td>
<td>11.50</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td><strong>10.85</strong></td>
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### Average End of Year DRA Scores

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<th>Treatment Group</th>
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</tr>
<tr>
<td><strong>ALL</strong></td>
<td><strong>13.75</strong></td>
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</table>
An Evaluation of the Effects of Innovations for Learning’s Digital Applications on Literacy Teaching and Learning

October 2015

Colin Green, Karen Kortecamp, Ben Harper, and Valin Jordan
This study was supported by a grant from the National Center for Research in Advanced Information and Digital Technologies (Digital Promise). The findings and views expressed are those of the authors, and the authors alone.
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Executive Summary

Introduction

Success in reading is often a predictor of school success, and children who finish elementary school with weak reading skills are at a very high risk for dropping out of high school. Reading failure is concentrated in schools serving disadvantaged, minority, and limited English proficiency children (Chambers et al., 2011). Educators have explored computer assisted instruction (CAI) applications to bolster reading programs that target emergent early readers. This report details the findings of an evaluation of one such program that utilizes CAI applications.

Innovations for Learning (IFL) is a non-profit organization dedicated to improving student literacy by providing schools with online tutoring and digital applications for teachers and students to improve kindergarten and first grade reading instruction and learning in underperforming schools. IFL’s TutorMate System aims to help students develop skills to improve their self-efficacy as learners and to build core literacy skills that will have a significant influence on the rest of their educational experiences. To do this, the IFL digital programs focus on developing five specific skills in both teachers and students. When implemented with fidelity, the IFL system aims to improve:

- Teachers’ confidence and efficacy in small group differentiated instruction skills;
- Teachers’ abilities to lead literacy instruction and strategy groups with students;
- Tutored students’ self confidence and communication with adults;
- Students’ literacy assessment performance;
- Conditions in the classroom conducive to effective teaching and learning.
**Purpose of the Evaluation**

An evaluation conducted in Spring 2015 investigated the following:

- To what extent did teachers implement the IFL system with fidelity?
- What conditions in IFL classrooms supported students’ literacy learning with IFL?
- What are teachers’ experiences using the IFL system during literacy instruction?
- To what extent did students in IFL classrooms demonstrate gains on benchmarking tests as compared to students in non-IFL classrooms?
- To what extent did students in IFL classrooms receiving online tutoring demonstrate gains on benchmarking tests as compared to students in the same IFL classrooms not receiving online tutoring?

**Methods**

We conducted the evaluation research in Florida’s Broward County Public Schools. We employed a mixed methods design (Creswell, 2014) to collect and analyze data that addressed our five central questions. We used a basic qualitative design (Merriam, 2009) to investigate our first three questions, and descriptive statistics to examine questions four and five. Five Grade 1 classrooms were randomly selected from thirteen IFL schools. Five comparison classrooms were established using student demographics. The treatment and comparison classrooms were in schools that serve high-minority, high-poverty student populations. Data were collected through treatment teacher questionnaires, treatment teacher interviews, treatment classroom observations, and analysis of students’ scores on literacy benchmarking tests in treatment and comparison classrooms.
Major Findings

Fidelity of Implementation

- IFL was effectively implemented as a complementary component of 120-minute blended literacy blocks using the ‘Daily Five’ approach, and as a stand-alone approach to literacy instruction in a 60-minute block.
- Teachers used the digital tools in stations during the literacy block with fidelity.
- Students most frequently utilized IFL as individuals or in small groups.
- Treatment teachers specifically credited the implementation of the TutorMate online tutoring component with improving students’ learning, although they believed that it should be targeted to the most struggling students.

Conditions in the Classroom

- Time-On-Task levels by students were exceptionally high during literacy instruction supported by the IFL system.
- Teachers reported a heightened awareness of students’ individual strengths and challenges, along with an increasing confidence and capacity to differentiate instruction.
- The IFL digital applications and online management system facilitated small group instruction and allowed teachers to differentiate instruction more meaningfully.
- Using IFL portals during literacy instruction enhanced students’ engagement with literacy activities and developed self-regulation in literacy learning.
- Challenges remain, however. In interviews, teachers indicated that student engagement with the digital tools was highest at the beginning of the school year, but for approximately 30% of students engagement began to decrease as the school year ended.
Teachers’ Experiences

• Teachers’ responses in questionnaires and interviews indicated a high level of satisfaction with most aspects of their literacy blocks, including the ways in which students used IFL tools.

• IFL’s organizational scheme helped teachers to set up materials, saved them time, and kept their students interested in literacy-building activities.

• Teachers expressed confidence in their strong knowledge of students’ literacy strengths and weaknesses.

• The Teacher Ambassadors modeled lessons in addition to providing technical support, although interview data on this particular aspect of teacher experiences with IFL pointed to a lack of understanding on the part of teachers and perhaps, Teacher Ambassadors, on what constitutes professional development in its broadest sense.

Student Performance

• Students who participated in at least 5 tutoring sessions over the course of the school year demonstrated the strongest gains on benchmark assessments amongst treatment students.

• When coupled with the student and teacher portal, the online tutoring component of TutorMate functioned as an important facet of the broader literacy instructional program. A large number of students’ performance on benchmark assessments reflected gains in basic reading skills. Particularly telling is the number of students who started the year below grade level but finished at or above grade level. TutorMate appeared to help many students to reach grade level ability in their emergent and basic reading skills.
Recommendations

• Carefully cross-map skills taught in IFL programs to the DRA and Rigby benchmarking assessments if a goal of IFL is to show that IFL programs influence students’ performance on these assessments.

• Track the timing, frequency, and duration of online sessions to more precisely determine the influence of those sessions on students’ literacy learning.

• Expand the mentoring role of Teacher Ambassadors to provide ongoing professional development in addition to technical support. Teachers did not perceive that Teacher Ambassadors’ provided professional development although one described that her Teacher Ambassador had modeled lessons. Expanding to include more professional development could further enhance teachers’ use of IFL digital learning tools.

• Extend the opportunities for student participation in the online component of TutorMate and the amount of time given to students to work with tutors. Teachers perceived the online sessions to be an asset to their literacy program and most beneficial to the weakest students.

• Conduct further research to examine the influence of IFL on literacy learning. Specifically, consider:
  o Increasing the sample size and conducting the evaluation in a school system that utilizes a common literacy assessment to enhance the validity, reliability and trustworthiness of the data.
  o Conducting research in a school system that has rigorous quantitative data on student literacy learning to strengthen any conclusions that are drawn from statistical analyses.
Conducting research in multiple IFL sites representing different school systems utilizing the same research protocols to determine what factors most consistently promote strongly positive student learning outcomes.
An Evaluation of the Effects of Innovations for Learning’s Digital Applications on Literacy Teaching and Learning

Introduction
Success in reading is often a predictor of school success, and children who finish elementary school with weak reading skills are at a very high risk for dropping out of high school. Reading failure is concentrated in schools serving disadvantaged, minority, and limited English proficiency children (Chambers et al., 2011). Educators have explored computer assisted instruction (CAI) applications to bolster reading programs that target emergent readers. Meta-analyses demonstrate that CAI can promote achievement; however, CAI programs designed to promote emerging literacy typically are not linked to reading instruction (Liao, 2007; Pearson, Ferdig, & Moran, 2005; Rosen & Salomon, 2007; Tamim, Bernard, Borokhovski, P. C. Abrami, & Schmid, 2011). Little is known about the implementation of teacher-mediated CAI embedded within a sustained emergent literacy program.

Review of Literature
A review of extant literature demonstrated that integrating CAI into classrooms provided numerous educational benefits. CAI in elementary classrooms promoted differentiated instruction, self-directed learning opportunities, and customizable learning environments, all of which contributed to improvements in students’ work quality (Chang, Mullen, & Stuve, 2005; Ciampa & Gallagher, 2013; Song, Wong, & Looi, 2012; Swan, Hooft, Kratcoski, & Unger, 2005). Additionally, researchers found that students’ experiences with technology influenced the ways in which they used technology in the classroom; researchers observed more frequent and efficient use of technology among
students who used devices regularly (Hyun, 2005; Ting, 2012). Literature also highlighted the importance of acquiring new literacy skills (i.e., skills for reading interactive digital texts) in today’s educational settings (Coiro, Knobel, Lankshear, & Leu, 2008). Several studies found that new and traditional literacy skills can be taught together without compromising learners’ print literacy skills, and learning both types of literacy skills can improve the overall literacy performance of students in kindergarten through fourth grade (Hutchison, Beschorner, & Schmidt-Crawford, 2012; Korat & Shamir, 2008; Korat, 2010; Larson, 2010). Similarly, several studies found that kindergarteners’ emergent literacy skills improved at a greater rate when students worked in technology-enriched classrooms (Blachowicz et al., 2009; Cviko, McKenney, & Voogt, 2011; Macaruso & Rodman, 2011; Voogt & McKenney, 2007).

Although the role of technology in literacy continues to evolve, the majority of research studies reviewed noted that incorporating devices into literacy instruction improved students’ literacy skills without compromising traditional literacy skills.

**Purpose of the Evaluation**

Broadly, the intent of the evaluation was to contribute to a reliable body of research about what education technology works in literacy instruction and what doesn’t work. Specifically, the evaluation focused on the implementation of the digital learning applications produced by *Innovations for Learning* (IFL), a nationwide education nonprofit that provides services to large urban public school districts to improve early literacy learning. The evaluation study was conducted in five high-minority, high-poverty classrooms in Broward County Public Schools (BCPS) implementing IFL Digital Literacy Tools. Comparison
of benchmarking test-score data was made to five non-IFL classrooms with comparable student demographics.

**Nature of the Project**

This study focused on the ways in which teachers and students used the TutorMate online tutoring program and their complementary student and teacher portals. Together, these programs intend to help students develop skills that improve their self-efficacy as learners while building emergent literacy skills that will have a significant influence on the rest of their educational experiences. To do this, the programs focus on developing five specific skills in both teachers and students. When implemented with fidelity, the IFL system intends to improve:

- Teachers’ confidence and efficacy in small group differentiated instruction skills;
- Teachers’ abilities to lead literacy instruction and strategy groups with students;
- Tutored students’ self confidence and communication with adults;
- Students’ literacy assessment performance;
- Conditions in the classroom conducive to effective teaching and learning.

According to IFL, individualization and differentiation of instruction are two critical components of the system that contribute greatly to the development of these five skills. IFL’s logic model details how to accomplish these goals by implementing the programs while providing teachers with sufficient support to allow them to implement the programs with fidelity (see Figure 1).
Figure 1. This logic model details the ways in which IFL’s programs aim to improve teachers’ instructional practices and students’ literacy performance.
**Student and Teacher Portals**

The student portal component of the TutorMate program includes a station-based literacy instruction system that allows students to use different parts of the software suite depending on the function of the station at which they are working. Students use certain aspects of the program in individual or small group work with their teacher; they use other aspects independently to reinforce already-taught skills. Students and teachers access the software on Apple iPads, and students use MP3 players to listen to and read along with selected books.

At the teacher station, students work in small groups (often by reading level) with their teacher on literacy skills, including decoding, sight word recognition, reading fluency, reading comprehension, vocabulary, and spelling. The teachers use the teacher portal to guide these sessions. Working independently in the student portal, students use iPads as platforms to experience individualized literacy instruction and practice and to facilitate partner work. Students use MP3 players in the listening station to listen to and record themselves reading along with selected books. An online management system enables the teacher to customize instruction for each student and review student progress at the various stations. The teacher portal allows teachers to assign independent reading to students based on their reading stages, to collect performance data from students’ independent literacy activities completed on iPads, and to take notes regarding students’ skill progression at the teacher station.

**Online Tutoring**

IFL’s TutorMate includes an online tutoring program that enables students to receive individualized online tutoring. Tutors work outside of the education system and are experts in
their own fields. At a scheduled time, they call students on a classroom laptop or desktop computer to work with them on reading skills, using literacy skill development games or guided readings. Tutors work with the students over the phone and both see the same screen on a computer, allowing them to work together on a specific reading activity. Together, TutorMate’s components promote student-centered learning environments in order to help students improve their reading achievement.

**Broward County Public Schools**

The sixth largest school system in the United States and the second largest in the state of Florida, BCPS enrolled over 260,000 students in 2014-2015. On its website, the school system reported that as of 2014-2015 students were from 240 different countries and spoke over 135 languages. The school system was comprised of 137 elementary schools, 40 middle schools, 33 high schools, 6 combination schools (e.g., middle and high school grades together), 19 centers (e.g., behavioral centers), 3 colleges, and 99 charter schools (“Broward County Public Schools,” 2015). The student racial/ethnic distribution reported was 50.8% White, 40.7% Black, 3.7% Asian, 1.3% Native American or Native Alaskan, 0.2% Native Hawaiian or Pacific Islander, and 3.4% Multiracial. Additionally, 30.5% of students identified as Ethnically Hispanic, which BCPS did not include as a race.

**Participating Schools**

Four elementary schools participated in the research. Three schools enrolled between 450 and 600 students in grades pre-Kindergarten through five; one school enrolled roughly 400 students in grades pre-Kindergarten through three. All four elementary schools have majority-minority student bodies, with total minority populations ranging from 80 to 99% of the student
population. Table 1 displays the racial/ethnic distribution of students at each participating treatment school.

Table 1

<table>
<thead>
<tr>
<th>School</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Multi-Racial</th>
<th>Asian</th>
<th>Native American/ Indian</th>
<th>Native Hawaiian/ Pacific Islander</th>
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<td>Treatment A</td>
<td>20.80</td>
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**History and Funding of the Program in BCPS**

According to Kim Whitten, IFL's Executive Director of Florida, discussions between IFL's National Director of Education, Barbara Gilbert and Robert Runcie, Superintendent of BCPS, first took place at a Council for Greater City Schools Conference in 2012. The partnership that launched in the fall of 2013 began with implementing the TutorMate online tutoring program in 13 of Broward County's public schools. Whitten explained:

*Since that time, IFL has worked side-by-side infusing kindergarten and grade 1 classrooms with technology and a blended literacy program that makes differentiated instruction a reality in their classrooms. In addition, IFL is providing a whole new level of community engagement in Broward*
County by strategically working with local corporate and community leaders to support the district in a meaningful way. Through a simple online connection, trained volunteers and corporate funding, [the online tutoring component of] TutorMate allows the district to tap into a vast network of support for its students.

On July 28, 2015, the school board renewed the partnership with IFL for the third school year. IFL is funded through Title I funds in Broward County. The partnership funds a full-time IFL District Director who is responsible for managing the over-all project, IFL staff, and customer satisfaction. In addition, IFL provides 3 full-time Teacher Ambassadors (TAs) and one half-time TA whose responsibilities include teacher training, coaching and embedded professional learning within participating classrooms throughout the year. (K. Whitten, personal email communication, August 7, 2015)

**Beneficiaries**

IFL is designed to support teachers in providing literacy instruction to students in primary grades. Along with teachers, BCPS Kindergarten and Grade 1 students in 13 elementary schools are the intended beneficiaries of the IFL TutorMate program. Students progress through 9 Reading Stages, each stage building phonics and word skills, phonemic awareness and fluency practice. As students progress through the Reading Stages, the content shifts away from an emphasis on letters, sounds, and phonemic awareness to include a focus on vocabulary, fluency, and comprehension.

**Nature of the Evaluation**

This evaluation study aimed to determine the following:

- To what extent did teachers implement the IFL system with fidelity?
• What conditions in IFL classrooms supported students’ literacy learning with IFL?
• What are teachers’ experiences using the IFL system during literacy instruction?
• To what extent did students in IFL classrooms demonstrate gains on benchmarking tests as compared to students in non-IFL classrooms?
• To what extent did students in IFL classrooms receiving online tutoring demonstrate gains on benchmarking tests as compared to students in the same IFL classrooms not receiving online tutoring?

We conducted the evaluation in BCPS during the spring of 2015. Five of thirteen Grade 1 teachers in BCPS who used IFL were randomly selected for inclusion in the treatment group. The five classrooms served high-minority, high-poverty students across four different schools. BCPS used student demographics (described later in this report) to identify five comparison schools and classrooms.

**Methodology**

We employed a mixed methods design (Creswell, 2014) to collect and analyze data that addressed our five central questions. We used a basic qualitative design (Merriam, 2009) to investigate our first three central questions, and descriptive statistics to examine questions four and five.
Research Questions 1-3: Qualitative Methods, Analysis, and Results

Methods
To examine the influence of the TutorMate program on literacy teaching and learning in first grade classrooms we gathered qualitative data from three sources: teacher questionnaires, teacher interviews, and classroom observations. This combination of data sources allowed us to gain understanding of teachers’ perspectives of IFL, while also providing the opportunity to see teachers implement IFL programs in the classroom. Triangulating three distinct qualitative data sources strengthened the validity and credibility of our data.

Teacher Questionnaires
We developed and distributed an Internet-based questionnaire to the five selected teachers. The questionnaire (see Appendix A) consisted of items that used a five-point Likert scale. We provided opportunities for additional open-ended comments for each item to allow teachers to provide more elaborated responses than a rating scale alone would offer. On the questionnaire teachers reported on: 1) facets of their literacy instruction using IFL (frequency of implementation, organization of stations, small group and individualized instruction, differentiation, student engagement, and tracking students’ progress); 2) their ability to manage literacy instruction and instructional time; 3) students’ interest and confidence in reading using digital tools; and 4) teachers’ effectiveness and satisfaction levels in using IFL.
**Teacher Interviews**

We conducted one semi-structured interview with each teacher using a single protocol (see Appendix B) that we designed to serve two purposes. Interviews delved more deeply into 1) teachers’ perceptions of literacy instruction using IFL and 2) their classroom experiences in literacy instruction using IFL. The individual interviews were conducted in March 2015 and each lasted approximately 40 minutes. Teachers addressed the influence of IFL on their teaching effectiveness, their confidence in differentiating instruction, and their capacity to know each student’s strengths and weaknesses in reading. In broad strokes, teachers noted how IFL helped them to conduct small group and individualized instruction, to manage their classrooms, and to gauge their students’ reading confidence and interest. Interviews also drew out the teachers’ views and perceptions of the benefits and frustrations of using IFL digital tools.

**Classroom Observations**

We conducted two classroom observations of each teacher’s literacy blocks. Observations lasted between 60 and 120 minutes, depending on the length of the literacy block on the days we scheduled our observations. We used a structured protocol (see Appendix C) to document as much detail as possible about what occurred during the literacy block. This included the extent of IFL utilization during literacy instruction, differentiation, management, organization, teacher time-on-task, students’ self-regulation and ability to work independently, and levels of student engagement.

**Analysis**

We coded and analyzed all qualitative data using Miles, Huberman, and Saldaña’s (2014) first and second cycle coding to identify emergent themes.
First cycle analysis was guided by a set of codes we had noted in our review of existing literature in the field of technology-assisted early literacy learning, and from the central questions that guided this evaluation study. From each of the three data sources, deductive codes directly related to the questions framing the evaluation were initially assigned to detect recurring patterns. From these patterns, a second cycle of coding identified clusters or axial codes. Axial codes from our teacher questionnaires, teacher interviews, and observations were then triangulated to strengthen the validity and credibility of the results (Creswell, 2014).

3 Key Themes in Data
1. Fidelity of Implementation
2. Classroom Conditions
   • Time on Task
   • Differentiation
   • Student Engagement and Self-Regulation
3. Teachers’ Experiences

Under each theme we first list the main findings, and then provide supporting detail.

Theme 1: Fidelity of Implementation
Four Main Findings:
1. IFL was effectively implemented as a complementary component of 120-minute blended literacy blocks using the Daily 5 approach, and as a stand-alone approach to literacy instruction in a 60-minute block.
2. Teachers used the digital tools in stations during the literacy block with fidelity.

Results
Analysis of data from questionnaires, interviews and observations revealed three key themes relevant to our first three central questions. These themes provided insight into how IFL worked within the classrooms, and the ways in which implementation influenced students’ and teachers’ classroom experiences.
3. Students most frequently utilized IFL as individuals or in small groups.

4. Treatment teachers specifically credited the implementation of the TutorMate online tutoring component with improving students’ learning, although they believed that it should be targeted to the most struggling students.

Student and Teacher Portal Fidelity of Implementation

In four of the five observed classrooms, teachers incorporated IFL tools into an already embedded Daily Five rotation system in which students selected or were assigned to one of several stations to work on a specific literacy skill. The Daily Five was a literacy structure that incorporated five literacy tasks aimed at developing the students’ independence in their literacy learning. The five tasks of the Daily Five were:

1) Read to self;
2) Read to someone;
3) Work on writing;
4) Listen to reading; and
5) Word work.

One classroom had a dedicated 60-minute IFL block that used IFL stations exclusively and an additional 60-minute literacy block that incorporated other Daily Five components. In interviews teachers reported that they scheduled literacy blocks each day, however due to other school activities encroaching on instructional time (fire drills, special events, testing) they were not able to use IFL 100% of the time.

Students used IFL tools either individually or in small groups, depending on the tool they used.

The biggest advantage of Innovations for Learning is that I can constantly monitor my children’s progress. That’s really important when they’re learning to read.

— Treatment Teacher 3

Interview Data
In questionnaires and interviews, teachers reported that student and teacher portals worked well within the Daily Five system, and the amount of time each student spent at a given station varied daily. In interviews, teachers noted that the online management system included with the IFL tools allowed them to monitor students’ progress regularly. We observed teachers using the teacher portal tools to guide small group instruction and to conduct 1:1 conferences with students. We observed students independently using the practice station tools to guide them in word work, students independently using the listening station to guide them in listening and reading along to books to improve fluency and vocabulary and, in one classroom, we observed students working in pairs in a partner station to support one another in word work.

**Online Tutoring Fidelity of Implementation**

Up to 10 of the lowest performing students in each classroom were assigned tutors through the online tutoring component of the TutorMate program. According to teachers, tutoring sessions began mid-way through the school year in the treatment classrooms, and volunteer tutors were added to the tutoring roster during the spring. TutorMate online tutoring was used with less predictable regularity than the teacher and student portals because the program relied on tutors recruited from and employed by local businesses to call in to classrooms. Still, teachers reported that students were

*Teachers* frequently utilize the IFL teacher and student portals.

*Students* most frequently utilize IFL as individuals or in small groups.

*Observational Data*
highly engaged during their tutoring sessions and that students eagerly anticipated their next session. Treatment teacher 5 specifically credited the online component of TutorMate with improving students’ learning saying, “What has also helped with this year’s students’ learning is the tutor mate portion of the IFL programming. My students were very excited when their tutor would call in” (Questionnaire data). TutorMate stations operated efficiently and supported student independence by having a designated station in the classroom with the necessary technology readily available, an assigned greeter to answer the phone, and established routines and schedules.

Teachers noted in interviews that students viewed the online tutoring component of TutorMate very positively, even though its benefit was more noticeable for certain students than for others. Treatment teachers 3 and 5 noted that the online sessions tool might have been even more effective if it were targeted to those students who would benefit the most from it. A more targeted and focused use of the online tutoring component of TutorMate to increase its use with struggling students was further supported in our quantitative data, where we noted that increased frequency of online sessions correlated with greater gains in student performance over the course of the 1st grade year.

**Theme 2: Classroom Conditions**

**Five Main Findings:**

1. *Time-On-Task levels by students were exceptionally high during literacy instruction supported by the IFL system.*

2. *Teachers reported a heightened awareness of students’ individual strengths and challenges, along*
with an increasing confidence and capacity to differentiate instruction.

3. The teacher portal and the IFL online management system facilitated small group instruction and allowed teachers to differentiate instruction more meaningfully.

4. Using IFL tools during literacy instruction enhanced students’ engagement with literacy activities and developed self-regulation in literacy learning.

5. Challenges remain, however. In interviews, teachers indicated that student engagement with the digital tools was highest at the beginning of the school year, but for approximately 30% of students engagement began to decrease as the school year ended.

Data indicated a central theme of how IFL digital learning tools influenced the teaching and learning process within treatment classrooms. Three distinct yet related sub-themes emerged:

- Time-on-Task
- Differentiation
- Student Engagement and Self-Regulation

These sub-themes highlighted how IFL tools had an impact on student time-on-task; influenced the degree to which teachers could differentiate their literacy instruction; and helped to support student engagement and develop self-regulation in learning.

Sub-Theme A: Time-on-Task

In classroom observations we used 3-4 minute intervals during the literacy instruction block to catalogue student time-on-task. We developed four observational indicators for this particular facet of observations (See Appendix C). Observations revealed

I have a multi-age classroom and the IfL helps with a situation where differentiation is a must.

— Treatment Teacher 2

Interview Data
that across the five treatment classrooms more than 90% of students remained on task during 92% of instructional time (see Figure 2). On average, 90% or more of students stayed on task when reading 91% of the time; when doing peer work, 90% or more of students remained on task 92% of the time. Across all five IFL classrooms, 90% or more of students worked at differentiated levels of literacy for 93% of instructional time. Across all five IFL classrooms, 90% or more of students worked effectively with peers 96.5% of the instructional time. Teaching and learning materials were organized by teachers to support such high levels of student time-on-task.

**Figure 2.** This graph depicts the rates at which we observed 90% or more of students maintaining different forms of engagement during their literacy blocks.
Sub-Theme B: Differentiation

Interview and questionnaire data from teachers pointed clearly to the advantages that the IFL tools brought to their capacities to differentiate literacy instruction. For example, Treatment Teacher 5 conveyed, “The piece that I have implemented this year that helps with differentiating instruction or with quick one-on-one conference or assessment is the TeacherMate* piece. This helped me know which student may still be struggling in certain phonics skills or sight words” (Questionnaire data).

Teachers reported a heightened awareness of students’ individual strengths and challenges, along with an increasing confidence and capacity to differentiate instruction. IFL’s teacher portals and the IFL online management system facilitated small group instruction and allowed teachers to differentiate instruction more meaningfully.

Teacher 2’s self-reported data noted in the text box above was substantiated and confirmed by our classroom observation data. Three indicators of the observation protocol (see Appendix C) directly evaluated the degree to which IFL approaches to literacy instruction facilitated differentiation in teaching and learning. On a Likert-scale rating of 1-5, with a rating of 5 indicating compelling evidence of differentiated instruction being supported, the average ratings observed across all five classrooms were noticeably high (see Figure 3).

* “TeacherMate” refers to the student and teacher portals.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Evidence</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher uses stations to differentiate instruction</td>
<td>Stations are set up for appropriate use for differentiated activities</td>
<td>1-5 (Deficient to Exemplary) 5 = Compelling evidence indicator is met 1 = Limited to no evidence indicator is met</td>
</tr>
<tr>
<td>Teacher instructional time is tailored to needs of individual student</td>
<td>Uses the OMS system to determine the work needed for students to complete at each station, etc.</td>
<td>1-5 (Deficient to Exemplary) 5 = Compelling evidence indicator is met 1 = Limited to no evidence indicator is met</td>
</tr>
<tr>
<td>Teacher regularly assesses individual student progress</td>
<td>Teacher moves around room to work with individuals and small groups; uses running records, etc.</td>
<td>1-5 (Deficient to Exemplary) 5 = Compelling evidence indicator is met 1 = Limited to no evidence indicator is met</td>
</tr>
</tbody>
</table>

**Average Rating across 5 classrooms = 4.6**

**Average Rating across 5 classrooms = 4.8**

**Average Rating across 5 classrooms = 4.9**

*Figure 3.* This chart displays indicators for observations related to differentiated instruction.

**Sub-Theme C: Student Engagement and Self-Regulation**

Using IFL tools during literacy instruction enhanced students’ engagement with literacy activities and self-regulation. Teachers reported that they were able to monitor students’ engagement levels during instruction, and engagement remained strong throughout the literacy block. Our observational classroom data showed students transitioning efficiently between stations, and then re-engaging with the new literacy activity.
quickly. Students required very few teacher redirections during instructional time. The combination of familiarity and accessibility inherent to IFL tools and the station-based system helped to maintain students’ engagement with their learning activities. Teachers reported in interviews that as students experienced gains in literacy learning, confidence in their ability to learn increased. However, they noted that IFL is only one component of a literacy program that contributes to increased confidence in reading and that confidence was greatest among students performing at high and middle levels. Based on our observational data, we noted the strong scaffold that IFL digital tools offered to teachers and students so that instruction could truly be individualized and customized to each student’s strengths and weaknesses. Observational data confirmed a number of teacher interview comments that the use of IFL tools made possible the promise of early literacy instruction that can be truly customized to each learner’s strengths and weaknesses. Individualized literacy instruction that may be even more effective than small-group instruction seems to be the promising arc for IFL tools in the early years’ classroom. Challenges remain, however. In interviews, teachers indicated that student engagement with the digital tools was highest at the beginning of the school year, but for approximately 30% of students engagement began to decrease as the school year ended. As with all instructional strategies and tools, teachers noted that some students were less interested in technology than others.

Truly individualized and customized literacy instruction is possible with IFL tools.

Observational Data
**Theme 3: Teachers’ Experiences**

Four Main Findings:

1. **Teachers’ responses in questionnaires and interviews** indicated a high level of satisfaction with most aspects of their literacy blocks, including the ways in which students used IFL tools.

2. **IFL’s organizational scheme helped teachers to set up materials, saved them time, and kept their students interested in literacy-building activities.**

3. **Teachers expressed confidence in their strong knowledge of students’ literacy strengths and weaknesses.**

4. **The Teacher Ambassador modeled lessons in addition to providing technical support. However, interview data on this particular aspect of teacher experiences with IFL pointed to a lack of understanding on the part of teachers and, perhaps, Teacher Ambassadors on what constitutes professional development in its broadest sense.**

Teachers felt that their ability to differentiate instruction improved following the incorporation of IFL into their Daily Five system. Despite occasional technological glitches, teachers liked that IFL offered several component stations, and IFL’s organizational scheme helped them to set up materials, saved them time, and kept their students interested in literacy-building activities. As noted in a previous section, teachers expressed confidence in their strong knowledge of students’ literacy strengths and weaknesses, and their subsequent ability to differentiate instruction for their students. Regarding their

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*The program gives students options. These are options to 'learn how you want to learn'.*

— Treatment Teacher 2

*Interview Data*
students’ experiences, teachers noted in interviews that, as students’ performance improved, so too did their confidence. Students also demonstrated strong interest in reading both in groups and independently.

A strong current in teacher interview data focused on the role of Professional Development. Teachers indicated that they received initial support from IFL in the form of a two-day professional development seminar to learn about IFL tools and their potential use in the classroom. In addition, Teacher Ambassadors who worked for IFL were assigned to teachers in each school and provided support to them throughout the school year. A follow-up seminar was then conducted between the first and second years of implementation. Interestingly, teachers characterized the seminars at the beginning of the first and second years of implementation as strong professional development supports. The support provided by Teacher Ambassadors throughout the school year, however, was not characterized in the same way, but rather as a form of ‘customer support’, or as ‘someone I can call when things don’t work’. One teacher remarked that professional development needed to be ‘spread throughout the year’ and not just at the start of the school year. Another teacher noted that the Teacher Ambassador modeled lessons in addition to providing technical support. Our interview data on this particular aspect of teacher experiences with IFL appeared to point to a lack of understanding on the part of teachers and, perhaps, Teacher Ambassadors on what constitutes professional development in its broadest sense. Data suggests a need for an explicit clarification or expansion of the role and purpose of the IFL Teacher Ambassador.
Research Questions 4 & 5: Quantitative Methods, Analysis and Results

Methods
To examine possible changes in students’ performance on literacy benchmark assessments, the BCPS Office of Research provided us with student benchmark assessment data for all five of the treatment classrooms. Additionally, BCPS selected five other classrooms to act as a comparison group for our analyses. Teachers conducted benchmark assessments in their classrooms; we were not involved in assessment administration in any classrooms.

Participants
Following the guidelines for the protection and ethical treatment of human subjects, (IRB # 091460) BCPS’ Office of Research established comparison schools from which five classrooms were matched to the five treatment classrooms. Comparison schools were identified utilizing the student and sub-group demographics displayed in Table 2.
Table 2

First Grade Enrollments and Demographics for Treatment and Comparison Schools for School Year 2014 - 2015

<table>
<thead>
<tr>
<th>School</th>
<th>Students (n)</th>
<th>Black (%)</th>
<th>Hispanic (%)</th>
<th>White (%)</th>
<th>ELL (%)</th>
<th>FRL (%)</th>
<th>SWD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment A*</td>
<td>64</td>
<td>64.1</td>
<td>10.9</td>
<td>37.5</td>
<td>21.9</td>
<td>92.2</td>
<td>14.1</td>
</tr>
<tr>
<td>Comparison A</td>
<td>64</td>
<td>64.1</td>
<td>29.7</td>
<td>35.9</td>
<td>43.8</td>
<td>92.2</td>
<td>14.1</td>
</tr>
<tr>
<td>Treatment B*</td>
<td>112</td>
<td>97.3</td>
<td>2.7</td>
<td>4.5</td>
<td>17.0</td>
<td>100.0</td>
<td>6.3</td>
</tr>
<tr>
<td>Comparison B</td>
<td>102</td>
<td>94.1</td>
<td>3.9</td>
<td>5.9</td>
<td>20.6</td>
<td>97.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Treatment C*</td>
<td>71</td>
<td>91.5</td>
<td>4.2</td>
<td>5.6</td>
<td>21.1</td>
<td>100.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Comparison C</td>
<td>76</td>
<td>97.4</td>
<td>5.3</td>
<td>3.9</td>
<td>7.9</td>
<td>97.4</td>
<td>10.5</td>
</tr>
<tr>
<td>Treatment D*</td>
<td>81</td>
<td>92.6</td>
<td>7.4</td>
<td>7.4</td>
<td>19.8</td>
<td>98.8</td>
<td>11.1</td>
</tr>
<tr>
<td>Comparison D</td>
<td>81</td>
<td>87.7</td>
<td>7.4</td>
<td>14.8</td>
<td>22.2</td>
<td>93.8</td>
<td>11.1</td>
</tr>
</tbody>
</table>

Note: ELL refers to English language learners. FRL refers to students receiving free or reduced-price lunch from the district. SWD refers to students with disabilities (gifted students are not included in this total).

*These schools were used to establish schools’ within group membership

In BCPS, schools had the option to use one of two literacy assessments, the Developmental Reading Assessment (DRA) and the Rigby Reading Evaluation and Diagnostic Assessment test. Both tests assess students’ skills in (a) print awareness; (b) phonological awareness; (c) letters and sounds; (d) word recognition; (e) word analysis; (f) reading fluency and accuracy; (g) reading comprehension; (h) spelling; and (i) word meaning. The subtests comprising each assessment are detailed in Figures 6 and 7 (see Appendix D). Both DRA and Rigby are criterion-referenced tests that are administered to students individually. Three of the participating treatment
classrooms (in three different schools) used DRA and two treatment classrooms (in one school) used Rigby. Once comparison schools were established, the BCPS Office of Research used the literacy assessments to select comparison classrooms and to match to treatment classrooms. Within the IFL classrooms, teachers selected those students whom they identified as having the lowest literacy skills to receive online tutoring.

**Analysis**

To conduct meaningful statistical analyses of students’ benchmark assessment performances, we included only first grade students for whom valid start-of-year and end-of-year performance data were available in the analysis. One treatment classroom included kindergarten and first grade students. Table 3 lists the number of students in each treatment and comparison classroom for whom these data were available and the number of students that received online tutoring services.

To examine the effect of the student and teacher portals on student achievement, students’ benchmark assessment scores were grouped based on whether their classrooms participated in the IFL programs. Means from start-of-year and end-of-year scores were then compared.

To examine the effect of online tutoring on student achievement, students receiving the service were grouped based on the number of sessions (0-4 sessions, 5-8 sessions, 9-15 sessions, 16+ sessions) in which they participated. Means from start-of-year and end-of-year scores were then compared.
### Table 3

**Number of Students in Each Classroom**

<table>
<thead>
<tr>
<th>Classrooms</th>
<th>Total Number of Students in Classroom</th>
<th>Number of Students Receiving Online Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom 1</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Classroom 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Classroom 3</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Classroom 4</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Classroom 5</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Total Treatment Students</td>
<td>55</td>
<td>29</td>
</tr>
<tr>
<td><strong>Comparison</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom 1</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Classroom 2</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Classroom 3</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>Classroom 4</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>Classroom 5</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>Total Comparison Students</td>
<td>60</td>
<td>-</td>
</tr>
</tbody>
</table>

Total number of students in the evaluation: 115 58

*Note.* Classroom totals include only first grade students for whom start-of-year and end-of-year assessment data was available.
**Results**

Two Main Findings:

1) **Students who participated in at least 5 tutoring sessions over the course of the school year demonstrated the strongest gains on benchmark assessments amongst treatment students.**

2) **When coupled with the student and teacher portal, the online tutoring component of TutorMate functioned as an important facet of the broader literacy instructional program. A large number of students’ performance on benchmark assessments reflected gains in basic reading skills. Particularly telling is the number of students who started the year below grade level but finished at or above grade level. TutorMate appeared to help many students to reach grade level ability in their emergent and basic reading skills.**

These findings provided insight into the ways in which IFL programs influenced students’ reading skills.

**Student Performance**

We analyzed the students’ instructional reading level scores. Instructional reading scores represent the level at which a reader can read text with 90% accuracy (i.e., no more than one error per 10 words read). Instructional reading level engages the student in challenging, but manageable text. IFL’s Reading Stage 9 correlates with instructional levels 14 of the DRA, and 13,14 of the Rigby, with DRA level 18 and Rigby levels 17,18 the expected benchmarks at the end of Grade 1.

Comparing beginning and end of year scores showed that students’ benchmark assessment performance revealed growth in literacy skills overall. The number of students performing at or above grade level improved dramatically, with far fewer
students in treatment classrooms remaining below grade level (see Tables 4 and 5). In classrooms in which literacy instruction included teacher and student portals, students made strong gains in benchmark assessment performance.

This analysis indicates that IFL’s teacher and student portals functioned as important facets of the broader literacy instructional program. Students’ performance on benchmark assessments reflects good gains in basic reading skills. Of particular note is the number of students that began the year below grade level that reached grade level ability or better in their emergent and basic reading skills.

Although demographically similar comparison classrooms demonstrated similarly strong improvements, several intervening variables had the potential to cause such a scenario. As previously noted, IFL is one of several literacy approaches used within treatment classrooms; this prevented us from isolating the direct effects of IFL programs. Additionally, teachers’ previous years of teaching experience, student mobility during the school year, and alignment between program content and benchmark assessments may all affect testing results. Furthermore, literacy approaches may have differed between treatment and comparison classrooms beyond the use of IFL. The extent to which these intervening variables may be pronounced in treatment and comparison classrooms was not measurable for this evaluation. Moreover, benchmark assessment data provided to us by BCPS were not complete; missing data required us to limit our analysis to only students for whom complete start-of-year and end-of-year data were available.
Percent of Treatment Students Below Grade Level

Start of School Year

- Below Grade Level: 65.5%
- At or Above Grade Level: 34.5%

End of School Year

- Below Grade Level: 21.8%
- At or Above Grade Level: 78.2%

Percent of Treatment Students Below, At, or Above Grade Level

Start of School Year

- Below Grade Level: 65.5%
- At Grade Level: 32.7%
- Above Grade Level: 1.8%

End of School Year

- Below Grade Level: 21.8%
- At Grade Level: 45.5%
- Above Grade Level: 32.7%
Table 4

Number and Percent of Treatment Students Below, At, or Above Grade Level

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Start of School Year</th>
<th></th>
<th>End of School Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Below Grade</td>
<td>36</td>
<td>65.5</td>
<td>12</td>
<td>21.8</td>
</tr>
<tr>
<td>At Grade</td>
<td>18</td>
<td>32.7</td>
<td>25</td>
<td>45.5</td>
</tr>
<tr>
<td>Above Grade</td>
<td>1</td>
<td>1.8</td>
<td>18</td>
<td>32.7</td>
</tr>
</tbody>
</table>

Note. Both Rigby and DRA determine assessed literacy levels. On both tests, levels of 6 and below are considered to be below grade level; scores between 7 and 18 are considered to be at grade level; scores above 18 are considered to be above grade level.

Table 5

Number and Percent of Comparison Students Below, At, or Above Grade Level

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Start of School Year</th>
<th></th>
<th>End of School Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Below Grade</td>
<td>46</td>
<td>76.7</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>At Grade</td>
<td>14</td>
<td>23.3</td>
<td>33</td>
<td>55.0</td>
</tr>
<tr>
<td>Above Grade</td>
<td>0</td>
<td>0.0</td>
<td>21</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Note. Both Rigby and DRA determine assessed literacy levels. On both tests, levels of 6 and below are considered to be below grade level; scores between 7 and 18 are considered to be at grade level; scores above 18 are considered to be above grade level.
Online Tutoring and Student Performance

Students who received TutorMate online services demonstrated particularly strong improvement in literacy skills. The number of online sessions provided to each student varied. In some cases, tutors were not assigned until spring and in others, tutors were not able to call in weekly. This information was provided as ranges and is detailed in Table 6.

Table 6

<table>
<thead>
<tr>
<th>Number of Sessions</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 Sessions</td>
<td>3</td>
</tr>
<tr>
<td>5-8 Sessions</td>
<td>9</td>
</tr>
<tr>
<td>9-15 Sessions</td>
<td>17</td>
</tr>
<tr>
<td>No Sessions</td>
<td>26</td>
</tr>
</tbody>
</table>

Mean start-of-year scores, mean end-of-year scores, and mean improvement in scores indicated that receiving more tutoring services might have contributed to stronger improvements in literacy skills. Specifically, students who received at least 5 online sessions over the course of the school year demonstrated the greatest improvement in DRA scores among all students in the treatment group (see Tables 7 and 8). Of students who took the Rigby, those who received 5-8 tutoring sessions demonstrated the greatest improvement.

Again, intervening variables may have affected students’ assessment scores. Although the number of TutorMate sessions was known, the timing, frequency and duration of those sessions was not. Such conditions likely varied by student and by classroom, and so their affects cannot be known. Differences between students who took each benchmark assessment indicated that TutorMate activities might align better with the content of the DRA than with Rigby, which could also confound the analysis.
### Table 7

**Treatment Students' DRA Assessment Descriptive Statistics by Number of Online Sessions**

<table>
<thead>
<tr>
<th>Number of Online Sessions</th>
<th>n</th>
<th>Start of School Year</th>
<th>End of School Year</th>
<th>Change of Score Between Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>0-4 Sessions</td>
<td>3</td>
<td>5.00</td>
<td>2.646</td>
<td>14.67</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.20</td>
<td>1.304</td>
<td>13.00</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>2.60</td>
<td>.548</td>
<td>14.80</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>8.87</td>
<td>6.854</td>
<td>19.87</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>28</td>
<td>6.32</td>
<td>5.774</td>
</tr>
</tbody>
</table>

**Note.** No students in this group received 0-4 online sessions.

### Table 8

**Treatment Students' Rigby Assessment Descriptive Statistics by Number of Online Sessions**

<table>
<thead>
<tr>
<th>Number of Online Sessions</th>
<th>n</th>
<th>Start of School Year</th>
<th>End of School Year</th>
<th>Change of Level Between Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>5-8 Sessions</td>
<td>4</td>
<td>6.92</td>
<td>4.712</td>
<td>9.80</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>5.37</td>
<td>5.33</td>
</tr>
</tbody>
</table>

**Note.** No students in this group received 0-4 online sessions.
Conclusions

While it is beyond the scope of this evaluation to test all aspects of IFL's program theory of change (Figure 1), key findings of this evaluation lead us to conclude that teachers utilized the student and teacher portals with fidelity, were confident in their ability to utilize the teacher portal effectively to differentiate small group and individual instruction, and they were satisfied with students' use of IFL digital tools. IFL programs promoted student independence and self-regulation in literacy learning and contributed to implementing a learning station approach to literacy instruction.

Teachers were enthusiastic about the benefits of tutoring sessions for students and reported that students were eager to participate in the sessions. Those students who received at least 5 online sessions demonstrated the strongest gains on benchmark assessments, which indicated that more sessions might lead to greater skill improvement.

Importantly, as part of a blended approach to literacy instruction and learning, TutorMate helped students to perform at or above grade level on reading benchmark assessments by the end of the school year.

The online management system aided teachers in determining differentiated small group and individual instruction and monitoring students’ progress. Furthermore, truly individualized and customized literacy instruction in the early years literacy classroom is possible with IFL tools. Individualized literacy instruction that may be even more effective than small-group instruction seems to be the promising arc for IFL tools in the early years’ classroom.
**Recommendations**

Although this evaluation research was limited by a small sample size and challenges in implementing the evaluation design, we recommend consideration of the following to extend understanding of the influence of IFL’s digital learning tools on literacy learning:

- Carefully cross-map skills taught in IFL programs to the DRA and Rigby benchmarking assessments if a goal of IFL is to show that IFL programs influence students’ performance on these assessments.

- Track the timing, frequency, and duration of TutorMate online sessions to more precisely determine the influence of those sessions on students’ literacy learning.

- Expand the mentoring role of Teacher Ambassadors to provide ongoing professional development in addition to technical support to further enhance teachers’ use of IFL digital learning tools.

- Extend the opportunities for more student participation in the online tutoring component of TutorMate and for more time to work with tutors given that teachers perceive those sessions to be assets to their literacy program and beneficial to students.

- Conduct further research to examine the influence of IFL on literacy learning. Increase the sample size and conduct the evaluation in a school system that utilizes a common literacy assessment to enhance the validity, reliability and trustworthiness of potential data.

- Conduct research in a school system that has rigorous
quantitative data on student literacy learning to strengthen any conclusions that are drawn from those statistical analyses, and conduct research in multiple IFL sites utilizing the same protocols to determine what factors most consistently promote strongly positive student learning outcomes.

**Limitations**

We draw attention to two main limitations to this study – limited access to assessment data, and no access to the demographically similar comparison classrooms.

First, benchmark assessment data for some students in both treatment and comparison classrooms was incomplete and thus reduced the sample population we could include in our statistical analyses. Furthermore, the school system’s use of two benchmarking tests rather than one added a further layer of complexity.

We were not able to access data on student mobility in the treatment and demographically similar comparison classrooms (a possible influence on student performance), along with satisfactory matching by BCPS of teachers by years of experience (in all but one case, comparison classrooms had teachers with more years of experience than treatment classrooms).

Second, we were unable to secure principal approval from the demographically similar comparison schools to recruit a group of comparison teachers to complete the questionnaire and to be observed as originally intended. Principals who responded to our multiple requests for participation explained that they did not want to burden their teachers by asking them to participate in the research. Without such comparison data, we were unable to determine if teachers from the comparison classrooms were utilizing literacy
approaches and materials that, excepting the IFL digital learning tools, were similar or different than those used in treatment classrooms.
References


doi:10.1300/J025v24n03
Appendix A
Teacher Questionnaire

Section 1 - Your Literacy Block
Thank you for agreeing to participate in this questionnaire. For each item below, please indicate your perceptions of each aspect of your literacy block during the current school year. Also, in the space provided below each question, please provide any additional explanation or information relevant to your response.

1. Do you currently use Innovations for Learning systems during your literacy instruction?
   (Mark only one oval.)
   o Yes
   o No

2. During this school year’s literacy blocks, how frequently do students spend time reading independently?
   (This does not include work for reading responses.)
   (Mark only one oval.)
   o Every block
   o Most blocks
   o Sometimes
   o Rarely
   o Never
   o Other: ________________________
3. During this school year’s literacy blocks, how frequently are you able to attend to individual students’ reading during small group work?  
(Mark only one oval.)
  o Every block
  o Most blocks
  o Sometimes
  o Rarely
  o Never
  o Other: __________________________

Additional comments on Question 3:

4. During this school year, how frequently do you have the tools you need to track students’ progress throughout your literacy block?  
(Mark only one oval.)
  o Always
  o Usually
  o About half of the time
  o Seldom
  o Never
  o Other: __________________________

Additional comments on Question 4:

5. During this school year’s literacy blocks, how frequently are you able to tailor your instructional time to students’ individual needs?  
(Mark only one oval.)
  o Always
  o Usually
  o About half of the time
  o Seldom
  o Never
  o Other: __________________________

Additional comments on Question 5:
6. During this school year's literacy blocks, how frequently are you able to tailor your instructional time to students' individual needs?
(Mark only one oval.)
- Every block
- Most blocks
- Sometimes
- Rarely
- Never
- Other: ______________________

Additional comments on Question 6:
Section 2 - Student Activity during the Literacy Block

Please indicate which response best represents your perception of your literacy block. Please provide any additional thoughts in the comments section provided after each question.

7. During this school year, how aware are you of each student's activities during your literacy block?
(Mark only one oval.)
- Very aware
- Aware
- Somewhat aware
- Minimally aware
- Not aware
- Other: ____________________________

Additional comments on Question 7:

8. During this school year, how helpful are literacy stations in keeping students on task throughout your literacy block?
(Mark only one oval.)
- Very helpful
- Helpful
- Somewhat helpful
- Minimally helpful
- Not helpful
- Other: ____________________________

Additional comments on Question 8:
9. During this school year, how aware are you of each student's level of engagement during your literacy block?
   (Mark only one oval.)
   o Very aware
   o Aware
   o Somewhat aware
   o Minimally aware
   o Not aware
   o Other: ______________________
   Additional comments on Question 9:

10. During this school year, how engaged are students during your literacy block?
    Mark only one oval.
    o Very highly engaged
    o Highly engaged
    o Somewhat engaged
    o Minimally engaged
    o Not engaged
    o Other: ______________________
    Additional comments on Question 10:

11. During the school year, how aware are you of the individual strengths and weaknesses of each student's reading ability?
    (Mark only one oval.)
    o Very aware
    o Aware
    o Somewhat aware
    o Minimally aware
    o Not aware
    o Other: ______________________
    Additional comments on Question 11:
Section 3 - Overall Impressions of Literacy Instruction

For these questions, please indicate your perceptions of this year's literacy blocks. Again, please include any additional information or explanation in the space provided below the question.

12. During this school year, how effective are literacy stations in promoting literacy learning for your students?
   (Mark only one oval.)
   o Very effective
   o Effective
   o Somewhat effective
   o Minimally effective
   o Not effective
   o Other: ______________________
   Additional comments on Question 12:

13. How would you rate your students' overall interest in reading?
   (Mark only one oval.)
   o Very high
   o High
   o Average
   o Low
   o Very Low
   o Not Sure
   o Other: ______________________
   Additional comments on Question 13:
14. How would you rate your students’ overall confidence in their own reading abilities?
   (Mark only one oval.)
   - Very high
   - High
   - Average
   - Low
   - Very Low
   - Not Sure
   - Other: _______________________
   Additional comments on Question 14:

15. How would you rate the overall effectiveness of your literacy instruction?
   (Mark only one oval.)
   - Very effective
   - Effective
   - Somewhat effective
   - Minimally effective
   - Not effective
   - Other: _______________________
   Additional comments on Question 15:

16. How would you rate your own satisfaction with your literacy blocks?
   (Mark only one oval.)
   - Very satisfied
   - Satisfied
   - Somewhat satisfied
   - Minimally satisfied
   - Not satisfied
   - Other: _______________________
   Additional comments on Question 16:
Appendix B
Teacher Interview Protocol

IFL’s rebranding in September of 2015 is represented in the body of the report; however, this protocol, used to collect data in the spring of 2015, reflects the language used to refer to the programs at that time. Please see footnotes for comparable language.

Background/Context

1. How many academic years have you taught using IFL’s TeacherMate Stations during your literacy block?

2. What type of professional development did you receive before implementing the TeacherMate Stations approach to literacy instruction in your classroom?

3. What type of professional development on the TeacherMate approaches to literacy instruction have you received since implementing it in your classroom?

4. How many days per week do you use the TeacherMate Stations in your classroom?

5. Approximately how much time do students spend working at each TeacherMate Station during an average literacy block?

Perceptions

6. How effective do you feel you are in teaching using the IFL systems?

7. In what ways, if any, has using IFL made you a more effective teacher?

8. How confident are you when providing small group instruction?

9. How confident are you that you differentiate instruction for every student?

* “TeacherMate” refers to the student and teacher portals.
** “TutorMate” refers to the online tutoring component of TutorMate.
10. During the course of the year, how confident are you that you know the strengths and weaknesses of every student’s reading abilities?

11. How would you describe students’ engagement in the TeacherMate stations?

12. Does the TeacherMate system play a role in your classroom management strategies? Please explain.

13. Do you see a connection between your use of TeacherMate and students’ reading confidence? Please explain.

14. Do you see a relationship between use of TeacherMate and students’ interest in reading? Please explain.

15. Let’s talk about TutorMate. Are the students’ engaged during the sessions?

16. Do they look forward to the sessions?

17. Does the tutoring impact their interest in coming to school and participating while at school?

18. How do these students act after the sessions are over?

19. Does receiving tutoring lead to better communication with other adults (e.g., parents, guardians, etc.)?

20. Does the tutoring impact students’ self-confidence?

21. How would you describe your overall level of satisfaction in the reading block when you use the IFL systems?

22. What do you perceive is the greatest benefit to using the TeacherMate and TutorMate approaches to literacy instruction?

23. Are there any challenges or frustrations when you are implementing the TeacherMate or TutorMate systems?

24. Any other thoughts or comments you would like to share about TeacherMate or TutorMate?

* "TeacherMate” refers to the student and teacher portals.
** "TutorMate” refers to the online tutoring component of TutorMate.
Appendix C
Classroom Observation Protocol

IFL’s rebranding in September of 2015 is represented in the body of the report; however, this protocol, used to collect data in the spring of 2015, reflects the language used to refer to the programs at that time. Please see footnotes for comparable language.

The observation protocol is used to record data gathered during observations of teachers using the IFL TeacherMate System. The purpose of the observations is to gain understanding of how teachers are implementing the TeacherMate System to provide small group literacy instruction targeted to students needs. The protocol consists of three parts: contextual data, observer notes on the literacy block, and a time log of specific aspects of the literacy block.

**Contextual Data**

- Observer: 
- School: 
- Date: 
- Teacher Observed: 
- Observation #: 
- Grade: 
- Start time of Literacy Block: 
- End time of Literacy Block: 
- # Students:
- IFL Teacher: _____Yes  _____No

* "TeacherMate” refers to the student and teacher portals.
** "TutorMate” refers to the online tutoring component of TutorMate.
**Observer Role and Focus**

The observer will gather data on two aspects of the literacy block: 1) Quality and consistency of classroom organization/managment and instruction, and 2) Quality of student task engagement. For each of these aspects of the literacy block, the observer will record notes on a variety of indicators and maintain a time log to record what happens in the 60-minute literacy block in segments of 3-4 minutes. Observable actions will be recorded as evidence for each indicator. Based on evidence, the observer will apply a 5-point rating scale to score teachers on each indicator ranging from exemplary to deficient immediately following the observation. Each rating is defined below. Additionally, the observer will record the minutes that teachers are on task working with an individual or a small group of students without interruption and that students are focused and on task, independently reading books, working with peers, and working on word work at differentiated levels.

Table 1: Rating Scale

<table>
<thead>
<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplary</td>
<td>Strong</td>
<td>Basic</td>
<td>Inadequate</td>
<td>Deficient</td>
</tr>
<tr>
<td>There is <em>compelling</em> evidence that an indicator is met</td>
<td>There is <em>sufficient</em> evidence that an indicator is met</td>
<td>There is <em>some</em> evidence that an indicator is met</td>
<td>There is <em>limited</em> evidence that an indicator is met</td>
<td>There is <em>minimal</em> evidence that an indicator is met</td>
</tr>
</tbody>
</table>

* "TeacherMate” refers to the student and teacher portals.
** “TutorMate” refers to the online tutoring component of TutorMate."
### Observer Notes

**Teacher Classroom Organization, Management & Instruction**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Evidence</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher utilizes IFL tools to teach literacy skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher uses stations to differentiate instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stations are set up for efficient transitions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station materials are well organized and accessible to students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher is aware of what students are doing in each station and how engaged they are</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher intervenes to support students’ learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher listens to individual students’ reading and takes notes on strengths and weaknesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher provides metacognitive instruction on reading strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher instructional time is tailored to needs of individual student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher regularly assesses individual student progress and knows student current reading levels and word and word-part knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher is on task and working with individual or a small group of students without interruption - <em>record times below</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overall Rating (mean):**

---

* "TeacherMate" refers to the student and teacher portals.
** "TutorMate” refers to the online tutoring component of TutorMate."
<table>
<thead>
<tr>
<th>Time Log of Minutes in the Literacy Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the timeline below record teacher time on task without interruption.</td>
</tr>
<tr>
<td>Start = S  Stop = P</td>
</tr>
<tr>
<td>Above minute 1 write the clock time when the literacy block begins and fill in each cell accordingly.</td>
</tr>
</tbody>
</table>

| Time | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 31   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 32   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 33   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 34   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 35   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 36   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 37   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 38   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 39   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 40   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 41   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 42   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 43   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 44   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 45   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 46   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 47   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 48   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 49   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 50   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 51   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 52   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 53   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 54   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 55   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 56   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 57   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 58   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 59   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 60   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Total minutes teacher is on task working with individual or a small group of students without interruption =

---

* "TeacherMate“ refers to the student and teacher portals.
** "TutorMate“ refers to the online tutoring component of TutorMate.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Evidence</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students transition to groups efficiently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students demonstrate self-regulation/ability to work independently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students engage with the learning materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students understand the reading activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced students help struggling students</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Log of Minutes in the Literacy Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3</td>
</tr>
<tr>
<td>4 - 6</td>
</tr>
<tr>
<td>7 - 10</td>
</tr>
<tr>
<td>11 - 14</td>
</tr>
<tr>
<td>15 - 18</td>
</tr>
<tr>
<td>19 - 21</td>
</tr>
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<td>22 - 25</td>
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<td>26 - 29</td>
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<td>30 - 33</td>
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<td>34 - 37</td>
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<tr>
<td>49 - 51</td>
</tr>
<tr>
<td>52 - 55</td>
</tr>
<tr>
<td>56 - 60</td>
</tr>
</tbody>
</table>

(Y = yes; N = no)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Evidence</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 90% of students are focused and on-task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are independently reading books at appropriate level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are effectively working with peers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are working on word work at differentiated levels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total minutes at least 90% of students are focused and on task =
Total minutes students are independently reading books at appropriate level =
Total minutes students effectively working with peers =
Total minutes students are working on word work at differentiated levels =

* "TeacherMate" refers to the student and teacher portals.
** "TutorMate" refers to the online tutoring component of TutorMate.
Appendix D
Components of the Benchmark Assessments

Rigby Reading Assessment

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Discrimination</td>
<td>Student must match pairs of identical upper- and lower-case letters, letter clusters, and words.</td>
</tr>
<tr>
<td>Auditory Discrimination</td>
<td>Student must select the picture of an object whose name begins with the same sound (phoneme) as a word spoken by the teacher (e.g. MILK and MAKE). This is a test of phonological awareness.</td>
</tr>
<tr>
<td>Letter Recognition</td>
<td>The teacher names a letter, and the student must find that letter in a set of letters.</td>
</tr>
<tr>
<td>Sounds-Letters: Consonants</td>
<td>Students must find a written word that begins with or ends with the same sound (phoneme) as a picture of an object.</td>
</tr>
<tr>
<td>Vocabulary in Context</td>
<td>Students read a sentence that is missing a word, and they must choose the best word to complete the sentence.</td>
</tr>
<tr>
<td>Reading Comprehension: Words</td>
<td>Student must find the word that corresponds to a picture.</td>
</tr>
<tr>
<td>Reading Comprehension: Sentences</td>
<td>Student must find the sentence that best describes a picture.</td>
</tr>
<tr>
<td>Reading Comprehension: Stories</td>
<td>Student must read a passage of text and answer explicit and implicit comprehension questions.</td>
</tr>
</tbody>
</table>

*Figure 4. This chart lists all subtests that comprise the Rigby Reading Assessments. Information gathered from “Reading Assessments” by SEDL, 2015, https://www.sedl.org/cgi-bin/mysql/rad.cgi?searchid=196*
### Developmental Reading Assessment (DRA)

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Engagement</td>
<td>Observe students’ reading habits, preferences, and goals.</td>
</tr>
<tr>
<td>Oral Reading Fluency</td>
<td>Analyze and record students’ oral reading rate and accuracy</td>
</tr>
<tr>
<td>Comprehension</td>
<td>Evaluate how well students understand what they read through oral and written responses to comprehension questions</td>
</tr>
</tbody>
</table>

*Figure 5. This chart lists all subtests that comprise the Developmental Reading Assessment. Information gathered from “Pearson Instructional Resources” by Pearson, 2015, http://assets.pearonschool.com/asset_mgr/current/201316/ReaBro121705DRA2_lo.pdf*