



Report for Baltimore County Public Schools:
Students and Teachers Accessing Tomorrow – Mid-Year Evaluation Report

Jennifer R. Morrison, Ph.D.
Steven M. Ross, Ph.D.
Alan J. Reid, Ph.D.

Center for Research and Reform in Education (CRRE)
Johns Hopkins University

February 26, 2015

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Executive Summary

The purpose of the present study was to conduct a preliminary evaluation of the Students and Teachers Accessing Tomorrow (S.T.A.T.) initiative in Baltimore County Public Schools (BCPS) in the fall of 2014. S.T.A.T. is a multi-year transformation of all district schools in order to ensure each school has an equitable, effective digital learning environment. S.T.A.T. places an emphasis on the transformation of teaching and learning including access to personalized, interactive digital curriculum and individual student and teacher devices. Key components of S.T.A.T., as reflected in the evaluation model (see Figure 1 presented in the main report), include professional development and the resulting impact on measurable outcomes that will then affect the goals of improving student achievement and preparing globally competitive students.

This mid-year report examined aspects of professional development and collected baseline data from Lighthouse schools pertaining to measurable outcomes. This report does not yet examine components within the evaluation model related to achievement of goals due to the formative nature of the report. The research questions focused on the professional development offered by the S.T.A.T. teacher and the early impact of professional development on measurable outcomes (e.g., classroom environment, teacher practice, digital content, student engagement, and P21 skills).

Professional Development through the S.T.A.T. Teacher Program

Overall, classroom teachers in both Lighthouse and non-Lighthouse schools were very positive towards the S.T.A.T. teacher within their schoolhouse. Classroom teachers reported participating in a variety of professional development opportunities and indicated that this support offered by S.T.A.T. teachers was highly beneficial. Most teachers indicated the S.T.A.T. teacher modeled effective instructional strategies and provided helpful resources in order to support their implementation of the S.T.A.T. initiative.

Baseline Data Related to Measurable Outcomes

- *Classroom environment:* Classroom observations revealed early indications of information and resources posted within the classrooms and room arrangements consistent with S.T.A.T. goals. Observations revealed few classrooms as having content displayed that supports independent thinking by students; however, a majority of the classrooms had supportive content material displayed.
- *Teacher practice:* Teachers were observed asking higher level questions in 70% of the classrooms observed. Lighthouse school classroom teachers were found to be slightly more likely to act as a coach or facilitator than offering direct instruction, but the emphasis was roughly equal during the fall visits.
- *Digital content:* The analysis of BCPS One usage by schools throughout the district revealed a substantially greater use of the resource by teachers in Lighthouse schools as compared with the rest of the district, as indicated by the average number of tiles created by teachers within these schools. Lighthouse schools were found to use BCPS One for assignments, repository content, and links most often.

- *Student engagement*: Early evidence emerged that there was substantial use of digital tools for learning within Lighthouse schools. While most classrooms reflected a seating arrangement that supported flexible grouping of students, devices were found to be used primarily for independent student work with little evidence of collaborative learning, student discussion, or problem solving observed.
- *P21 skills*: Classroom observations indicated that professional development had not yet impacted student development of P21 skills to a very strong degree, which is to be expected due to baseline data collected during early implementation of S.T.A.T. Observers did note the occasional presence of authentic contexts for learning, problem solving, inquiry learning, and project-based approaches to instruction.

Conclusion

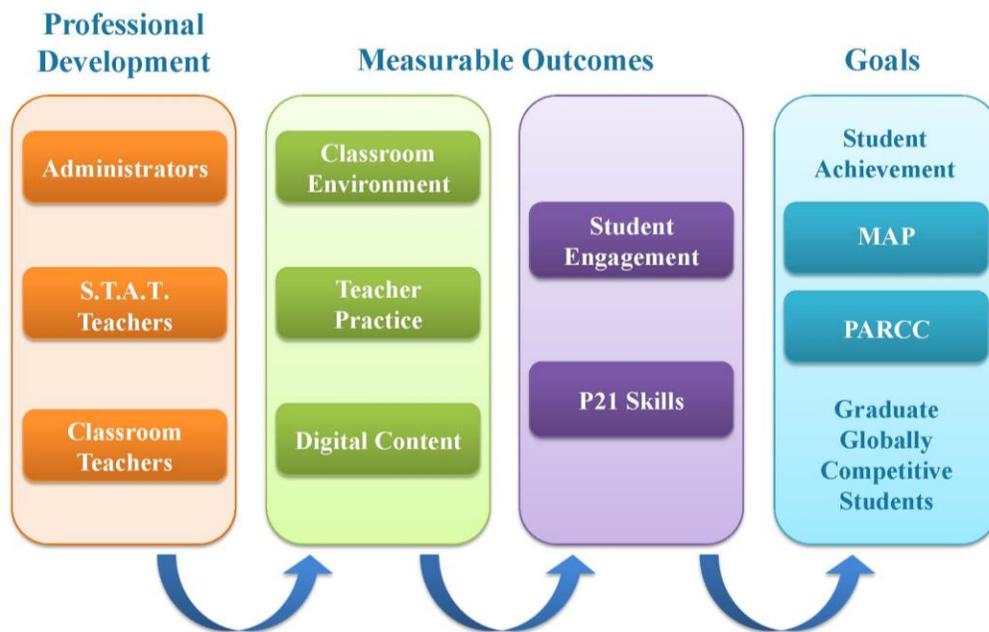
While this mid-year report contains early baseline data on the effects of S.T.A.T. evident in Lighthouse schools, it appears that these locations are beginning to transition to technology enhanced, learner-centered environments. Findings of the present study indicate evidence of the early effects of professional development on measurable outcomes (e.g., classroom environment, teacher practice, digital content, student engagement, and P21 skills). It is important to note that it would likely be unreasonable for teachers to employ all of the strategies contained in the observation instrument during these first few months of implementation. It is promising, though, that a few teachers are beginning to address higher-order and P21 instructional objectives. There are certainly areas of opportunity identified from these classroom observations, but there is early evidence that these classrooms are beginning to reflect the goal of S.T.A.T., which is to prepare globally competitive students with 21st century skills. The S.T.A.T. teacher program is perceived by classroom teachers within both Lighthouse and non-Lighthouse schools as a valuable asset to assist in the transformation of BCPS schools.

S.T.A.T. Mid-Year Evaluation Report

The purpose of the present study was to conduct a preliminary evaluation of the Students and Teachers Accessing Tomorrow (S.T.A.T.) initiative in Baltimore County Public Schools in the fall of 2014. The purpose of S.T.A.T. is to provide personalized learning for every student through a redesign of curriculum in the core content areas, key pedagogical shifts to both a blended-learning and a learner-centered environment, the use of BCPS One, individual student devices, wireless and broadband infrastructure, and ten Lighthouse schools to serve as models for later S.T.A.T. implementation.

The longitudinal evaluation of S.T.A.T. will focus on the aforementioned key S.T.A.T. components and will examine aspects of the S.T.A.T. evaluation model (see Figure 1).

Figure 1. S.T.A.T. evaluation model.



The present report, however, was restricted to examining practices within the ten Lighthouse schools for the purpose of addressing formative needs by providing preliminary evidence and recommendations for program improvement. Specifically, this mid-year report examined aspects of professional development and measurable outcomes and does not yet examine components within the evaluation model related to achievement goals due to the formative nature of the report. Thus, the following evaluation questions were examined:

1. What is the impact of S.T.A.T. on the classroom environment?
2. What is the impact of S.T.A.T. on student engagement and P21 skills?
3. What is the impact of S.T.A.T. on teacher practices?

4. How is the S.T.A.T. teacher being utilized? What are the roles and best practices of the S.T.A.T. teacher?
5. What is the level of access to digital content within classrooms?

Method

Participants and Design

Participants included the ten Lighthouse schools (see Table 1). Three of the Lighthouse schools received Maryland innovation grants and were selected to participate. Six additional Lighthouse schools applied to participate. One school, Mays Chapel, was a new school that opened in fall 2014 as a Lighthouse school.

Table 1. Characteristics of Lighthouse school enrollment for the 2014-2015 school year.

School name	S.T.A.T. Grades	Total Enrollment	Race/Ethnicity			Free and Reduced Price Meals (FARMS)	Limited English Proficiency (LEP)
			White %	Black %	Other ¹ %		
Chase Elementary	1-3	399	56%	30%	15%	62%	0%
Church Lane Elementary	1-3	499	1%	88%	11%	63%	3%
Edmondson Heights Elementary	1-3	566	6%	79%	15%	68%	5%
Fort Garrison Elementary	1-3	369	82%	9%	8%	8%	2%
Halstead Academy	1-3	526	4%	88%	8%	76%	2%
Hawthorne Elementary	1-3	605	31%	46%	23%	74%	2%
Joppa View Elementary	1-3	731	55%	19%	26%	30%	5%
Lansdowne Elementary	1-3	491	51%	23%	26%	74%	5%
Mays Chapel Elementary ²	K-5	590	52%	16%	33%	28%	7%
Rodgers Forge Elementary	1-3	436	78%	3%	19%	5%	3%

¹ “Other” includes the following race/ethnicity categories: American Indiana/Alaska Native, Asian, Hispanic/Latino, Native Hawaiian or Other Pacific Islander, and Two or More Races.

²School opened in fall 2014

It is important to note that overall, the Lighthouse schools have a greater percentage (50%) of FARMS eligible students as compared with the rest of the schools in the Baltimore

County Public Schools (BCPS) system (44%). Specifically, six of the ten Lighthouse schools have a greater percentage (>60.0%) of FARMS eligible students than the remainder of the schools within BCPS.

In addition, whereas the Lighthouse schools together have a 40% concentration of White students and a 41% concentration of Black students, the remaining schools in the BCPS System have a concentration of 42% White and 39% Black students. Four of the ten Lighthouse schools have a greater percentage of Black students than the remaining schools in the district.

Data Sources and Instruments

Observation of Active Student Instruction in Schools of the 21st Century (OASIS-21). The classroom observation instrument (see Appendix A) was co-developed by the Center for Research and Reform in Education (CRRE) and BCPS. The instrument integrated district-wide professional development goals for classroom instruction with S.T.A.T.-specific interests and goals regarding technology applications of teaching and learning. The observations focused on (a) student engagement, (b) the type of instructional strategies employed, and (c) how and to what degree technology devices are employed.

Observers received training on the instrument in a group session and then completed practice observations to ensure ratings were comparable to the experienced observers. Observers were provided with a reference guide (see Appendix B) containing definitions of terms and examples of the strategies.

The procedure employed involved trained observers visiting four randomly selected Lighthouse school classrooms for 20 minutes each. The observers completed individual ratings of the frequency/pervasiveness of particular practices, as well as classroom environment indicators (e.g., room arrangement, information and resources available, etc.). With the exception of two classroom environment items, observation items were recorded via a five-point scale that ranged from (1) Not Observed to (5) Extensively Observed.

A total of 40 classrooms were observed in December 2014, resulting in 800 minutes of direct classroom observations conducted in the ten Lighthouse schools.

S.T.A.T. Teacher Program Survey. The S.T.A.T. Teacher Program Survey was accessed by a total of 3,465 teachers in both Lighthouse and non-Lighthouse schools. The completion rate of the survey was 87.6% by Lighthouse teachers ($n = 173$) and non-Lighthouse teachers ($n = 2,865$) combined. The survey (see Appendix C), developed by Baltimore County Public Schools, consisted of ten closed-ended items focusing on the accessibility, support, and professional development opportunities provided by the S.T.A.T. teacher. In addition, two open-ended items solicited feedback on the perceived successes and opportunities of the S.T.A.T. Teacher Program.

Digital Content Usage. Content usage data was measured in several ways. Units defined as ‘tiles’ measured overall engagement. A tile delivers digital content to students. Tiles can contain both a) teacher created or identified electronic files, wikis, urls, repository content,

assignments, and tests and quizzes and b) district provided electronic curriculum materials, including files, URLs, and repository content. Teachers were able to create tiles for the whole class, small groups of students or individuals. This approach allowed teachers to personalize instruction by creating different tiles with different content for different learner needs. The number of logins by students, teachers, and parents was also tracked. Taken together, these data describe the digital content usage.

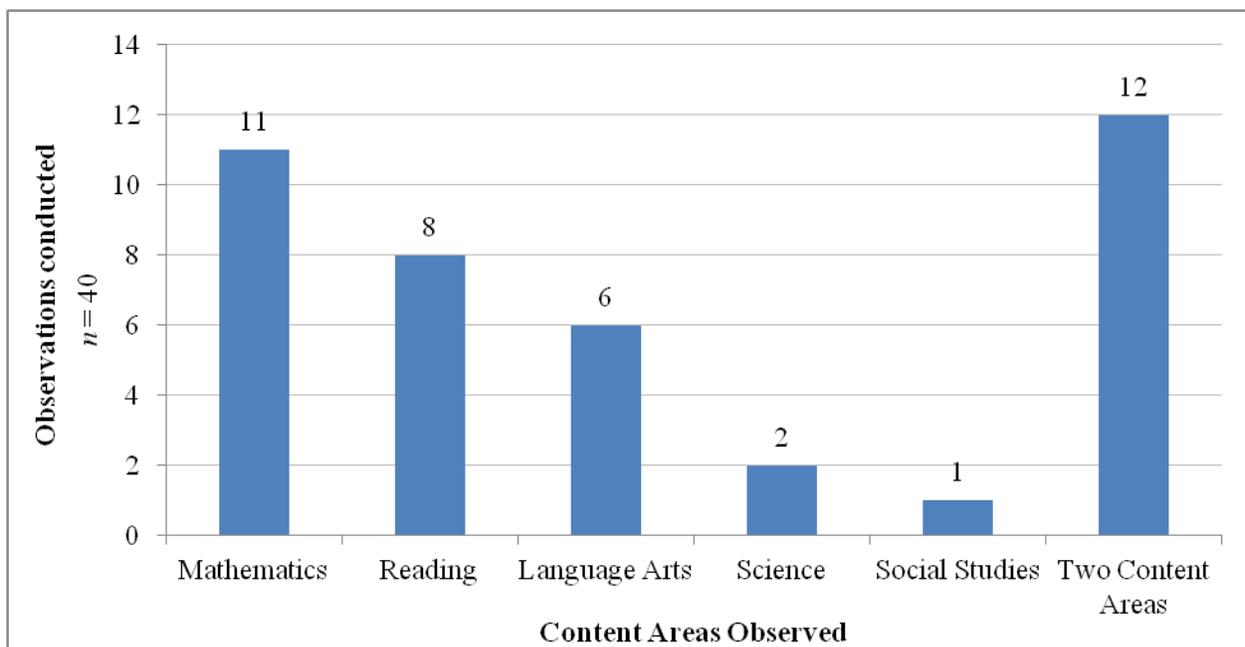
Results

This section describes the results from classroom observations, teacher perception survey, and digital content usage.

Classroom Observations

The following section presents initial results of the classroom observations ($n = 40$) conducted in the ten Lighthouse schools. Five content areas were observed during the observations (see Figure 1). Instruction in a combination of two content areas was observed most frequently during the observations (30.0%). During the observation of instruction of a singular content area, mathematics instruction accounted for the majority (27.5%) of the content areas.

Figure 1. Frequency of content areas observed during classroom observations.

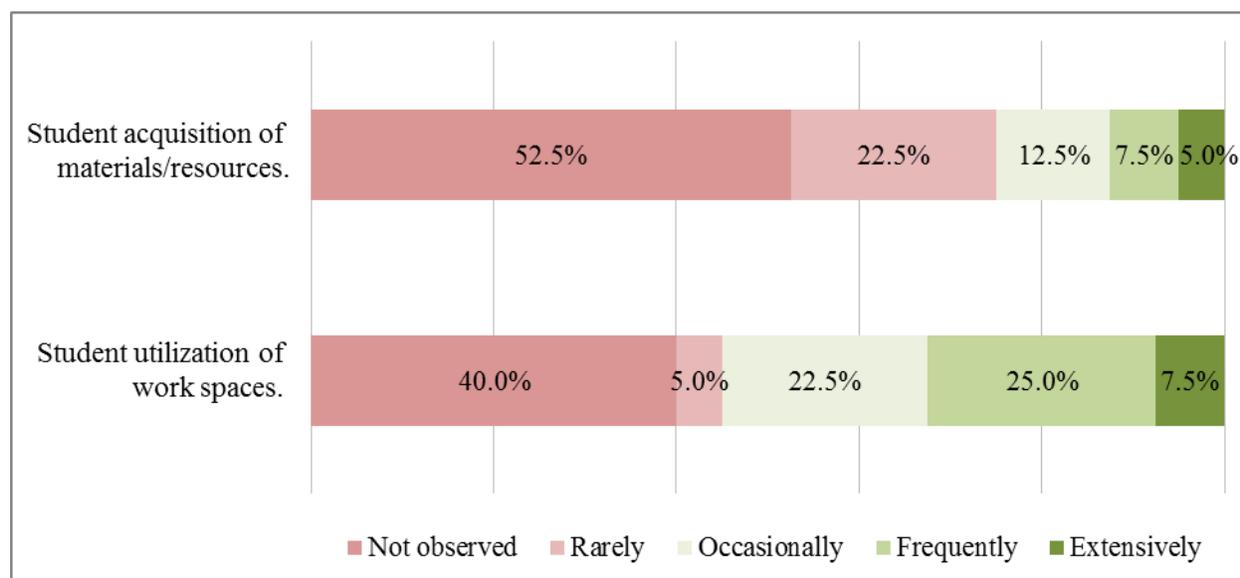


Readers should be cautious in making any conclusions based on the results of the observations as only four classrooms within the schools were observed, and the observations served as only a “snapshot” of classroom practices for a brief amount of time. The fall observations serve as baseline data for later comparisons. The frequency of the extent each OASIS-21 item was observed is presented in Appendix D.

Classroom environment. Five of the observation items pertained to the classroom environment, including information displayed in the classroom and student activities. Observers documented the room arrangement in the classrooms observed. Nearly all (87.5%) of classrooms consisted of desks arranged in groups. The remainder of classrooms had desks arranged in a combination of groups and rows. A minority of classrooms (12.5%) were found to have an extensive amount of information and resources to support independent thinking displayed in the classroom, whereas the majority (52.5%) did not have this information displayed. The majority (70.0%), though, had content specific to the content area being taught displayed, and 27.5% of classrooms had lesson-specific content displayed on the walls.

One of the observation items pertained to students' movement within the classroom (see Figure 2). Specifically, the item assessed whether students acquired needed materials for a task or project without teacher direction. As displayed below, most students (75.0%) were not observed or rarely observed independently acquiring materials and resources. A second item assessed student utilization of different workspaces, that is, whether students used different areas for such activities as collaboration, receiving direct instruction, or engaging in independent work. Students were utilizing different work spaces at various levels in 60.0% of the classroom observations. Students remained in a single location for 40.0% of the classroom observations.

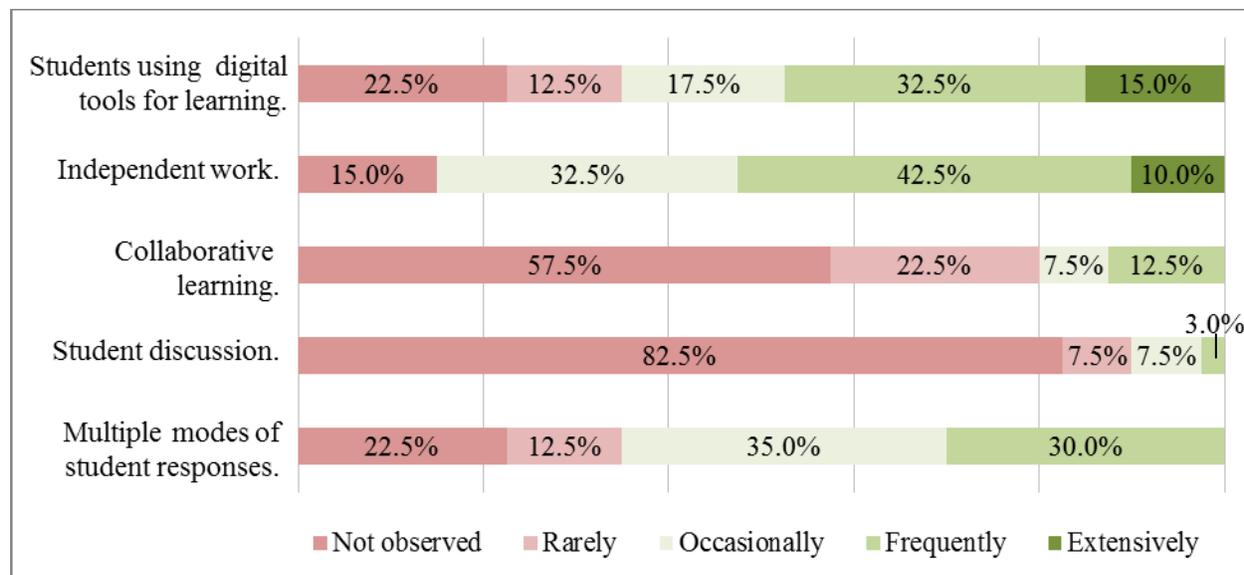
Figure 2. Frequency of extensiveness observed on OASIS-21 classroom environment items.



Student engagement. Observers rated five OASIS-21 items related to student engagement during classroom observations. In nearly half of the classrooms observed, students were using digital tools for learning to a frequent or extensive degree (see Figure 3). Students were mostly observed engaging in independent work (52.5% frequently or extensively), followed by collaborative learning (12.5% frequently or extensively). One of the items pertained to student discussion, specifically whether students discussed a prompted or higher-level topic in pairs, groups, or within the whole class. Student discussion was observed rarely, with 82.5% of observations indicating this practice was not observed. Multiple modes of student responses,

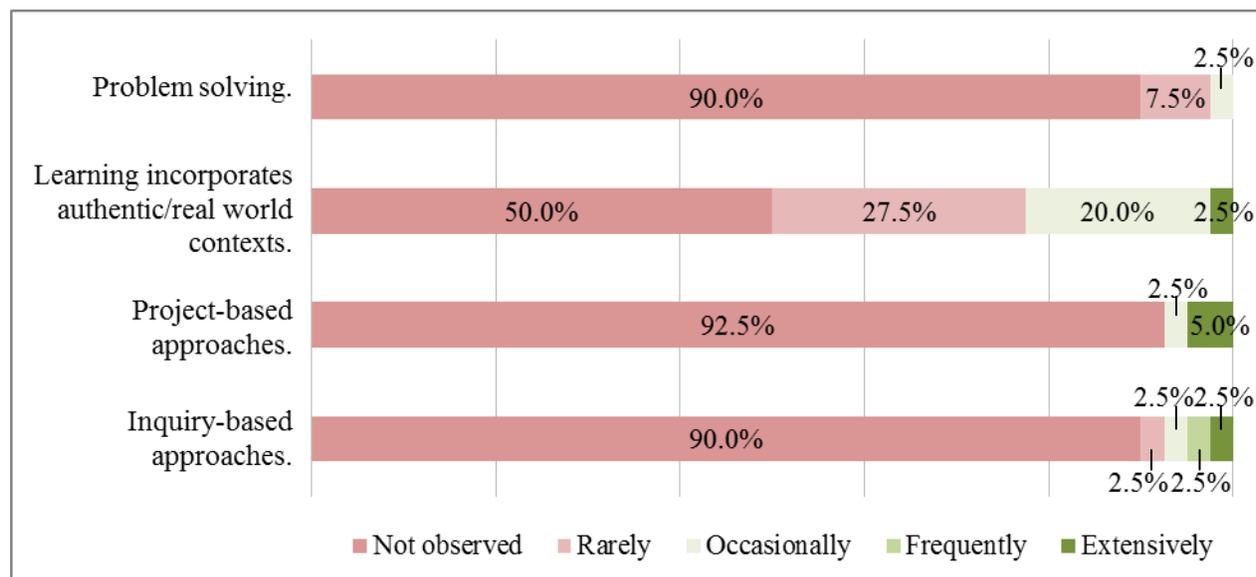
such as verbal, written, physical, or through technology were observed frequently in 30.0% of the classrooms, and occasionally in 35.0% of the classrooms.

Figure 3. Frequency of extensiveness observed on OASIS-21 student engagement items.



P21 skills. Four of the observation instrument items assessed P21 skills (see Figure 4). The first item related to problem solving, where students used multiple resources, used resources effectively, and engaged in critical thinking in order to solve a problem. In the majority of classrooms (90.0%), students were not perceived as engaging in problem solving. Further, learning that incorporated authentic or real world contexts was observed only to a minor extent (22.5% of the classrooms). A third item pertained to inquiry-based approaches to instruction, which involved student exploration of a question or topic in-depth, develop and ask further questions, and conduct research and problem-solve in order to answer the questions. A related item assessed project-based approaches to instruction, where the instructional focus is centered on an inquiry or question and students may produce a tangible product as a result of the approach, such as a research report or question. During these baseline observations, inquiry-based and project-based approaches to instruction were observed to a similar extent (7.5% at least occasionally observed). For clarification purposes, “occasionally observed” indicates that the approach received a moderate emphasis in class or was observed for a minimal amount of time.

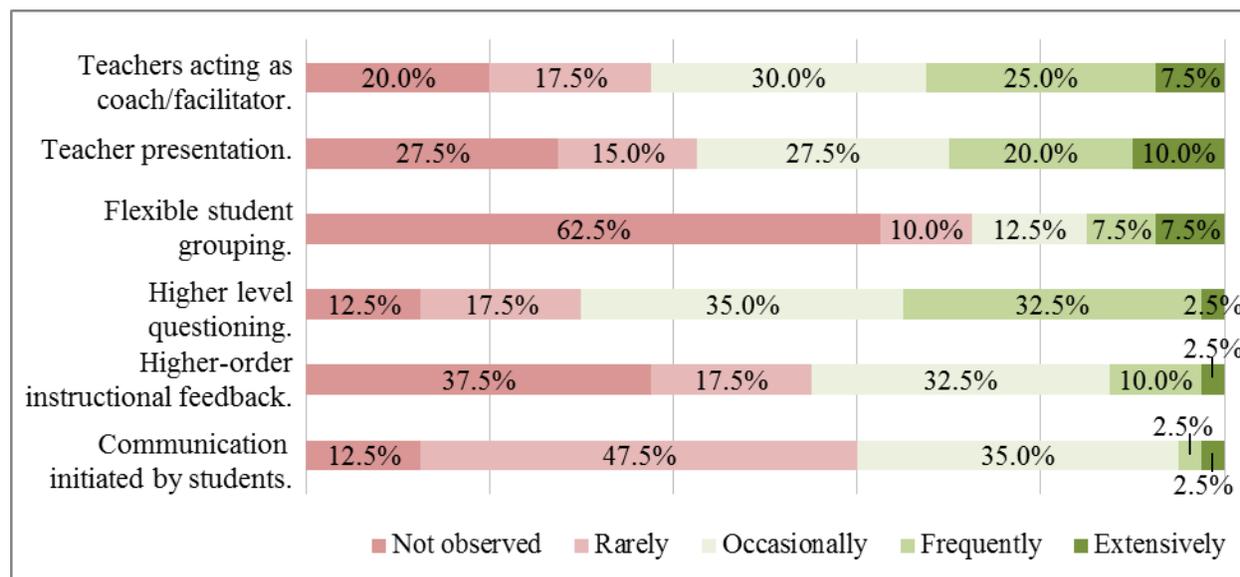
Figure 4. Frequency of extensiveness observed for OASIS-21 items related to P21 Skills.



Teacher practice. Observers also documented the practices exhibited by teachers (see Figure 5). Teachers were viewed acting as a coach or facilitator at a more frequent extent (62.5% at least occasionally) than presenting instruction to students (57.5% at least occasionally). Flexible grouping of students based on student ability or task needs, though, was observed nearly a third (27.5%) of the time at least on an occasional level.

Teachers were observed asking students higher-level questions in the majority of observations (70.0% at least occasionally), though higher-order instructional feedback to students was exhibited to a lesser extent (45.0% at least occasionally). Student-initiated communication was observed in less than half of classrooms (40.0% at least occasionally).

Figure 5. Frequency of extensiveness observed on OASIS-21 teacher practice items.



Classroom Teacher Perceptions of the S.T.A.T. Teacher Program Survey

The following section presents results obtained from the S.T.A.T. Teacher Program Survey administered to classroom teachers in both Lighthouse and non-Lighthouse schools. All participants' survey responses were analyzed and an independent samples *t*-test was used to determine whether there were statistically significant differences between participant responses on Likert-type items from teachers in Lighthouse schools as compared with teachers in non-Lighthouse schools. Since not all participants completed the teacher survey in its entirety, responses that were included in the analysis reflect only those who fully completed a set of survey items. As such, sample sizes differed for each of the survey items. Results are presented below. The descriptive statistics and frequency of responses for the close-ended survey items are presented in Appendix E.

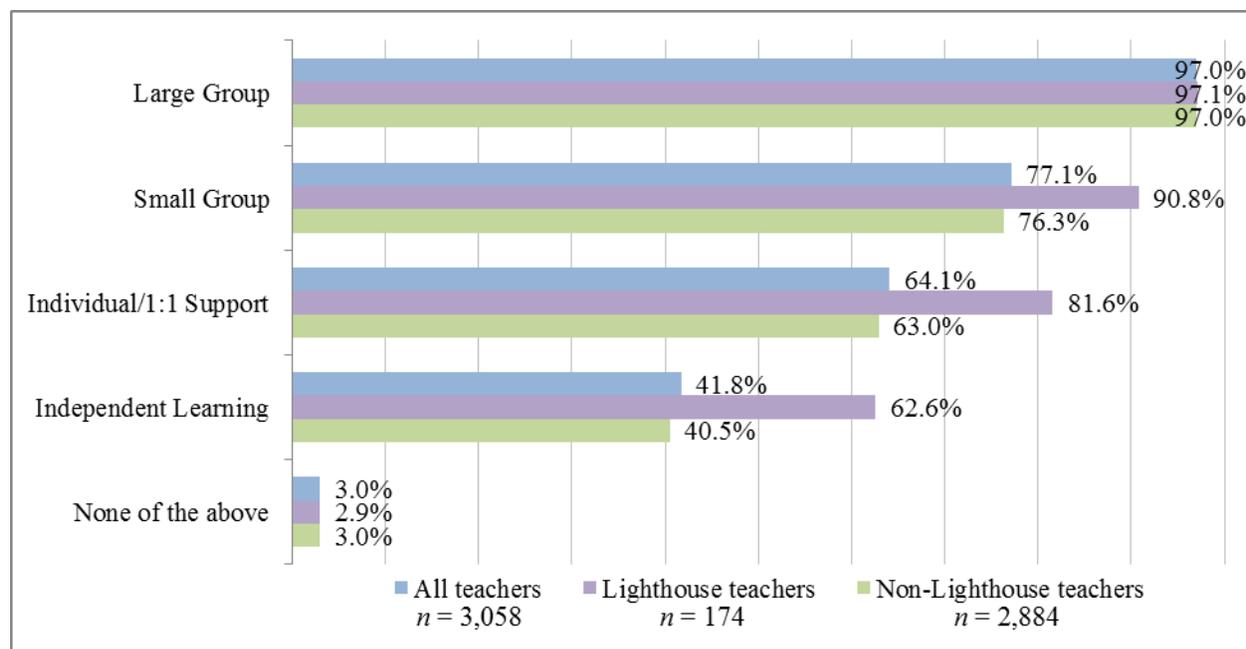
Professional development. Classroom teachers indicated which, if any, modes of professional development they participated in as facilitated by their school's S.T.A.T. teacher (see Figure 6). All classroom teachers reported the greatest frequency (97.0%) of participation in large group professional development, such as faculty meetings, followed by small group instruction (77.1%) including grade level, team, or content area meetings. Significant differences were observed in participation in professional development modes between classroom teachers within Lighthouse schools as compared to those in non-Lighthouse schools, $\chi^2_{R-S} (N = 8654) = 96.60, p < .001$.

- Lighthouse school classroom teachers (90.8%) participated to a greater extent in small group professional development opportunities as compared with non-Lighthouse teachers (76.3%).
- Lighthouse school classroom teachers (81.6%) participated in more individual/one-on-one support opportunities than did their counterparts in non-Lighthouse schools (63.0%).

- Lighthouse school classroom teachers (62.6%) participated in more independent learning opportunities than non-Lighthouse school teachers (40.5%).

In addition, a small amount of Lighthouse classroom teachers ($n = 5$) and non-Lighthouse classroom teachers ($n = 86$) indicated they had not participated in any professional development modes facilitated by their S.T.A.T. teacher.

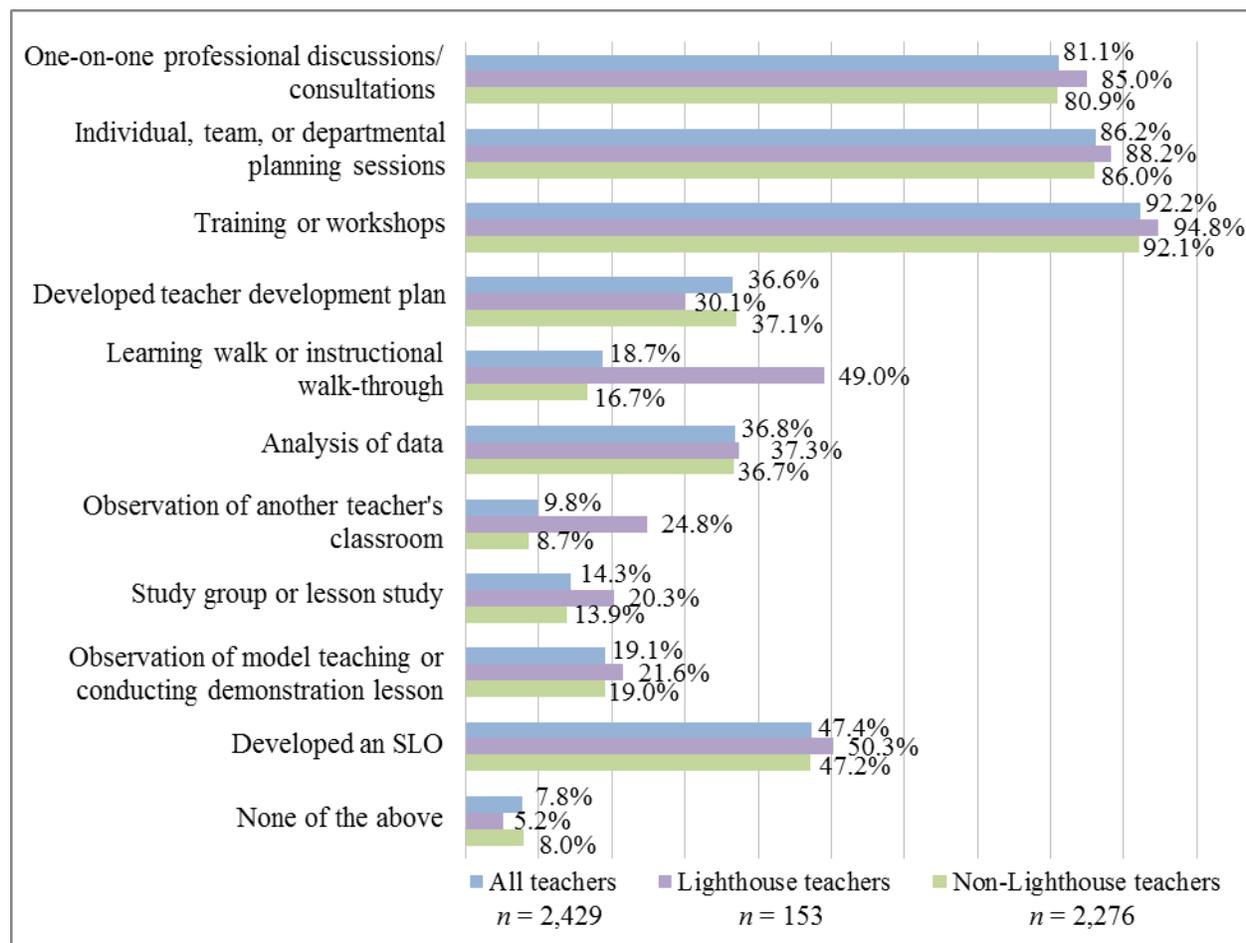
Figure 6. Frequency of classroom teacher participation in professional development modes.



Classroom teachers also reported their participation in various learning opportunities supported by the S.T.A.T. teacher (see Figure 7). Overall, classroom teachers participated in training workshops facilitated by the S.T.A.T. teacher more than any other type. Classroom teachers also indicated that they participated in individual, team, or departmental planning sessions and one-on-one professional discussions or consultations with their S.T.A.T. teacher to a fairly high extent. Significant differences were observed in teacher participation in learning opportunities between those in Lighthouse schools as compared to those in non-Lighthouse schools, $\chi^2_{R-S} (N = 10,932) = 256.13, p < .001$:

- Participation in learning walk or instructional walk-throughs was greater by Lighthouse classroom teachers (49.0%) than non-Lighthouse classroom teachers (16.7%).
- Observations of another teacher's classroom occurred to a greater extent by Lighthouse teachers (24.8%) as compared with non-Lighthouse teachers (8.7%).
- Participation in study group or lesson study happened more frequently by Lighthouse teachers (20.3%) as compared with non-Lighthouse teachers (13.9%).
- More non-Lighthouse teachers (37.1%) participated in the development of teacher development plans with the S.T.A.T. teacher than did Lighthouse teachers (30.1%).

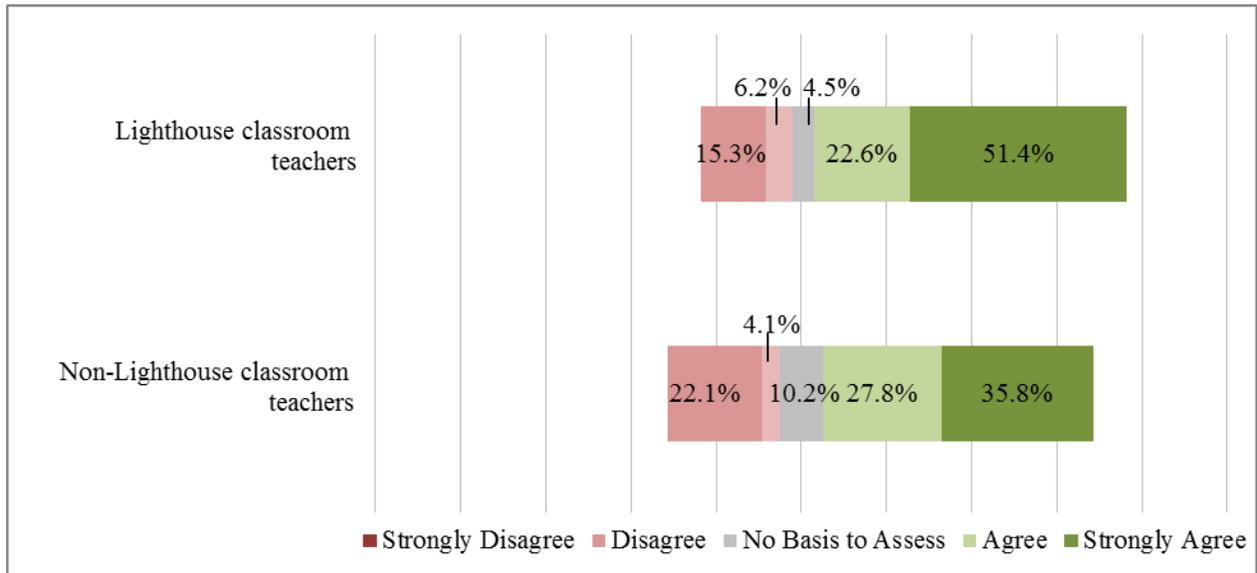
Figure 7. Frequency of participation by classroom teachers in various professional learning opportunities as facilitated by the S.T.A.T. teacher.



Instructional support. Classroom teachers responded to survey items assessing the instructional support provided by S.T.A.T. teachers. Overall, 81.3% of classroom teachers indicated agreement (54.4% strongly agreed) that their S.T.A.T. teacher models effective instructional strategies and 81.3% agreed (55.5% strongly agreed) that their S.T.A.T. teacher provided or directed them to useful resources. There were no significant differences between the agreement of Lighthouse teachers and non-Lighthouse teachers.

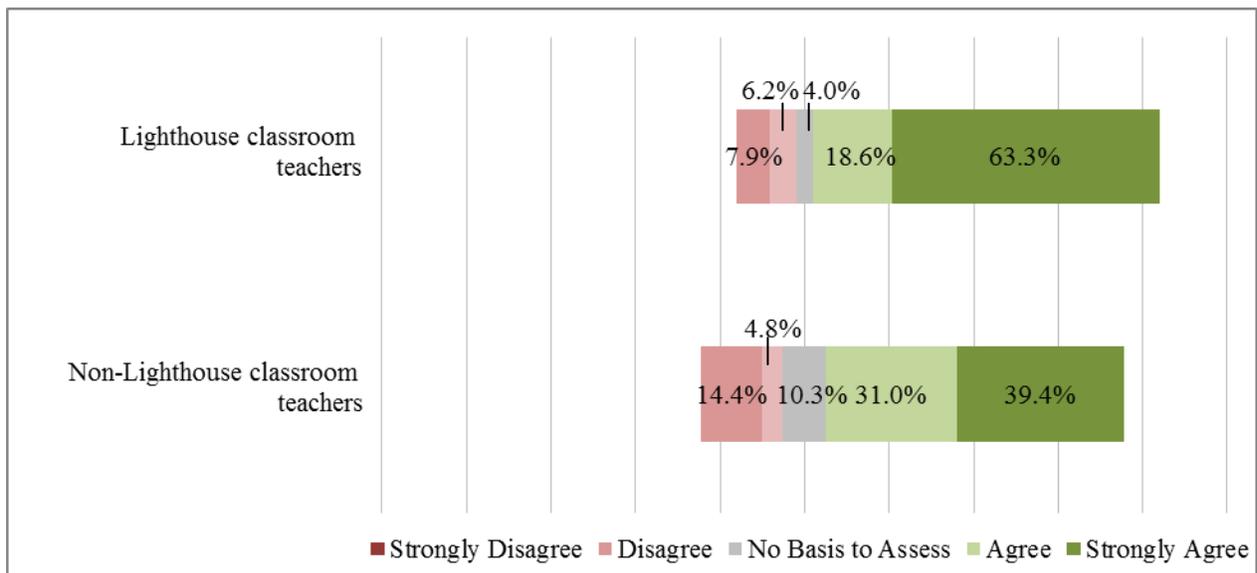
In terms of assistance in developing personalized learning, 75.9% of Lighthouse and non-Lighthouse classroom teachers agreed (48.3% strongly agreed) that their S.T.A.T. teacher supported the use of data to meet individual student needs. Responses between these two groups were less consistent towards perceptions of support in developing learner-centered environments (see Figure 8). The Lighthouse and non-Lighthouse classroom teachers (74.0% and 63.6%, respectively) indicated agreement that a learner-centered environment was more evident as a result of support from the S.T.A.T. teacher. The difference in the level of agreement between classroom teachers in Lighthouse schools ($M = 4.28$, $SD = 1.19$) and those in non-Lighthouse schools ($M = 4.04$, $SD = 1.21$) was statistically significant, $t(2438) = 2.37$, $p = .02$.

Figure 8. Frequency of classroom teacher responses to the survey item assessing level of agreement that the S.T.A.T. teacher supports the development of a learner-centered environment.



There was also a statistically significant difference between these groups of classroom teachers on the support they have received for integrating technology into their classrooms (see Figure 9). Those in Lighthouse schools were more likely to agree (81.9% agreed or strongly agreed, $M = 4.40$, $SD = 1.15$) that the S.T.A.T. teacher has provided coaching on technology integration as compared with classroom teachers in non-Lighthouse schools (70.4% agreed or strongly agreed, $M = 4.05$, $SD = 1.20$), $t(2677) = 3.60$, $p < .01$.

Figure 9. Frequency of classroom teacher responses to the survey item assessing level of agreement that the S.T.A.T. teacher provides coaching on technology integration.



Accessibility, follow-through, and confidentiality. The majority of respondents in both groups agreed that the S.T.A.T. teacher was accessible, followed through on requests, and maintained confidentiality. The difference between classroom teachers in Lighthouse schools and non-Lighthouse schools was not statistically significant. Overwhelmingly, 91.6% of respondents from both groups agreed (65.2% strongly agreed) the S.T.A.T. teacher was easily accessible. Further, most (88.6%) classroom teachers agreed (68.5% strongly agreed) that their S.T.A.T. teacher follows through on requests. In addition, 83.3% agreed (59.6% strongly agreed) that they trusted their S.T.A.T. teacher to maintain confidentiality. Though not a statistically significant difference, Lighthouse teachers ($M = 4.51$) were more likely to agree with this survey item than non-Lighthouse teachers ($M = 4.38$).

In addition to the close-ended survey items, teachers were asked to provide comments about what is working in the S.T.A.T. Teacher Program and how the program could be improved. Overwhelmingly, teachers viewed the S.T.A.T. program favorably and the following themes emerged during the analysis of open-ended responses.

- **Professional development opportunities offered by the S.T.A.T. teachers were viewed as highly beneficial.** Respondents indicated that while instructional resources provided by the S.T.A.T. teacher were useful, teachers benefited even more from professional development sessions and one-on-one consultations delivered at each school. Teachers commented that the S.T.A.T. position requires accessibility and responsiveness; professional development was preferred in a face-to-face setting, where the S.T.A.T. teacher was present and interacted with the faculty. As one teacher noted, “I don't need ‘helpful tips’ emailed to me every day or so. I need the S.T.A.T. teacher here full-time to help me...” Others said the professional development opportunities offered by the S.T.A.T. teacher worked best in small group settings or in specific departments and content areas. Some participant comments follow:

The workshops and feedback are very helpful.

Our S.T.A.T. teacher provides our faculty with useful information at our faculty meetings.

[The S.T.A.T. teacher] is very supportive and reliable...She has put on wonderful professional development meetings that have helped greatly.

[The S.T.A.T. teacher] has put on wonderful professional development meetings that have helped greatly.

- **Respondents identified common qualities of effective S.T.A.T. teachers: accessible, responsive, knowledgeable, and supportive.** Respondents noted that S.T.A.T. teachers exhibited similar qualities. First and foremost, teachers were appreciative of the accessibility and responsiveness of the S.T.A.T. teacher. Although most S.T.A.T. positions are only part-time at each school, many commented that the S.T.A.T. teacher worked tirelessly and responded quickly to all issues ranging from device troubleshooting to instructional and pedagogical strategies. It was identified

that the S.T.A.T. teachers also were extremely knowledgeable in terms of technological resources as well as many content areas. As one respondent commented, the S.T.A.T. teacher's expertise "goes far beyond that [of] an exclusivity of technology-based support." Finally, teachers noted the supportive attitudes of the S.T.A.T. teachers; their assistance was encouraging, positive, and not condescending. This attitude fostered an environment of inclusivity where the majority of teachers did not feel intimidated or embarrassed to ask questions or seek help. Some additional comments are offered below.

I appreciate that she is so knowledgeable about the resources, and is able to show and encourage us to do more and try more with the technology, without ever seeming condescending or patronizing.

Our S.T.A.T. teacher is accessible and open. She knows about a wide variety of tools to help us choose the best for our instructional needs.

Our S.T.A.T. is extremely knowledgeable and helpful for both instruction and maintenance of equipment.

The respondents also offered several valuable suggestions for improvement.

- The S.T.A.T. position should be full-time rather than part-time. Schools would benefit from multiple S.T.A.T. teachers.** Although it was acknowledged that this recommendation is a more costly approach, it was suggested that the S.T.A.T. teacher was being pulled in too many directions and this impacted his or her effectiveness overall. The primary duty of the S.T.A.T. position is to support teaching staff through integrated technology, but this was compromised at times when the S.T.A.T. teacher had to travel between several schools, was occupied in meetings, and was asked to assist the administrative staff with non-teaching related technology issues. Consequently, the S.T.A.T. position loses effectiveness when spread too thinly and resulted in teachers being hesitant to request one-on-one meeting time with the S.T.A.T. teacher, knowing how busy he or she was. Notably, respondents concluded that the S.T.A.T. position goes beyond just IT support; it should focus on instructional technology and pedagogical strategies. When the S.T.A.T. teacher becomes consumed with troubleshooting technology, his or her instructional expertise is diminished and the position becomes less effective. The consensus among teachers was that the S.T.A.T. position requires a full-time presence in a single school, and that the focus of the position should remain on instructional support for faculty rather than technological support. Some comments included:

The S.T.A.T. teacher has a very hard job. I think that she has too much for any one person. It would be helpful to have another person.

It appears that much of her time is spent troubleshooting tech problems throughout the building. We need two of her!!

Invaluable resource - I wish each school had more than one!

- S.T.A.T. teacher roles should be assistive rather than evaluative. In many cases, the role of the S.T.A.T. teacher was not clearly defined.** While survey results were generally favorable to the S.T.A.T. teacher program, several respondents indicated that the S.T.A.T. teacher was viewed more as an administrative authority instead of a supportive resource. Some classroom teachers reported that they were embarrassed to seek input from the S.T.A.T. teacher because his or her input was mistaken for criticism, and in some cases, this resulted in a distrust of the S.T.A.T. teacher. Respondents also expressed concern for confidentiality, and that this prevented their willingness to ask for help. One comment described the S.T.A.T. teacher as a “principal’s assistant” position. Further, some responses noted that it was unclear whether to direct questions to the IT support staff or the S.T.A.T. teacher. It was recommended that administration clearly delineates the roles and responsibilities of the S.T.A.T. teacher. The individual serving in the S.T.A.T. role should communicate information in an unassuming and non-critical manner in a confidential setting.

[The S.T.A.T. teacher] tends to be quite negative and critical of teacher decisions. She is not an evaluative member of the administration, and should not be taking on those types of roles unless she is asked by a teacher or administrative member.

Oftentimes, I feel as though the S.T.A.T. teacher at our school takes on administrative duties... Perhaps providing a clear explanation of what the S.T.A.T. teacher's duties actually are would help.

I'm not sure if the S.T.A.T. teacher serves in an evaluative capacity. I was under the impression that the role was one of assistance only.

Offer clear guidelines and responsibilities for the S.T.A.T. teacher.

- S.T.A.T. teachers should provide specific, concrete examples for different content areas.** Respondents expressed a desire to see more targeted modeling of technology and lesson-planning specific to their content areas. Though the general S.T.A.T. training sessions were helpful, participants commented that they would be better served by training and resources that focused specifically on their content areas. Numerous comments suggested that S.T.A.T. teachers be allowed to teach students so that they have a better sense of what is needed and what can be accomplished realistically.

Teachers want content rich professional development infused with a variety of pedagogical approaches. The S.T.A.T. program just provides generic professional development about the newest trend or buzzword but cannot effectively demonstrate how that strategy can work with existing curricula in multiple subject [content] areas.

I would appreciate specific examples and ideas for my specific content area.

I would like to know how I can implement this approach within my department.

Each department chair could provide the S.T.A.T. teacher with an idea of how to implement these programs into the department/curriculum.

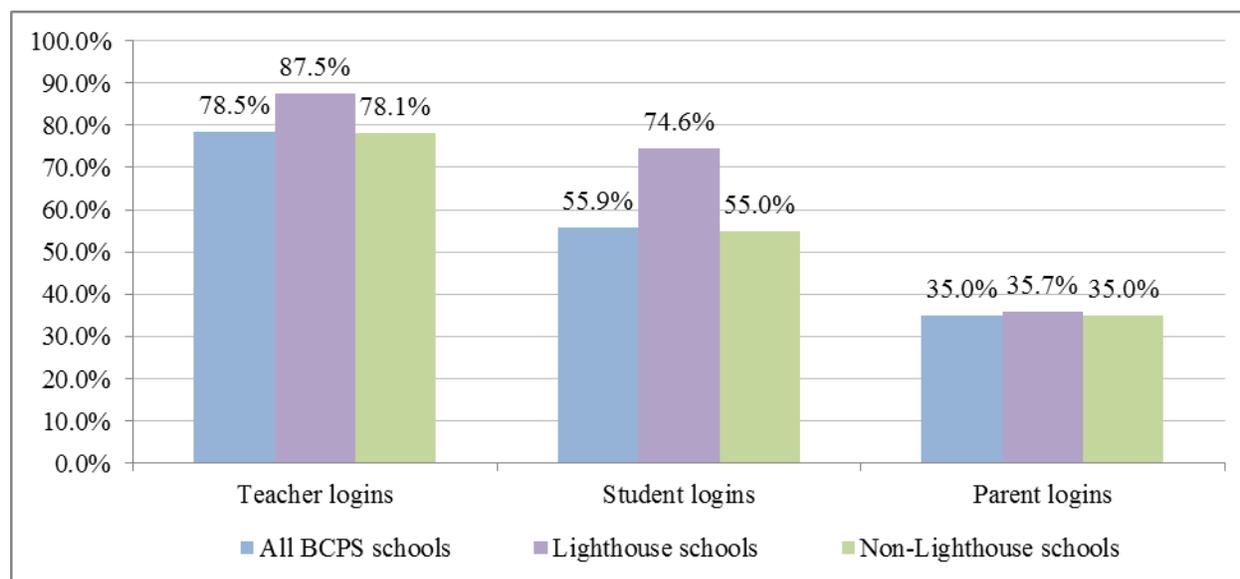
Digital Content Usage

Usage data for BCPS One was provided by Engrade and analyzed to determine use by teachers, students, and parents. Data consisted of access information, such as the number of user accounts and user logins by teachers, students, and parents, as well as tile engagement, which related to the specific types of content created by teachers and viewed by students.

Access. In terms of district-wide users, 11,356 teachers, 113,694 students, and 113,694 parents had user accounts created to access BCPS One from August 27 through December 19, 2014 throughout the district. The quantity of student and parent accounts created is identical due to the default parent account created by Engrade for each student and may not reflect actual parent access of BCPS One. In addition, the quantity of student accounts created is greater than the quantity of students enrolled in the district; the value reflects all student accounts and includes students that may not currently be enrolled.

Teachers had the greatest percentage of users who accessed their accounts during this time period, followed by students, and then parents (see Figure 10). Overall, Lighthouse schools had a greater percentage of teacher and student logins to user accounts than did non-Lighthouse schools.

Figure 10. Percentage of users that logged into BCPS One from 8/27/2014 to 12/19/2014.



Tile engagement. Data were also provided in order to examine how BCPS One was used by teachers and students. Teachers used BCPS One in order to create categories of tiles such as:

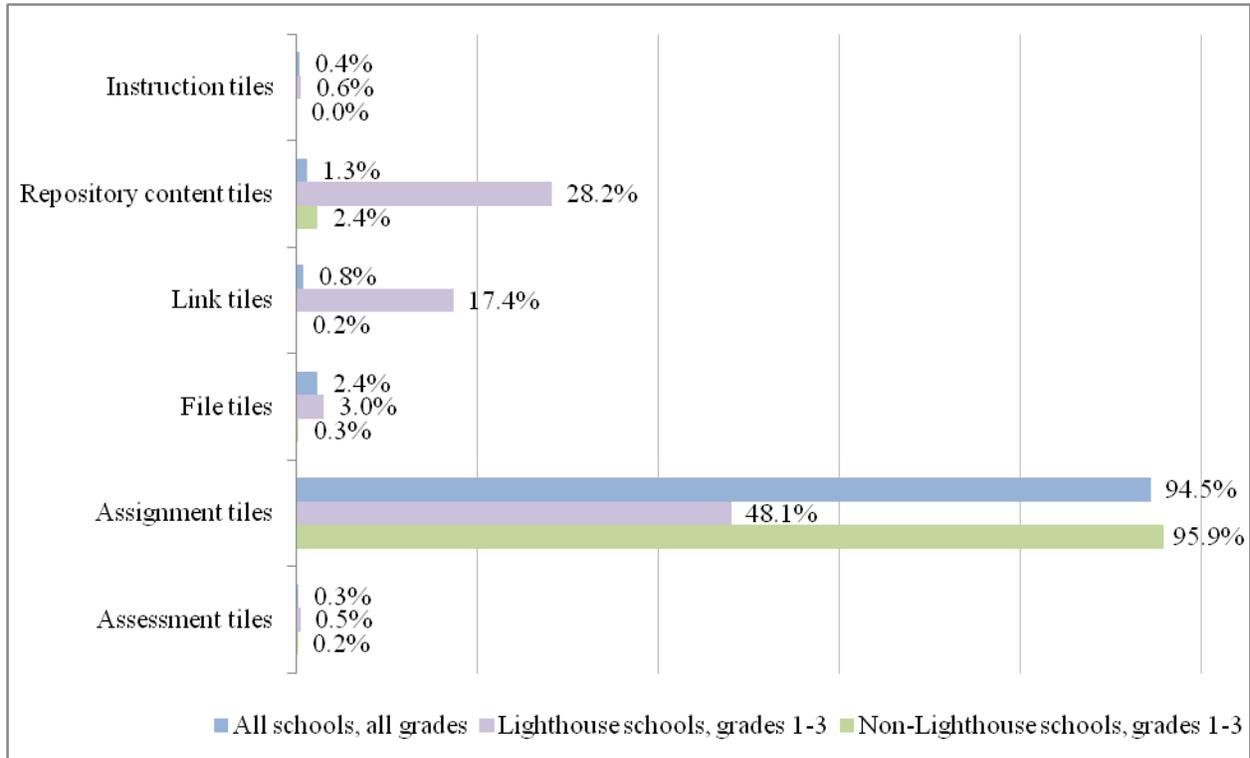
- Instruction tiles containing teacher-created or identified digital content

- Repository tiles incorporating items from the BCPS One repository including curriculum and instruction content
- Link tiles consisting of teacher- or district-provided URLs
- File tiles containing teacher-owned or district-provided files
- Assignment tiles
- Assessment tiles consisting of teacher-created tests and quizzes

Teacher use. Tile engagement frequency data were derived by dividing the total number of tiles created by the number of tiles created within each category. The resulting values provide an indication of how teachers, on average, were using BCPS One, and Figure 11 shows the comparison between Lighthouse and non-Lighthouse school usage.

- Assignment tiles accounted for the greatest number of tiles created within BCPS One for all teachers of all grades within the district. Creation of tiles within this category accounted for a substantially greater percentage of all tiles created in non-Lighthouse schools, Grades 1 through 3 (95.9%) as compared with Lighthouse schools, Grades 1 through 3 (48.1%).
- Conversely, teachers within Lighthouse schools created tiles related to instructional content including repository tiles (28.2%) and link tiles (17.41%).

Figure 11. Frequencies of tiles created by category.



Data also were examined to determine the average number of tiles created by grade level within the district as a whole, as well as by Grades 1 through 3 within Lighthouse schools and non-Lighthouse schools. Overall, 1,215 tiles were created per grade within all district schools. Approximately 798 tiles were created per grade in Grades 1 through 3 of Lighthouse schools, and 460 for the corresponding grade span in non-Lighthouse schools. A breakdown of number of tiles created per grade is presented in Table 2. Teachers of Grades 1 through 3 in Lighthouse schools utilize BCPS One tiles more extensively for content than do their counterparts in non-Lighthouse schools:

- Lighthouse schools averaged 225.4 repository content tiles created per each grade in Grades 1 through 3, and approximately 11.0 repository content tiles were created per each of the same grade levels within non-Lighthouse schools.
- Lighthouse schools Grades 1 through 3 averaged 139 link tiles per grade as compared with less than one per grade in the same for the remainder of the district.
- Teachers of Grades 1 through 3 in Lighthouse schools created fewer assignment tiles (384 per grade) than did those in non-Lighthouse schools (441 per grade) Grades 1 through 3.

Table 2. Average tiles created within BCPS One per grade.

Tile Type	Lighthouse	Non-	Lighthouse	Non-	All BCPS
	Grades 1-3 ^a <i>n</i> = 30 ^b	Lighthouse	Grades 1-3	Lighthouse	Schools
			All Grades	All Grades	All Grades
		<i>n</i> = 300	<i>n</i> = 33	<i>n</i> = 975	<i>n</i> = 1,008
Instruction	4.5	0.2	4.1	4.2	4.2
Repository content	225.4	11.0	236.9	7.6	15.1
Link	138.9	0.8	129.4	5.3	1.1
File	24.1	1.3	22.2	29.9	29.7
Assignment	384.0	441.3	391.3	1173.8	1148.2
Assessment	3.9	0.9	4.5	3.8	3.8

^a Only classrooms of Grades 1 through 3 of Mays Chapel were included in the calculation for ease of comparison.

^b Sample size refers to the number of schools times the number of grades within the schools.

Student use. The average tile views were calculated in order to assess student use of BCPS One. This calculation involved dividing the number of views per tile category by the number of tiles created within the specific category. The resulting values indicate how students were using BCPS One in terms of which categories of tiles they were predominantly accessing. An assumption was made that the data pertaining to tile views consisted of only student views.

Although assignment tiles accounted for the greatest number of tiles created across the district, link tiles had the greatest average views at six views per tile created. Repository content tiles were viewed on average 2.6 times per tile created, followed by instruction tiles at 2.0 views per tile created for all schools in the district. As presented in Table 3, classrooms of Grades 1 through 3 in Lighthouse schools had the greatest number of link tile views per tile created, followed by instruction tiles and repository content tiles. These same grade-level classrooms in

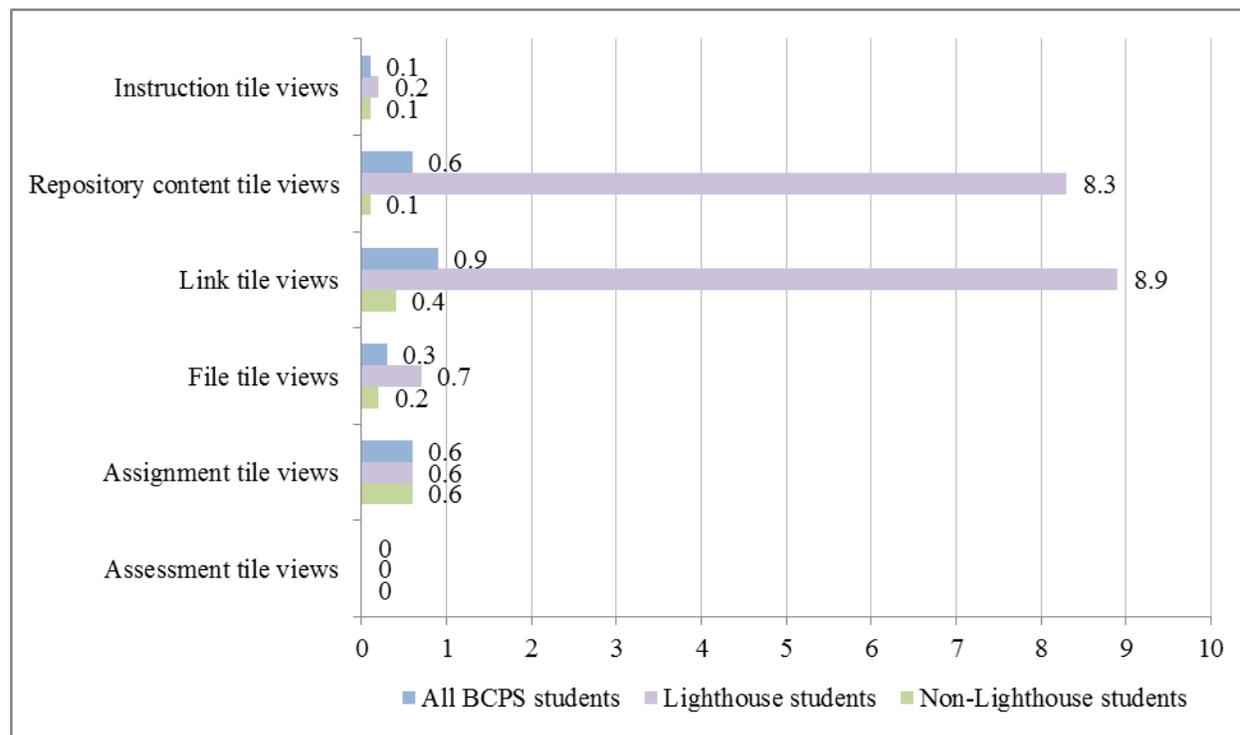
Lighthouse schools had the greatest ratio of views to tiles created for instruction tiles, followed by link tiles.

Table 3. Average tile view by students per tile created within BCPS One.

Tile Type	Lighthouse	Non- Lighthouse	Lighthouse	Non- Lighthouse	All BCPS Schools
	Grades 1 -3* n = 30	Grades 1-3 n = 300	All Grades n = 33	All Grades n = 975	All Grades n = 1,008
Instruction tiles	5.7	7.9	5.7	1.8	2.0
Repository content tiles	4.9	1.2	4.3	0.8	2.6
Link tiles	8.3	4.9	8.4	4.0	6.0
File tiles	3.6	0.7	3.6	0.5	0.5
Assignment tiles	0.2	0.0	0.2	0.0	0.0
Assessment tiles	0.0	0.0	0.0	0.0	0.0

The ratio of student logins to tile views was also calculated in order to provide information on depth of student usage of BCPS One (see Figure 12). As a whole, tiles were viewed an average of 2.6 times per student across the district. Students in Lighthouse schools viewed tiles an average of 18.7 times per student, whereas students in non-Lighthouse schools viewed tiles an average of 1.36 times per student. The differences in average views by students in Lighthouse schools as compared with non-Lighthouse Schools indicate that students were accessing tiles within BCPS One to a much greater extent. Although assignment tiles accounted for the greatest concentration of tiles created within Lighthouse classrooms, link tiles were viewed the greatest frequency of 8.91 views per student, followed by repository content tiles viewed at 8.26 per student. These average views demonstrate that students in Lighthouse schools were repeatedly accessing the instruction tiles. In contrast, all tile views occurred at a frequency lower than one view per student in non-Lighthouse schools.

Figure 12. Average tile views per student based on student login counts.



Conclusion

The purpose of the present study was to gather formative information on the S.T.A.T. initiative as implemented during the fall of 2014 in Baltimore County Public Schools. Throughout this mid-year report we have presented results related to professional development and measureable outcomes represented in the temporal logic model originally displayed in Figure 1. The research questions examined in this study, therefore, pertained to the impact on the classroom environment, student engagement, and teacher practices within Lighthouse schools as measured through classroom observations. In addition, research questions explored the perceptions of the S.T.A.T. teacher and access of BCPS One throughout the BCPS system.

Impact on the Lighthouse Classrooms

Classroom observations revealed early indications of information and resources posted within the classrooms and room arrangements consonant with S.T.A.T. goals. Although few classrooms were noted as having content displayed that supported independent thinking by students, all classrooms had at least content area-specific information displayed. Further, most classrooms reflected an arrangement of desks in groups that support flexible grouping of students, and different areas within the classroom were apparent that support different learning activities.

Areas of opportunity in terms of the classroom environment included increased student independence within classrooms specific to acquisition of materials and resources. In addition, while different learning areas were present within classrooms, teachers should be encouraged to utilize these areas in order to differentiate instruction. Observers frequently noted independent work and rarely saw evidence of flexible grouping of students or rotation of students among workspaces. Teachers should be encouraged to seek opportunities to provide students multiple formats (e.g., small group, direct instruction, and independent work) of instruction.

Classroom observations revealed early evidence that there is substantial use of digital tools for learning within Lighthouse schools. Further, the fairly extensive use of BCPS One by Lighthouse teachers and students also corroborates the findings of the classroom observations. Devices were found to be used primarily for student independent work, and little occurrence of collaborative learning or student discussion occurred. Likely due to the frequency of independent work, observers rarely saw evidence of problem solving, project-based approaches, or inquiry-based approaches to instruction. It should be noted, however, that content areas where inquiry learning might be more evident, such as science, were only observed in only two of the 40 observations that were conducted.

Based on the limited classroom observations, areas of improvement in terms of student engagement and P21 skills primarily center on how devices are used in the classroom. Teachers should be encouraged to design lessons that incorporate activities using digital tools beyond independent work, such as groups of students engaging in project-based and inquiry learning.

During classroom observations, Lighthouse school classroom teachers were found to be slightly more likely to act as a coach or facilitator than offering direct instruction, but the emphasis was roughly equal during the fall visits. This balance appears to be reasonable as teachers become accustomed to integrating devices into their classrooms and using more learner-centered approaches to instruction. Teachers were also observed incorporating higher-level questioning in their instruction, prompting students to move beyond the recall of information towards evaluation and synthesis. A growth opportunity for teacher instruction is to begin offering more higher-level feedback to students, such as providing additional information or extending student responses.

S.T.A.T. Teacher Program Survey

Overall, classroom teachers in both Lighthouse and non-Lighthouse schools were very positive towards the S.T.A.T. teacher within their schoolhouse. Professional development opportunities facilitated by the S.T.A.T. teacher were viewed as highly beneficial, though results of the survey revealed that Lighthouse teachers participated in a greater variety of professional development modes as compared with non-Lighthouse teachers. It should be noted that S.T.A.T. teachers within Lighthouse schools are full-time, whereas their counterparts in non-Lighthouse schools are part-time. It is therefore to be expected that Lighthouse teachers would participate in more professional development than those in non-Lighthouse schools. Teachers throughout the district also indicated participating in several varieties of learning opportunities. There were, however, some learning opportunities that appeared to be underutilized. For example, fewer than 20.0% of the teachers took advantage of the opportunities to observe peer classrooms and

observe model teaching or demonstration lessons facilitated by the S.T.A.T. teacher. Demonstrations and modeling are highly effective means for learning new instructional strategies and S.T.A.T. teachers should be encouraged to offer these opportunities within their schools.

Survey responses also reflected items that were measured in classroom observations. For example, 51% of Lighthouse teachers strongly agreed that the S.T.A.T. teacher has supported learner-centered environments. In addition, 63% of Lighthouse teachers indicated strong agreement that the S.T.A.T. teacher has provided support for technology integration. Due to the robust early emphasis on digital tools for learning during observations, S.T.A.T. teachers have emphasized this component in Lighthouse classrooms.

While overall impressions of the S.T.A.T. teacher program were positive in terms of the support and professional development offered, teachers indicated a need for additional support such as multiple S.T.A.T. teachers or a dedicated, full-time S.T.A.T. teacher within each schoolhouse. In addition, classroom teachers desire to have the role of S.T.A.T. teachers to be more of a peer coach rather than an evaluator of their performance. On a related note, teachers indicated requests for examples such as modeling and lesson-planning specific to their content area.

Digital Content Access

The analysis of BCPS One usage by schools throughout the district revealed a substantially greater use of BCPS One by teachers in Lighthouse schools as compared with the rest of the district, as indicated by the average number of tiles created by classroom within these schools. Lighthouse Schools were found to use BCPS One for assignments, repository content, and links most often. In contrast, non-Lighthouse Schools predominantly used BCPS One for assignments and there was very little use of BCPS One for instructional content. It should be noted that teachers within Lighthouse Schools have received additional professional development in creating and using the tiles in instruction. Thus, one would expect to see a greater frequency of instructional tiles created within these locations. The only category of tiles created more frequently per Grades 1-3 in non-Lighthouse schools as compared with the same in Lighthouse schools was assignment tiles.

Consistent with the greater use of BCPS One by Lighthouse school teachers, students in these schools were also found to use BCPS One more so than those in non-Lighthouse schools. Students in Lighthouse schools viewed four tile categories (link tiles, instruction tiles, repository content tiles, and file tiles) between three and eight times per student. In contrast, students in non-Lighthouse schools viewed two tile categories (instruction tiles and link tiles) between five and seven times per student and three categories (file tiles, assignment tiles, and assessment tiles) less than once per student. Only one category of tiles, instruction tiles, was viewed a greater number of times per student in non-Lighthouse schools as a compared with Lighthouse schools.

This difference in both teacher and student usage of BCPS One between Lighthouse and non-Lighthouse schools could partially be explained by the availability of individual devices for student use during classroom instruction.

S.T.A.T. Initiative

While this mid-year report contains early baseline data on the effects of S.T.A.T. evident in Lighthouse schools, it appears that these locations are beginning to transition to technology enhanced, learner-centered environments. As reflected in the S.T.A.T. evaluation model (Figure 1), findings of the present study indicate evidence of the early effects of professional development on measurable outcomes (e.g., classroom environment, teacher practice, digital content, student engagement, and P21 skills). It is important to note that it would likely be unreasonable for teachers to employ all of the strategies contained in the observation instrument during these first few months of implementation. It is promising, though, that few teachers are beginning to address higher-order and P21 instructional objectives. There are certainly areas of opportunity identified from these classroom observations, but there is early evidence that these classrooms are beginning to reflect the goal of S.T.A.T., which is to prepare globally competitive students with 21st century skills. The S.T.A.T. Teacher Program is perceived by classroom teachers within both Lighthouse and non-Lighthouse schools as a valuable asset to assist in the transformation of BCPS schools.

Appendix A: OASIS-21

Classroom Environment

- Information and communications that support independent thinking are highly visible in the classroom.
 Not observed Somewhat Extensive
- Information and resources that reflect content being taught is visibly displayed in classroom.
 Not observed General Subject Lesson-specific
- Students move around the room independently acquiring material and resources.
 Not observed Rarely Occasionally Frequently Extensively
- Students utilize different work spaces for different learning environments (e.g. collaborative, independent, receiving direct instruction).
 Not observed Rarely Occasionally Frequently Extensively

Student Engagement

- Students using digital tools for learning.
 Not observed Rarely Occasionally Frequently Extensively
- Multiple modes of student responses (e.g. verbal, written, through technology, active votes, texting, physical response.)
 Not observed Rarely Occasionally Frequently Extensively
- Independent work.
 Not observed Rarely Occasionally Frequently Extensively
- Collaborative learning.
 Not observed Rarely Occasionally Frequently Extensively
- Student discussion.
 Not observed Rarely Occasionally Frequently Extensively

P21 Skills

- Problem solving.
 Not observed Rarely Occasionally Frequently Extensively
- Project-based approaches to instruction.
 Not observed Rarely Occasionally Frequently Extensively
- Inquiry-based approaches to instruction.
 Not observed Rarely Occasionally Frequently Extensively
- Learning incorporates authentic/real world contexts.
 Not observed Rarely Occasionally Frequently Extensively

Teacher Practice

- Teachers acting as coach/facilitator. (Teacher facilitates the efficient and effective use of digital tools and content.)
 Not observed Rarely Occasionally Frequently Extensively

- Teacher presentation.
 Not observed Rarely Occasionally Frequently Extensively

- Higher-order instructional feedback given.
 Not observed Rarely Occasionally Frequently Extensively

- Communication is initiated by students.
 Not observed Rarely Occasionally Frequently Extensively

- Higher-level questioning.
 Not observed Rarely Occasionally Frequently Extensively

- Flexible grouping based on student and task needs.
 Not observed Rarely Occasionally Frequently Extensively

Appendix B: OASIS-21 Reference Guide

Classroom Environment

Information supporting independent thinking

- Quotes, slogans conveying that inquiry is valued

Information reflecting content being taught

- Dependent on subject matter of lesson

Ex: Lesson is on multiplication and a poster conveying steps for multiplication is displayed

Students move around the room independently

- Students acquire materials needed for a task or project they're working on.

Non-ex: Teacher directs students to obtain notebooks from the bookshelf.

Students utilize different work spaces

- Spaces for collaboration, independent work, etc. are utilized by students
- At least two different workspaces are being used

Ex: Students working in a group at a cluster of desks while another group is seated on a reading mat doing independent work.

Non-ex: All students seated in front of white board for teacher presentation, though other areas are present.

Student Engagement

Multiple modes of student responses

- Verbal, written, through technology, active votes, texting, physical response
- More than one mode used when responding to other students or to teacher.

Students using digital tools

- Using devices independently or in group
- Watching a video, reading, writing

Non-ex: Teacher using of digital tools

Independent work

- Students working alone on an assignment or practicing content

Non-ex: Students working on non-instructional task should not be coded

Collaborative learning

- Students working in pairs or small groups to complete a task or project.
- Involves collaboration, helping each other.

Non-ex: Students talking to each other on topic not related to the lesson.

Student discussion

- Discussion amongst students (pairs, groups, class) on a prompted topic or higher-level question

Non-ex: collaborating to complete a task.

Ratings:

Not observed (NO):

Rarely (R):

Somewhat/Occasionally (S/O):

Frequently (F):

Extensive(ly) (E):

Strategy never observed.

Received little emphasis, not a dominant instructional or learning component

Receives modest emphasis or time in class

Receives substantial emphasis or time in class, dominant component

Highly prevalent in class, strongly emphasized

P21 Skills

Problem solving

- Students work together to solve problems
- May be prompted by teacher, but teacher is not directly involved.
- Higher standard than problems involving recall.
- Multiple resources used, using resources effectively, critical thinking involved

Non-ex: Mathematics problems.

Project-based approaches

- Instructional focus is centered on an inquiry or question
- Projects may result in tangible product (research report, presentation, etc.)
- Students are seen working on the project

Non-ex: Project as part of the day's lesson.

Inquiry-based approaches

- Students explore a question/topic/theme in-depth, develop and ask further questions, and conduct research and problem-solve to answer the questions

Ex: Students given a topic to explore, students develop questions, use the Internet to research the topic.

Authentic/real world contexts

- Problems that students investigate may relate (or stem from) problems students can relate to in their own world
- Lesson or problems are specifically tailored to students' world.

Teacher Practice

Teacher as coach/facilitator.

- Teacher facilitates the efficient and effective use of digital tools and content.
- Teacher is supportive

Non-ex: Teacher disciplining students.

Teacher presentation

- Teacher lecture, teacher offering direct instruction
- Do not code classroom management.

Higher-order instructional feedback

- Feedback related to learning process
- Provides elaborative feedback
- Offers an explanation, provides new information

Ex: Teacher agrees that student response is correct, then extends student response by adding new information.

Non-ex: Only stating correctness of response and moving on. Motivational/encouraging phrases.

Communication is initiated by students

- Asking questions of peers or teacher
- Communicate beyond what is asked

Higher level questioning

- Questions beyond factual recall
- Questions that stimulate discussion

Ex: Questions that involve producing an explanation, providing an example, making a prediction, compare/contrast.

Non-ex: Questions that involve memorization to produce a correct answer.

Flexible grouping of students

- Grouping based on ability level
- Grouping based on tasks
- Differentiated instruction

Will likely need to ask teacher how student groups were formed.

Appendix C: S.T.A.T. Teacher Program Survey

I have participated in the following mode(s) of professional learning facilitated by our S.T.A.T. Teacher (**check all that apply**):

- a. Large Group (e.g. faculty meeting)
- b. Small Group (e.g. grade level, team, or content area meeting or PLC)
- c. Individual/1:1 Support
- d. Independent Learning (e.g. accessing resources on my own provided by the S.T.A.T. Teacher)
- e. None

	No Basis to Assess	Strongly Disagree	Disagree	Agree	Strongly Agree
The S.T.A.T. Teacher in my school is accessible to me.	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school follows through on requests.	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school models effective instructional strategies (e.g. during team or staff meetings, trainings, working with teachers in the classroom, workshops).	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school effectively plans and/or facilitates meetings (e.g. staff, team, department, committee).	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school provides or directs me to useful resources (e.g. student data, CPD courses, certification, professional reading, current research).	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school supports the use of data to inform instruction to meet students' needs.	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school has helped me create a more learner centered environment in my classroom.	<input type="checkbox"/>				
The S.T.A.T. Teacher in my school provides coaching on how to integrate technology into instruction.	<input type="checkbox"/>				
I trust my S.T.A.T. Teacher to maintain confidentiality.	<input type="checkbox"/>				

As part of my professional development this year, I have participated in the following learning opportunities supported by the S.T.A.T. Teacher (**check all that apply**):

- One-on-one professional discussions/consultations with the S.T.A.T. Teacher
- Individual, team, or departmental planning sessions with the S.T.A.T. Teacher
- Training or workshop(s) facilitated by the S.T.A.T. Teacher
- Developed my teacher development plan with assistance from the S.T.A.T. Teacher
- Learning walk or instructional walk-through facilitated by the S.T.A.T. Teacher
- Analysis of data with the S.T.A.T. Teacher
- Observed another teacher’s classroom facilitated by the S.T.A.T. Teacher
- Study group or lesson study with the S.T.A.T. Teacher
- Observed the S.T.A.T. Teacher model teaching or conduct a demonstration lesson
- Developed an SLO with assistance from the S.T.A.T. Teacher

Please provide comments about the S.T.A.T. Teacher Program to help us understand what is working:

Please provide comments about the S.T.A.T. Teacher Program to help us understand what needs improvement:

Appendix D: OASIS-21 Results

Classroom Environment

	Not Observed %	Somewhat %	Extensive %	<i>M</i>	<i>SD</i>
Information and communications that support independent thinking are highly visible in the classroom.	50	37.5	12.5	1.63	0.71

	Not Observed %	General Subject %	Lesson Specific %	<i>M</i>	<i>SD</i>
Information and resources that reflect content being taught is visibly displayed in classroom.	50	37.5	12.5	1.63	0.71

	Not observed %	Rarely %	Occasionally %	Frequently %	Extensively %	<i>M</i>	<i>SD</i>
Students move around the room independently acquiring materials and resources.	52.5	22.5	12.5	7.5	5	1.90	1.19
Students utilize different work spaces for different learning environments	40	5	22.5	25	7.5	2.55	1.43

Student Engagement

	Not observed %	Rarely %	Occasionally %	Frequently %	Extensively %	<i>M</i>	<i>SD</i>
Students using digital tools for learning.	22.5	12.5	17.5	32.5	15	3.05	1.41
Multiple modes of student responses.	22.5	12.5	35	30	0	2.73	1.13
Independent work.	15	0	32.5	42.5	10	3.33	1.16
Collaborative learning.	57.5	22.5	7.5	12.5	0	1.75	1.06
Student discussion.	82.5	7.5	7.5	2.5	0	1.3	0.72

P21 Skills

	Not observed	Rarely	Occasionally	Frequently	Extensively	<i>M</i>	<i>SD</i>
	%	%	%	%	%		
Problem solving.	90	7.5	2.5	0	0	1.13	0.4
Project-based approaches to instruction.	92.5	0	2.5	0	5	1.25	0.93
Inquiry-based approaches to instruction.	90	2.5	2.5	2.5	2.5	1.25	0.84
Learning incorporates authentic/real world contexts.	50	27.5	20	0	2.5	1.78	0.95

Teacher Practice

	Not observed	Rarely	Occasionally	Frequently	Extensively	<i>M</i>	<i>SD</i>
	%	%	%	%	%		
Teachers acting as coach/facilitator.	20	17.5	30	25	7.5	2.83	1.24
Teacher presentation.	27.5	15	27.5	20	10	2.7	1.34
Higher-order instructional feedback given.	37.5	17.5	32.5	10	2.5	2.23	1.14
Communication is initiated by students.	12.5	47.5	35	2.5	2.5	2.35	0.83
Higher level questioning.	12.5	17.5	35	32.5	2.5	2.95	1.06
Flexible grouping based on student and task needs.	62.5	10	12.5	7.5	7.5	1.88	1.32

Appendix E: Descriptive Statistics and Frequencies of Responses to S.T.A.T. Teacher Program Survey

I have participated in the following mode(s) of professional learning facilitated by our S.T.A.T. Teacher.

Participant	None %	Large Group %	Small Group %	Individual/ 1:1 Support %	Independent Learning %
All teachers	2.8	91.0	72.3	60.1	39.1
LH teachers*	2.7	90.9	84.9	76.3	58.6
Non-LH teachers	2.8	91.0	71.6	59.1	38.0

*Significant differences in participation of the four modes between these two groups, $p < .001$

Indicate your level of agreement or disagreement with each of the following statements.

1. The S.T.A.T. Teacher in my school is accessible to me.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	1.5	3.7	3.2	26.4	65.2	4.48	0.95
LH teachers	0.6	7.3	0.0	22.0	70.1	4.48	1.07
Non-LH teachers	1.5	3.5	3.4	26.7	64.9	4.48	0.94

2. The S.T.A.T. Teacher in my school follows through on requests.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	5.3	3.4	2.7	20.1	68.5	4.56	0.92
LH teachers	4.0	6.2	0.0	15.8	74.0	4.58	1.01
Non-LH teachers	5.4	3.2	2.9	20.3	68.2	4.56	0.91

3. The S.T.A.T. Teacher in my school models effective instructional strategies.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	5.2	4.0	5.4	26.9	54.4	4.35	1.06
LH teachers	4.5	6.8	1.1	20.3	67.2	4.47	1.09
Non-LH teachers	5.5	4.0	5.9	28.5	56.1	4.34	1.05

4. The S.T.A.T. Teacher in my school plans and/or facilitates meetings effectively.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	4.9	3.7	4.6	27.3	59.5	4.41	1.00
LH teachers	4.5	6.2	1.7	20.3	67.2	4.47	1.07
Non-LH teachers	4.9	3.6	4.8	27.7	59.1	4.41	1.00

5. The S.T.A.T. Teacher in my school provides/directs me to useful resources.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	5.3	4.0	5.2	25.8	55.5	4.37	1.05
LH teachers	4.0	6.2	1.7	19.8	68.4	4.48	1.07
Non-LH teachers	5.7	4.0	5.6	27.4	57.3	4.36	1.05

6. The S.T.A.T. Teacher in my school supports the use of data to inform instruction to meet students' needs.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	13.2	3.3	3.2	27.6	48.3	4.39	0.98
LH teachers	13.6	6.8	1.7	20.9	57.1	4.39	1.14
Non-LH teachers	13.8	3.2	3.5	29.4	50.2	4.39	0.96

7. The S.T.A.T. Teacher in my school has helped me create a more learner centered environment in my classroom.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	21.7	4.3	9.8	27.5	36.7	4.05	1.21
LH teachers	15.3	6.2	4.5	22.6	51.4	4.28 ^a	1.19
Non-LH teachers	22.1	4.1	10.2	27.8	35.8	4.04	1.21

^aLighthouse teachers scored significantly higher than non-Lighthouse teachers, $p < .001$.

8. The S.T.A.T. Teacher in my school provides coaching on how to integrate technology into instruction.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	14.1	4.9	10.0	30.3	40.7	4.07	1.20
LH teachers	7.9	6.2	4.0	18.6	63.3	4.40 ^a	1.15
Non-LH teachers	14.4	4.8	10.3	31.0	39.4	4.05	1.20

^aLighthouse teachers scored significantly higher than non-Lighthouse teachers, $p < .001$.

9. I trust my S.T.A.T. Teacher to maintain confidentiality.

Participant	No basis to assess %	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %	<i>M</i>	<i>SD</i>
All teachers	7.3	5.1	4.3	23.7	59.6	4.38	1.09
LH teachers	3.4	6.2	1.1	18.6	70.6	4.51	1.05
Non-LH teachers	7.5	5.0	4.5	24.0	58.9	4.38	1.09

As part of my professional development this year, I have participated in the following learning opportunities supported by the S.T.A.T. Teacher

Participant	One-on-one professional discussions/consultations with the S.T.A.T. Teacher %
All teachers	81.1
LH teachers	84.97
Non-LH teachers	80.9
Participant	Individual, team, or departmental planning sessions with the S.T.A.T. Teacher %
All teachers	86.2
LH teachers	88.2
Non-LH teachers	86.0
Participant	Training or workshop(s) facilitated by the S.T.A.T. Teacher %
All teachers	92.2
LH teachers	94.8
Non-LH teachers	92.1

Participant	Developed my teacher development plan with assistance from the S.T.A.T. Teacher
	%
All teachers	36.6
LH teachers	30.1
Non-LH teachers	37.1
	Learning walk or instructional walk-through facilitated by the S.T.A.T. Teacher
	%
All teachers	18.7
LH teachers	49.0
Non-LH teachers	16.7
	Analysis of data with the S.T.A.T. Teacher
	%
All teachers	36.8
LH teachers	37.3
Non-LH teachers	36.7
	Observed another teacher's classroom facilitated by the S.T.A.T. Teacher
	%
All teachers	9.8
LH teachers	24.8
Non-LH teachers	8.7
	Study group or lesson study with the S.T.A.T. Teacher
	%
All teachers	14.3
LH teachers	20.3
Non-LH teachers	13.9
	Observed the S.T.A.T. Teacher model teaching or conduct a demonstration lesson
	%
All teachers	19.1
LH teachers	21.6
Non-LH teachers	19.0

Participant	Developed an SLO with assistance from the S.T.A.T. Teacher	
		%
All teachers		47.4
LH teachers		50.3
Non-LH teachers		47.2
	None of the above	
		%
All teachers		7.8
LH teachers		5.2
Non-LH teachers		8.0