# The West Virginia Special Education Technology Integration Specialist (SETIS) Program

## 2011-2012 Evaluation Report

West Virginia Department of EDUCATION
Office of Research

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**March 2013**

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**Keywords**
Special Education Technology Integration Specialist Program, SETIS, teacher colleague, school administrator, technology

**Suggested Citation**

Stohr, A. D. (2013). The *West Virginia Special Education Technology Integration Specialist (SETIS) program: 2011-2012 evaluation report*. Charleston, WV: West Virginia Department of Education, Division of Teaching and Learning, Office of Research.

# Executive Summary

The Special Education Technology Integration Specialist (SETIS) program provides professional development for special education teachers to assist them in achieving proficiency with 21st Century Technology Tools. In 2011–2012, its 7th year, the program trained 16 special educators as models, coaches, and mentors of technology integration at schools and within classrooms. This study examines SETIS program implementation, use, and impact across three key stakeholder groups: SETIS, teacher colleagues, and school administrators.

### Method of study

SETIS candidates were surveyed once, using a retrospective pre-post survey administered at the conclusion of the school year. Teacher colleagues and school administrators, identified and invited by SETIS due to their close working relationships, participated in pre-post surveys administered at the beginning and ending of the school year.

### Findings

The program is successfully equipping SETIS with the capacity needed to implement technology integration in schools and classrooms, as evidenced by significant differences in mean scores and large to very large effect sizes in the SETIS retrospective pre- and postprogram self-ratings. Teachers indicated SETIS activities led to increases in coteaching among teachers and SETIS, improved technology integration in classrooms, raised technology knowledge among teachers, and enhanced student experiences. School administrators reported greater student engagement as a result of integrating technology into their classwork. Teacher colleagues and school administrators reported leveraging SETISs' skills and resources in the ways they anticipated. SETISs named administrative support as the most common factor in facilitating meaningful collaboration with teachers. Program barriers were perceived by SETISs and school administrators as moderate. SETISs reported a lack of time as their largest barrier; computer access for students, and internet speed were also primary concerns. Survey results revealed 25% of the participating administrators were not aware a SETIS would be present in their schools at the beginning of the school year.

### Limitations of study

Relying upon self-reported information carries the risk of response bias. Among teachers and administrators small sample sizes and the inability to track response rates or match pre- and post-survey results were also limitations.

### Recommendations

With the capacity to train 25 SETISs per year and increasing technological demands in classrooms, program staff are urged to recruit more SETIS candidates. Other recommendations include encouraging SETIS candidates to conduct more staff development at their schools; providing SETISs expanded opportunities to work together in face-to-face settings, to help them more effectively implement technology integration within the specialized con-

tent of special education; improving communication at all program levels to ensure greater awareness of SETISs' presence in schools and the optimal use of their skills and resources; promote scheduling that allows teachers and SETISs time to cocreate technology-integrated lesson plans; and incorporate mechanisms in future evaluations that will allow for tracking and matching of teacher and administrator responses in pre- and postprogram surveys.

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# Introduction

The Special Education Technology Integration Specialist (SETIS) program was created through an expansion of the Technology Integration Specialist (TIS) program. The original TIS program was designed to provide and coordinate professional development activities for all teachers and administrators on a school-level basis to assist them in becoming proficient in the use of 21st Century Technology Tools—a key component of Teach 21.[1] The TIS is an individual who models, coaches, and mentors teachers in using statewide technology resources to meet West Virginia's content standards and objectives. The TIS also assists in the implementation of county and school technology plans, and in the use of other county and school software applications.

The West Virginia Department of Education piloted the TIS program through Part D of Title II technology funds provided by the United States Department of Education. The program has now been expanded to include library media specialists, special educators, Title I teachers, career and technical education teachers, and county- and school-based TISs who are supported through local county funds. Special educators were brought into the TIS program in April 2006; they are referred to as *special education technology integration specialists,* or *SETISs*.

This study will examine implementation, use, and impact of the 2011-2012 SETIS program. To this end, findings from surveys of three critical stakeholder groups will be discussed: (a) SETISs themselves, (b) teachers who either cotaught with or whom a SETIS had some degree of influence with, and (c) administrators at schools participating in the SETIS program.

Currently in its 7th year, each round of the SETIS program runs from early summer of one year to late spring of the following year; participants have until late summer to complete program requirements. Thus, the program allows for training prior to the beginning of a school year and concludes after the school year has ended. At most, 25 participants are selected for each cohort. TIS program roles and responsibilities (also applicable to SETIS program participants), as stated in the TIS Assurance Statement and Agreement (Office of Special Programs, 2011), include the following:

- participate in and successfully complete 40 days (320 hours) of required professional development (including both online and face-to-face sessions);
- use acquired technology integration skills to improve instruction for both students and educators;
- use enhanced knowledge and skills to build effective consultative and coteaching relationships with all teachers;
- use collaborative planning time to assist in integrating technology into the instructional units being planned by teachers;

[1] The other two components of Teach 21 are 21st Century Learning Skills and 21st Century Content Standards. For more details about Teach 21, visit http://wvde.state.wv.us/teach21/.

- serve as a resource to educators on technology integration, as appropriate, in the implementation of information literacy, independent learning, and social responsibility;
- communicate the importance of developing 21st century skills for all students, including those with disabilities, to improve academic achievement and postsecondary outcomes; and
- continue to teach students and educators in West Virginia public schools as a TIS in consultative and coteaching relationships for 2 years after completion of the 40 days of required professional development.

Participants in the TIS program receive a laptop computer and camera for their school from the WVDE and additional technology resources including white boards, LCD projectors, scanners, and color printers from their county office. Additionally, participants receive the equivalent of 40 days (320 hours) of professional development and a $5,000 grant to help defray the costs of the TIS professional development. Grant funds can be used to pay the costs for stipends, substitute teachers, travel expenses, conference registration fees, and other costs associated with teachers' participation in the TIS program. Upon completion of the program, participants may apply for a credential in instructional technology integration awarded by the WVDE Office of Professional Preparation.

## Rationale for Study

In collaboration with the WVDE Office of Instructional Technology, Office of Special Programs, and Office of Career and Technical Instruction, the Office of Assessment, Accountability, and Research[2] (OAAR) developed an evaluation plan to assist the WVDE in determining the impact of the TIS program on selected TIS applicants, participating schools, teachers, and students (OAAR, 2010). The current study of the SETIS program covers several components of that 2010 TIS program evaluation plan. Moreover, it expands upon the 2010-2011 SETIS program teacher and administrator reports[3], focusing on use, utilization, and impact of technology integration in 2011-2012 among three key stakeholder groups: SETIS, school administrators, and teachers/coteachers. While this is the second examination of administrator and teacher perceptions about the SETIS program, it is the first time findings from all three stakeholder groups have been consolidated into one report.

## Evaluation Questions

Drawn from the TIS evaluation plan, the SETIS program adopted five overarching evaluation questions:

[2] The Office of Assessment, Accountability and Research has since divided into two separate offices—the Office of Assessment and Accountability (OAA) and the Office of Research (OR). The Office of Research was charged with implementing the evaluation plan described in this report.

[3] Access these reports at http://wvde.state.wv.us/research/reports2012/WVSpecialEducationTISProgramTeachersReport2012.pdf and http://wvde.state.wv.us/research/reports2012/WVSpecialEducationTISProgramAdministratorsReport2012.pdf.

EQ1. To what extent does the TIS program build the capacity of participating TISs to plan and facilitate (a) teaching and learning, (b) information access and delivery, and (c) program administration?

EQ2. To what extent do TISs encounter barriers to successful program implementation (e.g., financial, temporal, relational, etc.)?

EQ3. To what extent is the level of technology integration in TIS schools positively impacted through participation in the program?

EQ4. In what ways have school administrators and teachers leveraged the TIS and the resources provided by the TIS?

EQ5. What impact has the TIS program had on students' technology literacy in participating schools?

This study, analyzing survey results from SETISs, teachers, and administrators, addresses each evaluation question. The SETIS Survey, a retrospective survey conducted at the end of the school year, concentrates on EQs 1 and 2, and assists with examining EQ4. The teacher surveys, administered at the beginning and end of the school year, focus on EQ3 but also touch upon EQs 4 and 5. The administrator surveys, also conducted at the beginning and end of the school year, focus primarily on EQ4 and collect additional evidence to address EQs 2 and 3.

# Methodology

Preintervention and postintervention surveys were administered to teachers and school administrators in the study at the beginning and ending of the school year. Special education technology integration specialists (SETISs) were surveyed once, using a retrospective pre-post survey administered at the conclusion of the school year. All surveys were conducted using a secure on-line delivery and collection service.

## Participant Characteristics

Three distinct groups were included in this study: SETISs, teacher colleagues, and school administrators. *SETISs* are special education teachers who were accepted into the SETIS program and received specialized training. The 2011-2012 SETIS cohort consisted of 16 special education teachers, working in schools at all three programmatic levels (i.e., elementary, middle, and high school), located in 11 school districts throughout the state. In this study, *teacher colleagues* are defined as teachers who cotaught with SETISs or with whom SETISs believed they had the greatest influence regarding technology use. *School administrators* were defined as principals, assistant principals, or other teachers who serve in an administrative capacity in the schools where SETISs served.

## Sampling Procedures

All 16 SETISs in the 2011-2012 cohort were invited to participate in this evaluation study. SETISs were responsible for selecting and recruiting teacher colleagues and school administrators to complete surveys at the beginning and end of the 2011-2012 school year (Pre and Post Surveys). This method of sample selection precludes our ability to report response rates, as SETISs were not required to report the number of administrators and teacher colleagues they initially invited for each of the surveys or how many times they reminded invitees to participate. It should be noted that among the teacher colleague and administrator survey respondents, some counties were represented in one survey but not the other. Respondents from schools in these counties were removed from the sample before analysis to ensure that the Pre and Post Survey results were as comparable as possible.

## Measures and Covariates

All evaluation questions in this study were addressed through the use of online survey instruments designed to solicit perceptions of the three stakeholder groups mentioned above. The SETISs completed one survey, the Special Education Technology Integration Specialist (SETIS) Survey (see Appendix A, page 51). Teacher colleagues completed the SETIS Teacher Pre Survey and SETIS Teacher Post Survey see, page 63), while administrators completed the SETIS Administrator Pre Survey and SETIS Administrator Post Survey (see Appendix C, page 77). The WVDE Office of Research developed the instruments in collaboration with WVDE Office of Special Programs staff. More information about each of these instruments follows.

## Special education technology integration specialist survey

The SETIS Survey, designed to capture the SETIS experience, is a questionnaire that included a variety of questions, including retrospective pre/post items that asked respondents to reflect on conditions before they participated in the program and then reflect again on the those conditions at the end of the program. The survey was administered at the end of the 2011-2012 school year.

Using multiple choice and open-ended questions, the instrument collected demographic information about respondents and examined four types of capacity building, using four distinct indices: *human capacity*, *organizational capacity*, *structural capacity*, and *material capacity*. The capacity indices were based on definitions found in *Determining Capacity within Systemic Educational Reform* (Century, 1999). The human capacity index measures intellectual proficiency (knowledge, expertise, and understanding) and will (interest, patience, and persistence). Items in this index were used to determine what, if any, change SETIS's perceived in their own capacity over the course of the program. The organizational capacity index focuses on the interaction, collaboration, and communication among individuals within a system; in this case the system is the SETIS program and the individuals are the SETISs and the teachers and school administrators they work with. The structural capacity index includes elements such as policies, procedures and formalized practices; elements that are part of the system (i.e. the SETIS program), but also independent and not under the direct control/influence of those using the elements. The material capacity index is concerned with fiscal and/or other material supports available to people (e.g. SETIS candidates) within a system (e.g. the SETIS program). The open-ended questions provided an opportunity for respondents to expand upon the capacity indices as well as describe attributes they found most valuable, what they would change, and barriers encountered in the TIS program.

Employing a 5-point Likert-type scale of agreement—including 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*)—each of the four capacity sections prompted SETISs to consider their level of agreement with a statement before and after participating in the TIS program. For example:

| | |
|---|---|
| Before participating in the TIS program. . .<br>After participating in the TIS program. . . | . . . I model(ed) lessons that integrate technology for other teachers in the school |

The human capacity index asked SETISs to consider their knowledge, skills and efficacy with technology integration. The organizational capacity index included survey items about the extent of interaction SETISs had with others in their school/county to effectively integrate technology, and how their practices have changed due to participation in the TIS program. The structural capacity index consisted of items measuring the extent policies, procedures, and practices within the SETIS's school/county have changed as a result of having a technology integration specialist. The final index, material capacity, included survey items concerning access to resources necessary to accomplish technology integration in their school.

Demographic information collected included the county where the SETIS is located, their role within their school, the programmatic level of their school (i.e., pre-k, elementary, middle, high), and if their school currently employed any other person who had completed the TIS program.

### Teacher Pre Survey and Post Survey

The surveys included multiple-choice and open-ended questions. Demographic data collected from the teacher colleagues included school district, school name, primary role (i.e., teacher, aide, etc.), years of teaching experience, and years of coteaching with a SETIS. Respondents were also asked about the education environment for the majority of their students. Described in detail below, multiple-choice response items were used to assess teacher colleagues' technology use and utilization. Open-ended questions allowed respondents to provide a descriptive account of the roles of SETISs, what the respondent hoped to accomplish (Teacher Pre Survey), or has accomplished (Teacher Post Survey) by working with a SETIS, and any additional comments they chose to provide.

The technology use items in the surveys were based on a 4-point scale to indicate how often respondents performed certain technological practices, such as "I use information from digital sources to promote learning and engage students in classroom activities," with 1 (*not usually*), 2 (*sometimes*), 3 (*often*), or 4 (*almost always*) as response options. Survey items were grouped into five indices based on the TIS Professional Development Model[4] (NETS-T, 2008): (a) designing and developing digital-age learning experiences and assessments, (b) modeling digital-age work and learning, (c) engaging in professional growth and leadership, (d) promoting and modeling digital citizenship and responsibility, and (e) facilitating and inspiring student learning and creativity. For the purposes of this report, the indices are labeled as *Design*, *Model, Engage*, *Promote*, and *Facilitate*.

### Administrator Pre and Post Surveys

In the Administrator Pre Survey, administrators were asked to respond to six items prospectively, concerning how they anticipated using the SETIS's services; in the Administrator Post Survey, they were asked to provide an assessment of how they actually utilized the SETIS services. The Post Survey also included one question asking school administrators if the presence of a SETIS in their school could be linked to increased student engagement in curricular activities. Both surveys employed a 5-point, Likert-type scale; the Pre Survey scale was based on likelihood with 1 indicating *unlikely* and 5 indicating *likely* whereas the Post Survey used a scale of agreement where 1 denoted *untrue* and 5 signified *true*. Due to the nature of the surveys, the Pre Survey asking administrators to measure *intended* implementation and the Post Survey asking about *actual* leverage, it was necessary for the wording of the items to differ slightly. For example, a Pre Survey item would read, "I plan to ask my SETIS to share what he/she has learned by leading standards-based professional development for the other teachers in my school," and its Post Survey counterpart would be worded, "My SETIS shared what he/she has learned by leading standards-based professional development for the other teachers in my school."

[4] Based upon the National Educational Technology Standards for Teachers (NETS-T)

Administrators were also asked to provide descriptive accounts, via open-ended survey items, about their expectations concerning the role of a SETIS, and what they expect to realize (Pre), and actually realized (Post) from having a SETIS in their schools. Demographic data, such as the role of the respondent in their school and length of time in that role, were also collected.

## Research Design

The SETISs completed their retrospective pre/post survey at a face-to-face meeting held in May 2012. In attendance were 14 SETISs in this year's cohort, and a coordinator from the West Virginia Department of Education.

The teacher colleague and school administrator surveys were each administered twice to assess the extent to which teachers and schools expected and actually utilized the services of the SETIS. Among the teacher colleague cohort, Pre Survey data collection took place from August through November, 2011. The data collection period for the school administrator Pre Survey occurred from August through October, 2011. Both Post Surveys were open for data collection from May through June, 2012.

## Data Analysis

Both quantitative and qualitative data analysis techniques were used to address the data collected for this study. To analyze quantitative survey items (i.e., multiple choice questions), we used SAS 9.2 to produce descriptive statistics including frequencies (i.e., percentages), and to calculate and interpret measures of central tendency and dispersion (i.e., means and standard deviations). Statistical significance was established by conducting *t* tests; a *t* test determines if the difference in mean scores between two groups (such as pretest and posttest) represents a pattern and is not simply the result of chance. Two types of *t* tests were applied to the data in this study, paired-samples and independent-samples *t* tests. It was possible to use paired-samples *t* tests for the SETIS Survey results. Paired-samples *t* tests consist of matched pairs; since the SETIS Survey is a retrospective survey we know that the before-and-after results from each participant are a matched pair. However, it was impossible to link pre survey results to post survey results with the Teacher and Administrator surveys. Therefore, these surveys required the use of independent-samples *t* tests. Pre and Post Survey means were considered significantly different when *t* tests yielded *p* values of 0.05 or less. A *p* value of 0.05 or less indicates a 95% probability that the survey results were not observed due to chance. Additionally, effect sizes using Cohen's *d* were calculated. Akin to their name, effect sizes measure the magnitude of difference in the mean scores between two measurements, in this study the Pre and Post Surveys. Further, as a measure of strength between the differences of two mean scores, effect sizes are not affected by sample size. Cohen (1988) interpreted effect sizes lower than 0.15 to be negligible, between 0.15 and 0.40 to be small, between 0.40 and 0.75 to be medium, between 0.75 and 1.10 to be large, and above 1.10 to be very large. Effect sizes were included among statistically significant survey results only; if a result is not statistically significant, then further analyses are not warranted.

Statistical analysis was also conducted to test internal consistency among survey items intended to measure the same concept. For example, the surveys used to inform this

study use multiple survey items to construct the indices employed in the SETIS and Teacher Surveys. Internal consistency is most often measured with Cronbach's alpha (α), a reliability coefficient that measures the correlations between different items on the same index. An alpha of 0.70 or higher is considered reliable; Alphas above 0.60 may be reliable, but questionable; and generally, Alpha scores below 0.59 are not considered reliable.

Qualitative responses (i.e., responses to open-ended questions) were read, reread, organized, and coded according to broad themes, taking into consideration that respondents sometimes mentioned more than one theme when responding to a question. The Results section includes tables comparing Pre and Post Survey results and narration describing the themes. The qualitative data included in each of the three surveys (SETIS, Teacher, and Administrator) in this study were designed to enrich our data by providing respondents the opportunity to answer questions using their own words.

# Results

## Special Education Technology Integration Specialists Survey

### Demographics

Of the 16-member 2011-2012 cohort, 14 special education technology integration specialists (SETISs) responded to the SETIS Survey—an 87.5% response rate. Survey respondents were from 11 counties; two counties had multiple SETISs participate in the survey.

SETIS were asked about their role in their school (Table 1). Of the 14 respondents 71.4% (10 of 14) answered that they were classroom teachers. The remaining four respondents (28.6%) chose the *other* category; when prompted to specify, three stated that they were special education teachers, and one responded he or she was a gifted teacher.

Respondents were also asked to indicate the programmatic level of their school. The responses show that the SETISs participating in the survey represented all school programmatic levels. Middle schools, with over 40% (six of 14 respondents), had the highest level of representation, while elementary schools came in second with just over 21% (three of 14). Two (14.3%) SETISs chose both elementary and middle school as their schools' programmatic level. The following three programmatic levels were chosen once (each representing 7.1% of the responses): high school, pre-k and elementary, and pre-k through high school (Table 1).

The SETISs were also asked if, to their knowledge, their school currently employed any other individual who had completed or is currently completing the Technology Integration Specialist (TIS) program. To this, almost 65% (nine of 14) responded *yes*, and 35% (five of 14) responded *no*. It is important to note that these TIS program participants may have been either a TIS or a SETIS.

**Table 1. SETIS Respondent Demographics**

| Characteristic | Number responses ($n$ = 14) | Percent response |
|---|---|---|
| **Role in school** | | |
| Total | 14 | 100 |
| Classroom teacher | 10 | 71.4 |
| Administrator | 0 | 0.0 |
| Support staff | 0 | 0.0 |
| Other | 4 | 28.6 |
| **Programmatic level of school** | | |
| Total | 14 | 100 |
| Elementary | 3 | 21.4 |
| Middle | 6 | 42.9 |
| High | 1 | 7.1 |
| Pre-K and elementary | 1 | 7.1 |
| Elementary and middle | 2 | 14.3 |
| Pre-K - High | 1 | 7.1 |

Near the end of the survey, SETISs were asked if they had conducted any formal staff development related to technology integration at their school within the past year. Of the 14 SETISs participating in the survey, 12 responded to this question. Only two, (16.7%) reported that they had conducted formal staff development. When asked to describe the staff development, the two respondents mentioned online enrichment resource training for parents, and instruction for special education teachers on the use of iPads during testing.

## Building capacity indices

To address EQ1—that is, *To what extent does the TIS program build the capacity of participating TISs to plan and facilitate: (a) teaching and learning, (b) information access and delivery, and (c) program administration?*—the quantitative sections of the SETIS Survey were aggregated to create four *capacity indices*: human, organizational, structural, and material. Each capacity index was composed of multiple survey items. As described earlier, each of the four capacity sections prompted SETISs to consider their level of agreement with a statement before (pre) and after (post) participating in the TIS program. Figures 1–4 illustrate the pre- and post-SETIS program means by individual survey item in each index. Figure 5 presents pre and post standardized capacity indices where responses to individual survey items were used to create mean scores for each index. It is important to note that the items and indices are based on a 5-point Likert-type scale, with the possible responses ranging from a low of 1 (*strongly disagree*) to a high of 5 (*strongly agree*).

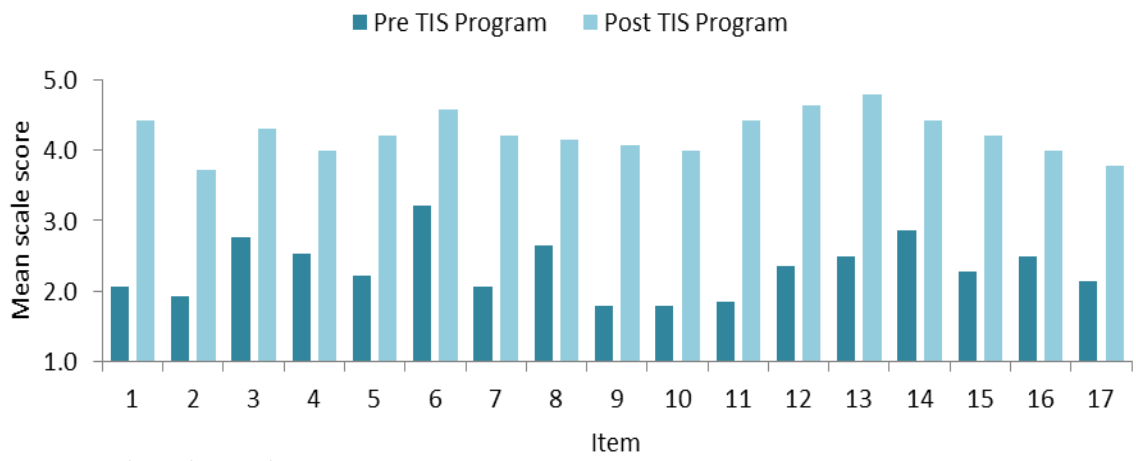
*Human capacity*, the first index in the survey, consists of 17 items measuring the intellectual proficiency and will of the SETISs' themselves. The items are:

1. I have a strong understanding of how to use/apply the resources from Thinkfinity.
2. I have a strong understanding of how to use/apply the resources from Curriculum Pathways (SAS).
3. I have a strong understanding of how to use/apply the resources from West Virginia Writes.
4. I use digital resources and tools to make assignments for students that are based upon their individual interests, abilities, and learning needs.
5. I have a strong understanding of how to use/apply the resources from TechSteps.
6. I am able to assess the quality and legitimacy of web resources.
7. I understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction.
8. I am able to identify the components of a URL and to ensure it is legitimate (e.g., protocol, host, domain, directory, port address, etc.).
9. I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Teachers (NETS-T).
10. I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Students (NETS-S).
11. I understand how to integrate Web 2.0 tools into instruction (e.g., podcasting, wikis and blogs, social networking, etc.).
12. I integrate digital resources/tools into my work with teachers, students, and administrators.
13. I understand how to effectively integrate technology into instruction to improve the quality of students' educational experiences.
14. I have a strong understanding of the county/school acceptable use policy.

15. I have a strong understanding of 21st century assessment.
16. I have a strong understanding of how to design and implement project-based learning (PBL) in the classroom.
17. I actively use action research to assess the impact of my teaching on student learning.

To see what, if any, change SETIS's perceived in their own human capacity over the course of the program, a pre- and post-SETIS program mean was calculated for each item (Figure 1). The items, consisting primarily of statements about understanding, use, and integration, each revealed statistically significant increases in mean scores from pre- to post-SETIS program. In fact, many items that had an average score of around 2 in the pre-SETIS program doubled their scores to 4 or higher in the post-SETIS program averages. The item that exhibited the largest change, from a pre average of 1.86 to a post average of 4.43, was Item 11, "I understand how to integrate Web 2.0 tools into instruction (e.g., podcasting, wikis and blogs, social networking, etc.)." Overall, the results indicate SETISs perceived significant gains in their intellectual proficiency and will.

**Figure 1. SETISs' Retrospective Pre-Post Assessment of Growth in Human Capacity**




*N* = 13 or 14, depending on the item

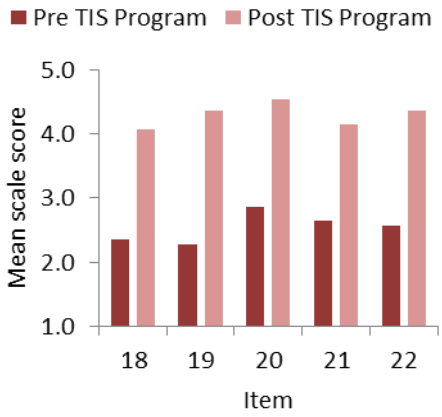
*Organizational capacity*, the second index, consists of five survey items centered on the interaction, collaboration, and communication among individuals within the SETIS system (such as other teachers and school administrators). The organizational capacity items are:

18. I model lessons that integrate technology for other teachers in the school.
19. I collaborate with others within the school to effectively integrate technology into instruction.
20. I serve as a resource to other teachers regarding the effective use of technology in the school.
21. I can effectively work with others to assess their learning and information needs (e.g., other teachers, students, administrators, etc.).

22. I have an ongoing dialogue with other staff members at the school about technology issues and how they can be addressed.

Among the pre-SETIS program items, the means ranged from 2.29 to 2.86 (Figure 2). The averages increased significantly among all the post-SETIS program items, ranging from 4.07 to 4.54. The item that showed the largest increase was Item 19, "I collaborate with others within the school to effectively integrate technology into instruction." This item's pre-SETIS program average was 2.29; the post-SETIS program average rose to 4.36. Overall, the comparison of pre and post averages for each item reveals significant increases in organizational capacity among SETISs in this program.

**Figure 2. SETISs' Retrospective Pre-Post Assessment of Growth in Organizational Capacity**




*N* = 13 or 14, depending on the item

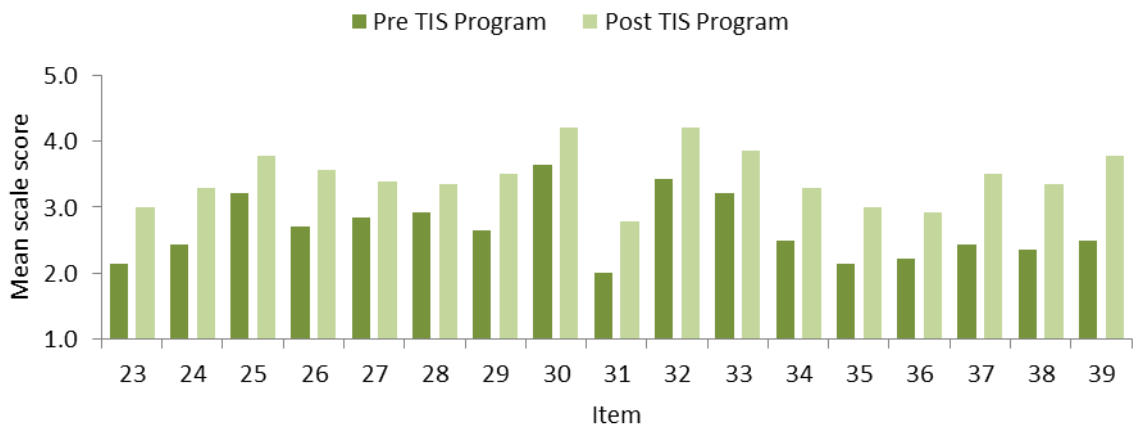
The next index, *structural capacity*, is composed of the following 17 survey items:

23. The school has set a time and place where staff meet in professional communities of practice to discuss how to effectively integrate technology into instruction.
24. Teachers at the school have time to co-plan and/or co-teach lessons that integrate technology into instruction.
25. Staff at the school understand the acceptable use policy.
26. Staff at the school understand key concepts and best practices regarding web literacy.
27. Staff at the school understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction.
28. Staff at the school are familiar with the technology components of the school's strategic plan.
29. The school has policies and procedures in place that support the use of Project Based Learning (PBL).
30. The school has policies and procedures in place that support the use of technology resources (e.g., Thinkfinity, Acuity, West Virginia Writes, etc.).
31. Staff at the school regularly use Thinkfinity and or Curriculum Pathways (SAS) as a resource in the classroom.
32. Staff at the school regularly use West Virginia Writes or another online writing program as a formative assessment of student writing.
33. The school has a plan in place to support the implementation of TechSteps.

34. Staff at the school regularly use TechSteps as part of their core content instruction.
35. Staff at the school understand the core National Education Technology Standards and Performance Indicators for Teachers (NETS-T).
36. Staff at the school understand the National Education Technology Standards and Performance Indicators for Students (NETS-S).
37. Staff at the school understand West Virginia's 21st Century Skills and Tools.
38. Staff at the school use Web 2.0 tools for collaboration and instruction.
39. Staff at the school frequently integrate digital resources/tools in their teaching.

The structural capacity index includes elements such as policies, procedures, and formalized practices—that is, elements that are part of the SETIS program, but have been set in place independently of the program. Among some of the items in this index, increases in pre to post averages appear to be moderate, yet, all items demonstrated statistically significant increases (Figure 3). The item exhibiting the largest change, "Staff at the school frequently integrate digital resources/tools in their teaching" (Item 39), rose from a pre average of 2.5 to a post average of 3.79. While all items rose significantly, this index revealed more conservative increases among pre and post item averages than the other indices.

**Figure 3. SETISs' Retrospective Pre-Post Assessment of Growth in Structural Capacity**




*N* = 13 or 14, depending on the item

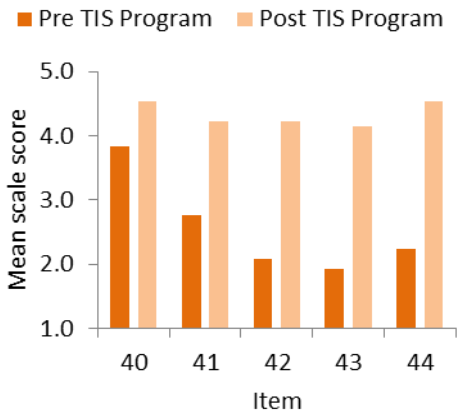
The final index, *material capacity*, is concerned with fiscal and/or other material supports available to people (e.g. SETIS candidates) within a system (e.g. the SETIS program). In this study, the material capacity index comprises the following five items focused upon technology resources:

40. I have access to a variety of high quality technology resources at my school (e.g., computer, digital camera, whiteboard, etc.).
41. I participated in a variety of professional development about integrating technology resources into instruction.

42. I feel I am able to direct staff in my school toward high quality technology resources that are relevant to their information needs.
43. I have the ability to develop useful technology resources for my school that address our information needs.
44. I know where to find useful and high quality technology resources that can be integrated into instruction.

All items revealed significant increases from the pre-SETIS program average to the post-SETIS program average (Figure 4). The item with the largest change was Item 44, "I know where to find useful and high quality technology resources that can be integrated into instruction." This item's pre-SETIS program average was 2.23, while the post-SETIS program average rose to 4.54. Overall, the results indicate SETISs perceived considerable increases in material capacity throughout the SETIS program.

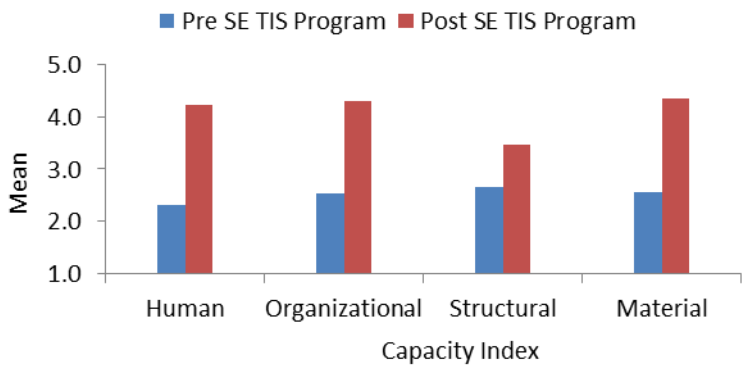
**Figure 4. SETISs' Retrospective Pre-Post Assessment of Growth in Material Capacity**




*N* = 13 or 14, depending on the item

To measure perceived overall growth in capacity resulting from participation in the SETIS program, the items in each of the indices were averaged together to create standardized capacity indices. Illustrated in Figure 5, significant increases were observed in all of the indices from pre- to post-SETIS program involvement. The human capacity index showed the most dramatic increase, rising from a preprogram mean score of 2.32 to a postprogram mean of 4.23. Conversely, while still statistically significant, the structural capacity index exhibited the smallest increase.

**Figure 5. SETISs' Retrospective Pre-Post Assessment of Growth by Type of Capacity**




*N* = 13 or 14, depending on the item

Paired-samples *t* tests were performed on each item as well as the standardized capacity indices; all differences were statistically significant (Table 2). There is a 95% certainty the differences observed from the pre-SETIS program item responses to the post-SETIS program item responses are not observed due to chance. Additionally, Cronbach's alpha (α), a reliability coefficient that measures internal consistency between different items on the same index (as with our capacity indices) was calculated for each index based on the preprogram survey items and postprogram survey items. An alpha of 0.70 is considered reliable; as

seen in Table 3 all alpha's from the preprogram and postprogram survey items are 0.713 and higher.

**Table 2. Standardized Capacity Indices: Pre and Post Means, *T* Test and Effect Size**

| | Pre | | Post | | Significance of difference | | | Cohen's | |
|---|---|---|---|---|---|---|---|---|---|
| Index | Mean | *SD* | Mean | *SD* | *t* | *df* | *p* | *d* | Effect size |
| Human capacity | 2.32 | 1.13 | 4.23 | 0.76 | 27.01 | 234 | <.0001 | 2.07 | very large |
| Organizational capacity | 2.54 | 1.10 | 4.29 | 0.60 | 13.13 | 67 | <.0001 | 2.04 | very large |
| Structural capacity | 2.67 | 1.07 | 3.46 | 1.02 | 13.24 | 236 | <.0001 | 0.79 | large |
| Material capacity | 2.57 | 1.10 | 4.34 | 0.64 | 12.96 | 64 | <.0001 | 2.04 | very large |

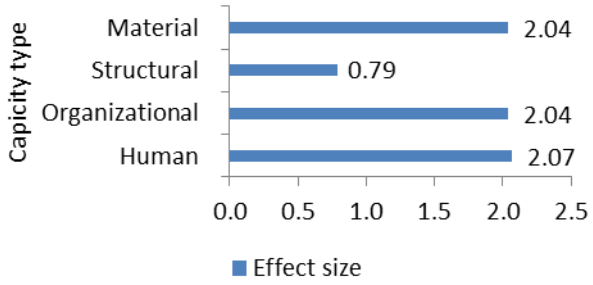
**Table 3. Standardized Capacity Indices: Reliability Coefficients**

| Index | Items included | Pre Survey α | Post Survey α |
|---|---|---|---|
| Human capacity | 1-17 | 0.925 | 0.915 |
| Organizational capacity | 18-22 | 0.915 | 0.792 |
| Structural capacity | 23-39 | 0.891 | 0.850 |
| Material capacity | 40-44 | 0.713 | 0.841 |

## Effect sizes

Effect sizes were computed to measure the magnitude of change from pre-SETIS program survey results to post-SETIS program survey results. Figure 6 illustrates the effect sizes observed among the capacity indices (see individual items results in Appendix D, page 85). As mentioned in the Data Analysis section, effect sizes between 0.75 and 1.10 are interpreted to be large, and those above 1.10 are considered very large. The results show very large effect sizes for the human, organizational, and material indices. The structural index exhibited the smallest effect size, however, at 0.79 it is still considered to be large.

**Figure 6. SETISs' Retrospective Pre-Post Assessment of Growth: Effect Size by Capacity Index**




Deconstructing the capacity indices by examining the effect size of each survey item permits us to see their individual strength and impact. As anticipated based on the effect sizes observed in the capacity indices, very large effects were seen in all of the human capacity items (1-17), organizational capacity items (18-22), and material capacity items (40-44). Effect sizes among the structural capacity items (23-39) ranged from 0.46 (medium effect) to 1.46 (very large effect).

Overwhelmingly, individual item effect sizes within the indices were large to very large, with the exception of structural capacity, which contained eight items exhibiting medium effects (Appendix D, Table 24, page 88). Human capacity exhibited the largest effect size by index as well as by item. In fact, the three largest effect sizes by individual item were found in the human capacity index. Survey Item 10 ("I have a strong understanding of the

core National Educational Technology Standards and Performance Indicators for Students [NETS-S]") yielded the largest effect size of all at 3.64. The second largest effect size, 3.6, was for Item 9 ("I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Teachers (NETS-T)". With an effect size of 3.5, Item 11 ("I understand how to integrate Web 2.0 tools into instruction [e.g., podcasting, wikis and blogs, social networking, etc."]) demonstrated the third largest effect size. The fourth largest effect size was found in the last item, 44 ("I know where to find useful and high quality technology resources that can be integrated into instruction"); part of the material capacity index, this item yielded an effect size of 3.46.

### Open-ended items

There were five essay-style, open-ended items on the SETIS Survey. These questions were meant to capture qualitative information about the SETIS program and enrich the quantitative data discussed above. While a few SETISs did not respond to the open-ended items, the overall response rate was relatively high, ranging from approximately 70% to 80%, depending on the item.

The first question, "What would you consider to be the most valuable aspects of participating in the TIS program?," received 11 responses. When analyzed, three dominant themes emerged among the answers: (a) *learning about technology resources/tools,* (b) *practice using technology*, and (c) *technology integration*. The most common theme, *learning about technology resources/tools*, was cited nine times. *Practice using technology* was mentioned four times and *technology integration* twice (Table 4, page 20). Note that some responses may contain one or more comment as well as one or more theme, therefore, the frequency of themes often exceeds the number of respondents. The comments listed below are samples of the predominant theme, *learning about technology resources/tools*:

> The most valuable aspect of participating in the TIS program is learning about the abundance of technology-related resources, strategies, and tools available to teachers. It makes the teaching process much easier for us and much more enjoyable to our students.
>
> The wealth of knowledge that you gain about technology. The ability to learn from others in the TIS program as well as the leaders. The introduction to various aspects of technology…webinars, Twitter and others that normally I would probably not have participated in.
>
> The wealth of technology information. I have always strived to use technology and am wanting to find more innovative ways to use it in my classroom. This past year I have been able to get a printer that prints in color, a mimio, and have had access to iPads, and have been able to incorporate them all into many of my lessons. Students have absolutely loved the changes and the environment of the classroom has changed also.

**Figure 7. SETISs' Retrospective Pre-Post Assessment of Growth in Four Types of Capacity: Effect Size by Item Number**

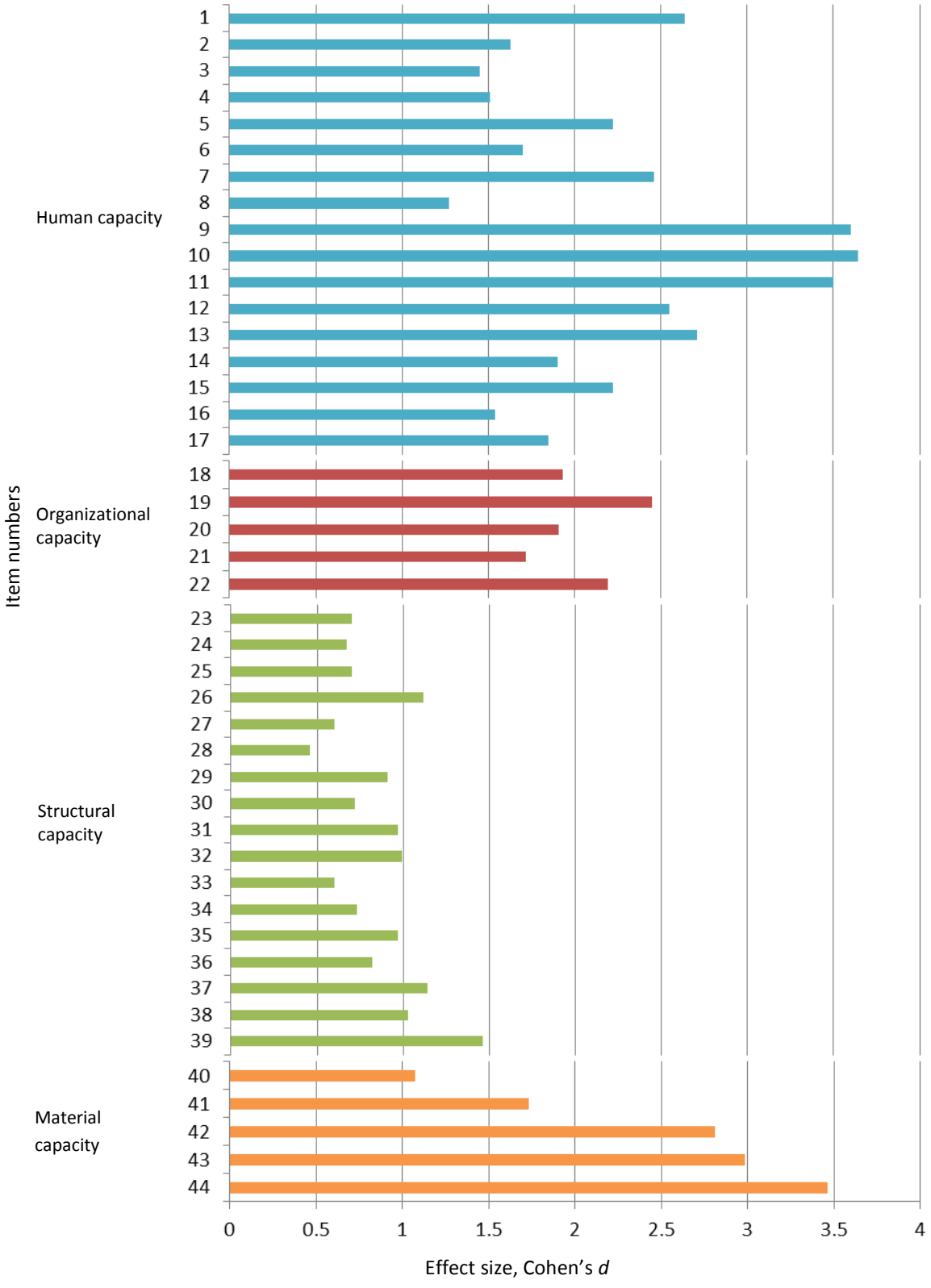


**Table 4. Valuable Aspects of TIS Program Participation**

| Theme | Frequency of comments* SETIS Survey (*n* = 11) |
|---|---|
| Learning about technology resources/tools | 9 |
| Practice using technology | 4 |
| Technology integration | 2 |

*Some respondents provided more than one comment; therefore, the frequency of comments may exceed the number of respondents (n).

The second question, "What would you change about the TIS program if you could?," garnered nine responses. As seen in Table 5, five themes were identified. The most prominent theme, with four references, was *program/content changes*. This theme included suggestions about accountability, guidance, and course work such as the "blended learning activity." Specific examples of this theme include:

> The only thing that I would possibly suggest is a reconstruction to the blended learning activity. I know that I struggled with this part of the program, and found it very difficult to conduct it and incorporate it as thoroughly in the classroom as I would like to. For special education classes, even inclusion one, it's difficult to do this, at least for me and at my school, due to the inability of many students comfort levels with the computer and the collaboration and support of the inclusion teacher is critical.
>
> I feel there needs to be another way of making people accountable rather than posting, reading, and replying on the discussion board.
>
> Maybe just a little more guidance along the way. That would help prod some of us to work!

Two other themes highlighted logistic concerns; time changes were mentioned twice and suggestions about meeting changes were mentioned three times. Of the time suggestions, one stated that too much time was given to complete assignments, while the other said there needs to be more time. The *meeting change* theme included requests for an increase in face-to-face meetings and more SETIS-only meetings (i.e., fewer meetings with the entire TIS cohort). The theme *no change* was cited twice. One SETIS wrote, "Although it is a time-consuming and challenging endeavor, I think everything we did this year has value and should remain in place." The last theme, *N/A*, was mentioned once.

**Table 5. Suggested Changes to the TIS Program**

| Theme | Frequency of comments* SETIS Survey (*n* = 9) |
|---|---|
| Program/content change | 4 |
| Time change | 2 |
| Meeting change | 3 |
| No change | 2 |
| N/A | 1 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

The third open-ended question asked the SETIS participants, "What structures are in place at your school that allow teachers to work meaningfully with the TIS?" From the 11 responses, four core themes were identified: (a) *administrative support*, (b) *common planning time*, (c) *TIS support*, and (d) *other* (Table 6). Over 60% (7/11) of the SETISs referred to administrative support as the leading structural support. *Common planning time*, with four mentions, was the second leading response. The other themes, *TIS support* and *other* were each mentioned once. Below are examples of the dominant theme, *administrative support*:

For the most part, there is a great deal of support from the administration.

There is definite support from the administrators and teachers are interested. There is time during in-service days to work together.

I have a lot of support from my administration, but their hands are often tied by scheduling and "higher ups" I know that next year, both will be working to give me a better schedule to work with teachers and students.

**Table 6. School Structures Supporting TIS and Teacher Collaboration**

| Theme | Frequency of comments* SETIS Survey (*n* = 11) |
|---|---|
| Administrative support | 7 |
| Common planning time | 4 |
| TIS support | 1 |
| Other | 1 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

The fourth open-ended question asked SETISs to describe ways they worked with the administrators at their school to address technology related issues or concerns. Eleven SETISs responded to the question and five overarching themes were discovered in the responses (Table 7). Over 35% (4/11) of the SETISs stated that they *discussed technology resources and needs with school administrators*. Three other themes, (a) *provide training*, (b) *collaborate with teachers*, and (c) *provide specific assistance* were each represented twice. One SETIS cited *none*, as they did not have the time to work with school administration. The following are key examples from the identified themes.

**Table 7. Addressing Technology Issues/Concerns: SETIS Support to School Administration**

| Theme | Frequency of comments* SETIS Survey (*n* = 11) |
|---|---|
| Provide training | 2 |
| Collaborate with teachers | 2 |
| Discuss resource/technology needs | 4 |
| Provide specific assistance | 2 |
| None | 1 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

*Discuss resource/technology needs:*

In every way. We have consulted on scheduling, student needs, staff needs, software upgrades, AUP, TechSteps, online testing.

Spoke with administrator to discuss technology needs and access.

*Collaborate with teachers:*

I was able to get my schedule changed slightly so that I could do more collaboration with teachers and work directly with students. During teacher meetings, I was given the opportunity to share with my staff resources and ideas about how to integrate technology in instruction.

*Provide training:*

I set up a plan for next year in providing technology training on specific programs I know and have used in the classroom successfully.

The final open-ended question asked respondents, "What barriers, if any, did you encounter in implementing what you learned as part of the TIS program?" Eleven SETIS participants provided answers and five themes became evident during data analysis (Table 8). The *lack of adequate time* appears to be the most frequent barrier with four of the 11 SETISs identifying this theme. One example is found in this statement: "There is not enough time to

implement everything we learn, especially with the demands of fulfilling our requirements for Acuity, West Virginia Writes, and TechSteps."

The second most common theme, *access to/quality of technology,* was mentioned three times. SETISs voiced concern about access to computers and computer labs, as well as bandwidth issues. The lack of *common planning time* among SETIS and their co-teachers was referred to twice. The lack of *collaboration* between SETIS and general education teachers was mentioned once. Finally, one SETIS responded *N/A*.

**Table 8. Barriers Encountered by SETISs**

| Theme | Frequency of comments* SETIS Survey (*n* = 11) |
|---|---|
| Time | 4 |
| Common planning time | 2 |
| Access to and quality of technology | 3 |
| Collaboration | 1 |
| N/A | 1 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

## Teacher Pre and Post Surveys

### Teacher colleague demographics

In all, there were 48 respondents to the Special Education Technology Integration Specialist (SETIS) Teacher Pre Survey (hereafter, Teacher Pre Survey) and 28 to the Special Education Technology Integration Specialist (SETIS) Teacher Post Survey (hereafter, Teacher Post Survey). However, when the data were cleaned, there were 40 Teacher Pre Survey responses and 27 Post Survey responses used in the analysis. Among the eight Pre Survey responses excluded from analysis, one was blank, one was completed by a school administrator, and six were from counties that had zero representation in the Post Survey. Only one Post Survey was excluded due to not having county representation in the Pre Survey. It is also important to note that SETISs may have invited one teacher colleague, or several teacher colleagues to complete the survey. Currently, there is no way to track how many teacher colleagues were invited to participate in the survey. Therefore, it is not possible to calculate a response rate. Starting with the 2012-2013 SETIS cohort, matching Teacher Pre and Post Survey respondents will be possible. While the new approach will not solve the issue of determining response rate, it will allow us to know if the same teachers who responded to the Pre Survey are also responding to the Post Survey.

**Table 9. County Location of Teacher Respondents' School**

| Provider | Pre (*n* = 48) | Post (*n* = 28) |
|---|---|---|
| Total | 48 | 28 |
| Barbour* | 3 | 0 |
| Boone | 1 | 1 |
| Greenbrier | 5 | 1 |
| Hampshire | 17 | 14 |
| Harrison | 3 | 3 |
| Jackson* | 1 | 0 |
| Marion* | 0 | 1 |
| Mineral | 4 | 1 |
| Putnam* | 2 | 0 |
| Raleigh | 4 | 3 |
| Randolph | 6 | 3 |
| Tucker* | 1 | 0 |
| Upshur | 1 | 1 |

*Counties excluded in data analysis due to lack of representation in either the Pre Survey or the Post Survey.

Teacher colleagues were asked to indicate the county location of their school. In the Teacher Pre Survey they cited 12 different counties; only nine counties were selected in the

Teacher Post Survey. As seen in Table 9, the counties with zero surveys in either the Pre or Post Survey were excluded from further data analysis due to a lack of equal geographic representation.

In addition to the location of their school, teacher colleagues were also asked a series of questions about the length of their teaching and SETIS coteaching experience, their role within their school, and the educational environment of the majority of their students. For analysis, only teacher surveys from counties that had representation in both the Teacher Pre and Post Surveys were included; this criterion resulted in analysis of 40 Pre Survey responses and 27 Post Survey responses.

While there were more respondents to the Teacher Pre Survey than the Teacher Post Survey, demographic analysis suggests both groups had like characteristics, see Table 10. Comparing Pre and Post Survey respondent demographics, the teacher colleagues reported similar roles, student general/special education populations taught, and years of teaching experience. Nearly all respondents to both surveys were teachers, who were about evenly divided between special and general education, with a slight shift from general to special education in the Post Survey. Over two thirds of both groups had more than 5 years of teaching experience. The main difference between these two groups of respondents, as shown in Table 10, was the length of time they had spent coteaching with a SETIS. There were only small variances in the *1 to 2 years, 2 to 4 years, more than 4 years* and *not applicable* answer choices. However, there were notable percent changes in the remaining two answer choices. Among the Pre Survey teacher colleagues, 10.0% selected the *less than one year* choice. That number rose to 36.0% among the Post Survey respondents. For the *we've never cotaught together before* option, the percentage went from 42.5% in the Pre Survey to 16.0% in the Post Survey. The increase of teachers stating they have *less than one year* of SETIS coteaching experience combined with a marked decrease in the percentage of teacher colleagues who had zero SETIS coteaching experience may indicate that the teachers are increasing their use and leverage of SETISs in their schools (see EQ4).

**Table 10. Teacher Colleague Survey Respondent Demographics**

| Characteristic | Pre percent (*n* = 40) | Post percent (*n* = 27) |
|---|---|---|
| **Role in School** | | |
| Teacher | 97.5 | 92.6 |
| Aide | 0.0 | 3.7 |
| Other | 2.5 | 3.7 |
| **Majority taught*** | | |
| General education | 50.0 | 44.0 |
| Special education | 40.0 | 48.0 |
| Teach an equal proportion of both | 10.0 | 8.0 |
| **Years of teaching experience*** | | |
| Less than 1 year | 5.0 | 4.0 |
| 1 to 5 years | 25.0 | 28.0 |
| 6 to 10 years | 25.0 | 24.0 |
| 11 to 15 years | 7.5 | 0.0 |
| More than 15 years | 37.5 | 40.0 |
| Never taught | 0.0 | 4.0 |
| **Length of time coteaching with SETIS*** | | |
| Less than 1 year | 10.0 | 36.0 |
| 1 to 2 years | 17.5 | 20.0 |
| 2 to 4 years | 15.0 | 16.0 |
| More than 4 years | 7.5 | 4.0 |
| We've never cotaught together before | 42.5 | 16.0 |
| Not Applicable | 7.5 | 8.0 |

*Missing *n* = 2

## Technology use

As introduced in the Measures and Covariates section (page 5), the Teacher Pre and Post Surveys were predominately dedicated to survey items inquiring about technology use among the SETIS coteachers and teacher colleagues. These items were designed to address EQ4, *In what ways have school administrators and teachers leveraged the TIS and the resources provided by the TIS?* Each item asks about the frequency with which teachers employ various teaching strategies, categorized into the following indices: *Facilitate, Design, Model, Promote* and *Engage*. The survey used the following 4-point response scale for all items: 1 (*Not usually*), 2 (*Sometimes*), 3 (*Often*), 4 (*Almost always*). We will begin with an examination of the Pre and Post Survey mean scores for the individual items in the five indices, followed by a look at statistics for each standardized technology use index.

Designed to capture the level of technology teacher colleagues use to facilitate and inspire student learning and creativity, the *Facilitate* index consists of the following survey items:

Facilitate 1. I use information from digital sources to promote learning and engage students in classroom activities.

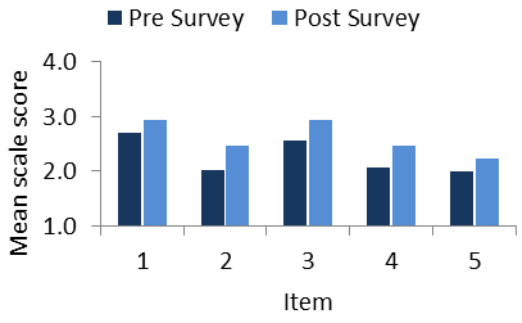
Facilitate 2. I require my students to use digital resources and tools for writing, collaboration, reflection, research, and other assignments.

Facilitate 3. I engage my students in real-world issues and authentic problem solving.

Facilitate 4. I require my students to gather information from sources other than their textbooks in order to complete their daily assignments (e.g., podcasts, videos, etc.).

Facilitate 5. I require my students to present information and actively teach content to their fellow students and/or community members.

**Figure 8. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores for Facilitation of Student Learning and Creativity by Item**




Pre Survey *n* = 40; Post Survey *n* = 26

Figure 8, shows higher Teacher Post Survey mean scores for all items compared with mean scores on the Pre Survey. The item that showed the largest increase, from 2.03 in the Pre Survey to 2.46 in the Post Survey, was Facilitate 2. However, *t* tests of the Pre and Post Survey Facilitate items yielded *p* values that were not at the significant level of 0.05 or lower (see Table 26, page 91 in Appendix E).

The next index, *Design*, comprised the following five survey items:

Design 1. I use a blend of both face-to-face and online environments to deliver instruction to my students.

Design 2. I design and/or implement projects that emphasize creative thinking and require students to engage in problem solving, decision making and experimental inquiry, using digital resources/tools when appropriate.

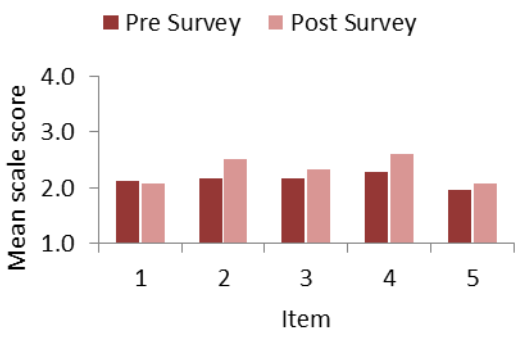
Design 3. I often design and/or utilize student-centered formative and performance-based assessments using available digital resources and tools (e.g., WV Writes, Acuity, TechSteps, etc.).

Design 4. I use digital resources and tools to make assignments for students that are based upon their individual interests, abilities, and learning needs.

Design 5. I require my students to set personal learning goals and to self-assess their progress toward meeting those goals, using digital resources and tools when available and appropriate.

All Design items, save Design 1, exhibited increases from the Pre Survey mean to the Post Survey mean (Figure 9). The largest increase was seen in Design 2, rising from a Pre Survey mean of 2.18 to a mean of 2.52 at Post Survey. *T* tests revealed no significant differences between Pre and Post Survey means as the *p* values, all above 0.05, ranged from 0.13 to 0.85 (see Table 27, page 92 in Appendix E).

**Figure 9. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores for Design of Digital Learning Experiences by Item**




Pre Survey *n* = 40; Post Survey *n* = 25

*Model*, the index intended to measure teacher colleague modeling of digital-age work and learning techniques/behaviors, was created using the following four survey items:

Model 1. I use digital resources and tools to communicate with students.

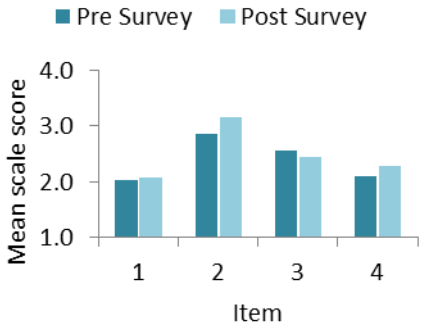
Model 2. I use digital resources and tools to communicate with my peers.

Model 3. I use digital resources and tools to communicate with parents and the community outside of my school.

Model 4. I customize the available digital resources and tools such as WV Writes, Acuity, TechSteps, etc. to personalize learning for my students.

Visible in Figure 10, three of the four survey items had higher mean scores in the Teacher Post Survey compared with the Pre Survey. While none of the items presented significant differences when *t* tests were performed (the *p* values for these items ranged from 0.13 to 0.84), the item with the largest increase in mean score was Model 2 (Table 28, page 92 in Appendix E).

**Figure 10. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores for Modeling Digital-Age Work and Learning by Item**




Pre Survey *n* = 40; Post Survey *n* = 25

The fourth index, *Promote*, assessed teacher colleague promotion and modeling of digital citizenship and responsibility. The index consists of three survey items:

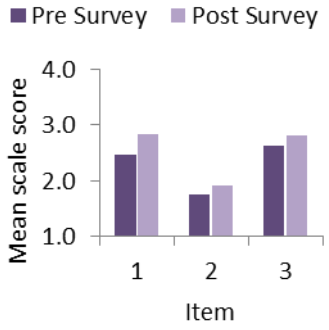
Promote 1. I advocate, model and teach my students about safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources.

Promote 2. I offer students opportunities to use digital resources and tools to participate in collaborative projects with students of other cultures that address current problems, issues, or themes.

Promote 3. Students in my class model appropriate online behavior and social interaction through digital activities in my classroom.

All three Promote items yielded increases in mean scores from the Teacher Pre Survey to the Post Survey (Figure 11). The first item (Promote 1) showed the largest increase, growing from a mean of 2.48 to 2.84. The *p* value for this item, along with those of the other two items, still exceeded 0.05, meaning none of the items were significantly different from Pre to Post Survey (Table 29, page 93 in Appendix E).

**Figure 11. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores for Promoting and Modeling Digital Citizenship by Item**




Pre Survey *n* = 40; Post Survey *n* = 25

The final index, *Engage*, includes four survey items measuring professional development, growth, and leadership activities among teacher colleagues. The Engage survey items are:

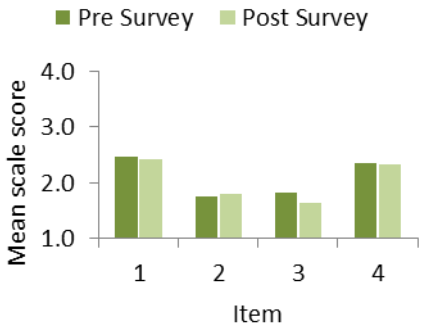
Engage 1. I participate actively in local communities of practice with my fellow teachers, either online or face-to-face.

Engage 2. I participate actively in online/global communities with other educators outside of my local community to gather and discuss resources and ideas related to student achievement and learning.

Engage 3. I model and teach other educators to use digital tools and resources to promote student achievement and learning.

Engage 4. I regularly seek out digital resources, tools, and research and evaluate its quality and relevance prior to using it in the classroom.

**Figure 12. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores for Engagement in Professional Development and Leadership by Item**



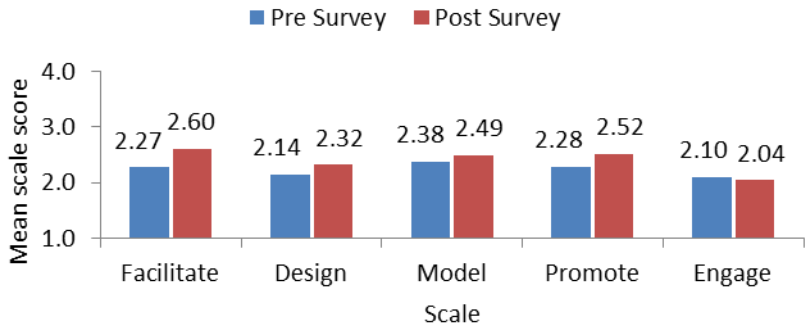

Pre Survey *n* = 40; Post Survey *n* = 24

Individual items in the *Engage* index evidenced little change from the Teacher Pre Survey to the Post Survey. Engage 2 showed a minor increase rising from a mean of 1.75 to 1.79. The remaining three items exhibited nominal decreases in mean scores (see Figure 12). With such minor changes, none of the differences from Pre Survey to Post Survey were statistically significant (see Table 30, page 93 in Appendix E).

Examined as individual items, there were no significant differences between the Teacher Pre Survey means and the Post Survey means; not one individual item's *p* value met the criteria of 0.05 or less. However, when the items are combined together to create their respective standardized technology use indices, the results showed some statistically significant change.

Figure 13 illustrates Teacher Pre Survey and Post Survey mean scores for each of the technology use indices. All of the indices except *Engage* demonstrated an increased mean when comparing the Pre and Post surveys; however statistical tests using a significance level of $p = 0.05$ indicate that only the *Facilitate* ($p = 0.0004$) and *Design* ($p = 0.0091$) indices had large enough increases to be statistically significant (Table 11). The *Promote* index approached statistical significance with a *p* score of 0.06.

**Figure 13. Comparison of Teacher Pre Survey and Post Survey Mean Scale Scores by Standardized Technology Use Scales**




Pre Survey *n* = 40; Post Survey *n* = 24–26

**Table 11. Differences in Standardized Technology Use Indices: Pre and Post Means, *T* Test and Effect Size**

| | Pre (2011) | | Post (2012) | | Significance of difference | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Index | Mean | *SD* | Mean | *SD* | *t* | *df* | *p* | Cohen's *d* | Effect size |
| Facilitate | 2.27 | 0.95 | 2.60 | 0.91 | 3.59 | 368 | 0.00 | 0.36 | small |
| Design | 2.14 | 0.96 | 2.32 | 0.88 | 2.57 | 363 | 0.01 | 0.20 | small |
| Model | 2.38 | 1.01 | 2.49 | 1.07 | 0.92 | 289 | 0.36 | NA | NA |
| Promote | 2.28 | 1.09 | 2.52 | 1.06 | 1.93 | 216 | 0.06 | NA | NA |
| Engage | 2.10 | 0.94 | 2.04 | 0.92 | 0.49 | 286 | 0.63 | NA | NA |

Using Cronbach's alpha to test internal consistency among items on each given index, Table 12 shows the Teacher Pre and Post Surveys' reliability coefficients (alphas) for the five indices. Remembering that an alpha of 0.70 and higher is considered reliable, nearly all of the indices presented high to very high reliability. Only one index yielded an alpha below 0.70. At 0.65, the Pre Survey *Promote* index may be reliable, but should be interpreted with caution.

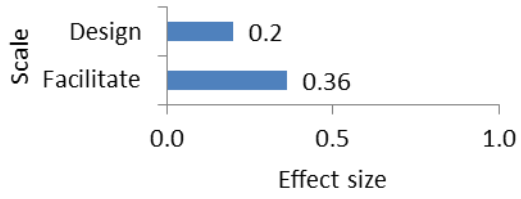
**Table 12. Technology Use Indices: Reliability Coefficients**

| Index | Items included | Pre Survey α | Post Survey α |
|---|---|---|---|
| Facilitate | Survey Section I: Facilitate 1-5 | 0.84 | 0.89 |
| Design | Survey Section II: Design 1-5 | 0.83 | 0.78 |
| Model | Survey Section III: Model 1-4 | 0.82 | 0.76 |
| Promote | Survey Section VI: Promote 1-3 | 0.65 | 0.74 |
| Engage | Survey Section V: Engage 1-4 | 0.74 | 0.74 |

## Effect sizes

Only two of the technology use indices, Design and Facilitate, showed statistically significant differences between the Teacher Pre Survey and the Post Survey results, making them eligible for determining effect size. Effect sizes for both indices (i.e., 0.2 and 0.36 respectively) were small (Figure 14).

**Figure 14. Teacher Pre Survey and Post Survey Effect Size by Standardized Technology Use Scales**




## Open-ended items

Teacher colleagues were asked to respond to three essay style open-ended questions to provide qualitative data for this study. These questions offered teacher colleagues the opportunity to use their own words to describe the role of a SETIS as well as what they hoped to accomplish working with a SETIS (Teacher Pre Survey) and what they actually accomplished working with a SETIS (Teacher Post Survey). The final open-ended question allowed teacher colleagues to provide any additional comments they had about the SETIS program.

The first open-ended question on the Teacher Pre and Post Surveys asked teacher colleagues to describe their perception of the role of a SETIS. In the Pre Survey, 29 of the 40 respondents answered this question; in the Post Survey 18 of 27 teacher colleagues responded to the question. The responses were coded into six broad themes, with one theme divided into five subthemes (see Table 13). In both the Pre and Post Surveys, two themes were dominant: *technology resource-use person for teachers*, and *incorporate/integrate technology-use in the classroom.*

The theme *technology resource-use person for teachers* was mentioned by 11 teacher colleagues in the Pre Survey and eight in the Post. The following are examples from the Pre Survey:

> To help with tech. questions and problems, to keep us informed of available resources and new ideas that can help us do our jobs better.
>
> To provide support and insight into technology that is available for teachers to use with students.
>
> To assist and encourage me as a teacher to move forward with the use of technology in my classroom because I feel uncomfortable in this area of education.

Examples from the Post Survey include the following:

> To provide technical assistance to teachers when needed. To share new and exciting websites and online activities for our staff and students.
>
> To work with and assist the classroom teacher in meeting special ed. student needs with the help of technology.
>
> In my opinion the role of the TIS is to support the education of students by training the classroom teacher on the latest technology, assisting the teachers in finding and utilizing resources to aid in connecting technology to CSO's [Content Standards and

**Table 13. Teacher Perception of SETIS Role**

| Theme | Frequency of comments* Pre Survey (*n* = 29) | Post Survey (*n* = 18) |
|---|---|---|
| Technology-use resource person: | | |
| for teachers | 11 | 8 |
| for students | 1 | 1 |
| for teachers and students | 7 | 3 |
| for entire school | 1 | 0 |
| in general | 2 | 1 |
| Facilitator of students' learning experience | 2 | 2 |
| Incorporate/integrate technology use in the classroom | 13 | 7 |
| A coteacher | 1 | 2 |
| Important to school | 1 | 1 |
| Not sure | 3 | 0 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

> Objectives], and to provide educational experiences for the students that will make learning exciting and relevant.

The other dominant theme was *incorporate/integrate technology-use in the classroom*. Teacher colleagues responded with this theme 13 times in the Pre Survey and seven in the Post Survey. Some Pre Survey examples include the following:

> I think the role of the SETIS is to effectively integrate a variety of technology resources and tools into the classroom.
>
> To provide ideas on incorporating technology into the classroom, not only for the teacher, but also for the students.
>
> I feel the role of the SETIS is to help teachers incorporate different medias and ideas into their lessons in order to engage the students they are working with as well as help create ideas for the teachers to use in all their classes.
>
> To help me integrate digital resources into my classroom more on a daily basis.

Post Survey examples of this theme include the following:

> Our SETIS is available to help us implement technology into our existing lessons as well as collaborate with us to create new lessons and units based on technology and problem-solving skills.
>
> The role of the SETIS is to help teachers design lessons that incorporate technology and can be differentiated to meet the needs of all students. The SETIS also works with students as they integrate technology into their personal learning.
>
> To support me in adding opportunities for students and myself to integrate technology into every aspect of education.

One theme that was repeated often in the Teacher Pre Survey, but not in the Post Survey, was *technology-use resource person for teachers and students*. In the Pre Survey this theme was mentioned seven times while it was sited three times in the Post Survey. No cause can be attributed to this shift since we do not know if the same teacher colleagues responded to this question in both surveys. It may reflect a change in the perceived SETIS role, or it may be a manifestation of differing opinions from different people. Most of the other themes remained consistent from Pre to Post Survey, save one. The *not sure* theme was found three times in the Pre Survey and not at all in the Post Survey.

The second open-ended question varied slightly from the Teacher Pre Survey to the Post Survey. In the Pre Survey it asked teacher colleagues what they *hoped to accomplish* by working with a SETIS throughout the school year. The Post Survey question asked what they *actually accomplished* by working with a SETIS. Respectively, there were 28 Pre Survey and

**Table 14. Teacher Expected and Observed Outcomes From Working With a SETIS**

| Theme | Frequency of comments* Pre Survey (*n* = 28) | Post Survey (*n* = 18) |
|---|---|---|
| Increased technology knowledge | 7 | 6 |
| Increased technology support for students | 1 | 0 |
| Increased technology use in the classroom | 12 | 6 |
| Use of specific technology tools (WV Writes, Tech Steps, Acuity, etc.) | 2 | 5 |
| Improved student performance | 3 | 2 |
| Enhanced student experience | 6 | 4 |
| Not sure | 1 | 0 |
| N/A | 1 | 1 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

18 Post Survey respondents to this question. Eight themes were identified, including *not sure* and *N/A* categories (Table 14).

Three major themes emer-ged: (a) *increased technology knowledge*, (b) *increased technology use in the classroom*, and (c) *enhanced student experience*. The leading theme in the Pre Survey was *increased technology use in the classroom*, with 12 observations. This theme remained strong in the Post Survey, with six teacher colleagues identifying it as an accomplishment resulting from working with a SETIS.

Some Pre Survey examples include the following:

> I hope to accomplish a more blended classroom environment by using face to face and also online learning. I hope to see technology as a part of my daily lessons and increase student engagement. With the help of the SETIS I hope to see a spike in critical thinking in our students and quality projects.
>
> To become more comfortable with using the tech. available in my classroom and use it more productively with my students on a daily basis.
>
> I hope to increase the amount of technology and 21st Century skills my students use.
>
> I hope to learn how to incorporate different technologies and medias into my classroom to help engage and teach my students.
>
> Integration of digital resources with my students at levels that are appropriate for them.

Post Survey examples of this theme include the following:

> I accomplished a greater confidence in incorporating technology into my lessons. My students, however, accomplished so much more because of the skills of our SETIS.
>
> I learned more about online resources such as online interactives (Twiddla) and how to build a website. Collaborize classroom also became an integral part of our classroom (and beyond) learning.
>
> They provided me with virtual field trips I could use with the preschoolers I teach.

The second theme that remained dominant, despite fewer teacher colleagues responding to the question, was *increased technology knowledge* with seven observations in the Pre Survey and six in the Post Survey.

Some Pre Survey examples include the following:

> To further extend my knowledge base of best practices by incorporating technology as much as possible into my daily instruction.

> I hope to learn more about integrating technology and become more familiar and comfortable with it.
>
> To learn more about what is available to me and my class using technology.

Post Survey examples of this theme include the following:

> I learned many new tools and how to use them.
>
> I accomplished learning how to use several (new to me) technology tools to aid in implementing the required CSO's [Content Standards and Objectives]. Our SETIS is continuously finding and sharing new ways to use the technology that is available at our school.
>
> I learned how to provide blended instruction for student's with visual impairments using face-to-face contact and online interactions. I am continuing the online interactions even though I am no longer working at that school. I also learned firsthand about some additional technology tools to support students with [Title] VI. With The SETIS at my regular job placement I learned about potential resources and received support dealing with technological glitches.

The third main theme, *enhanced student experience*, produced six observations in the Pre Survey and four in the Post Survey.

Some Pre Survey examples include the following:

> I hope to find ways to open technology to my students to enhance their educational experience.
>
> I hope to give our SE students more opportunities relevant to their learning level.
>
> To make my classroom the best learning environment as possible for my students.

Post Survey examples of this theme include the following:

> My students were able to have more direct instruction.
>
> We created many problem solving, student-centered, and technology enhanced lessons and units that provided engaging learning for our students.

There were also several comments, mostly in the Post Survey, on the use of specific technology tools. While not a certainty, it is reasonable to attribute this increase to the rise in teacher colleague knowledge and awareness of technology resources available through interaction with a SETIS.

The final open-ended item on both the Teacher Pre and Post Surveys was one that allowed teacher colleagues to provide any additional comments they had about the SETIS program. In the Pre Survey, 13 teachers wrote an additional comment; in the Post Survey four teachers responded to the item. Seen in Table 15, six overarching themes were discovered in these comments. Results from the Pre Survey indicate mainly positive comments concerning the SETIS program, followed by comments centered on benefits teachers and students receive from the SETIS and concerns about the availability of technology within classrooms. As you will see from the Pre Survey samples below, some comments discuss more than one theme:

> I am excited for a new year with the SETIS program. I look forward to the new ways of learning and teaching.
>
> Good idea as long as the technology is up to date and working properly.

> I think this program is a great asset to our school and the group of kids that we teach. I hope that the knowledge gained will accompany funds to have new technologies actually in all classrooms.
>
> This program has great promise for both educators and students because of the content it can deliver and because of the collaborative example it sets for the students.

Because there were only four responses to the additional comments item on the Post Survey, it was not possible to compare the Pre Survey results to the Post Survey results. However, all of the comments were complementary of the SETISs, indicating satisfaction and successful relationships. Here are two examples from the Post Survey comments:

> The TIS is a big piece in my network. She gives me the support I need to venture into technology when I would not have otherwise.
>
> I am grateful to be co-teaching with my SETIS. She brings new ways of looking at the curriculum to my classroom and she is a wonderful resource for other classes that I teach as well.

**Table 15. Teacher Colleague Additional Comments**

| | Frequency of comments* | |
|---|---|---|
| Theme | Pre Survey (*n* = 13) | Post Survey (*n* = 4) |
| Complementary of SETIS | 2 | 4 |
| Complementary of SETIS program | 5 | 0 |
| Teachers benefit | 0 | 1 |
| Teachers and students benefit | 3 | 1 |
| Concerned about availability of technology in classroom | 3 | 0 |
| Not sure | 1 | 0 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

## Administrator Pre and Post Surveys

### School administrator demographics

There were a total of nine respondents to the Special Education Technology Integration Specialist (SETIS) Administrator Pre Survey (hereafter, Administrator Pre Survey), and 13 to the Special Education Technology Integration Specialist (SETIS) Administrator Post Survey (hereafter, Administrator Post Survey; see Table 16). However, as with the Teacher Pre and Post Surveys, only counties that responded to both the Administrator Pre Survey and Post Survey were included in the data analysis. After excluding counties that did not have representation in both the Pre and Post Surveys, there were eight Pre and Post Survey responses included in the analysis.

School administrators were asked to identify the role they held within their school. The options were *principal, assistant principal,* and *other*. Illustrated in Table 17, the majority of respondents were school principals; representing 62.5% in the Administrator Pre Survey, and 87.5% in the Post Survey. The remaining respondents were all assistant principals, at 37.5% in the Pre Survey and 12.5% in the Post Survey. No respondents chose the *other* category. Comparing the roles between the Pre and Post Surveys, it is clear there was a higher percentage of assistant principals participating in the Pre Survey than the Post Survey. Conversely, a higher percentage of school principals participated in the Post Survey than the Pre Survey.

The Pre Survey also included an item about awareness of SETIS presence within the administrator's school. They were asked to respond *yes* or *no* to the following statement, "Before receiving this survey, I was aware that my school would have a SETIS for the 2011-12 academic year." Six out of the eight administrators (75.0%) confirmed they were, indeed, aware their school would have a SETIS throughout the school year.

Likewise, the Post Survey contained an item not included in the Pre Survey. This item asked administrators, "Based on your classroom observations this school year, has the SETIS candidate increased student engagement in curricular activities through the increased use of technology?" The responses were overwhelmingly positive (Figure 15). Of the eight respondents, six gave this question the highest possible rating (5) and the remaining two chose the second highest rating (4).[5]

**Table 16. County Location of Administrator Respondents' School**

| Provider | Pre (*n* = 9) | Post (*n* = 13) |
|---|---|---|
| Total | 9 | 13 |
| Boone | 1 | 1 |
| Greenbrier | 1 | 1 |
| Hampshire | 1 | 1 |
| Harrison* | 0 | 2 |
| Marion* | 0 | 1 |
| Mineral | 1 | 1 |
| Mingo* | 0 | 1 |
| Putnam | 1 | 1 |
| Raleigh | 2 | 2 |
| Randolph | 1 | 1 |
| Tucker* | 1 | 0 |
| Upshur* | 0 | 1 |

*Counties excluded in data analysis due to lack of representation in either the Pre Survey or the Post Survey.

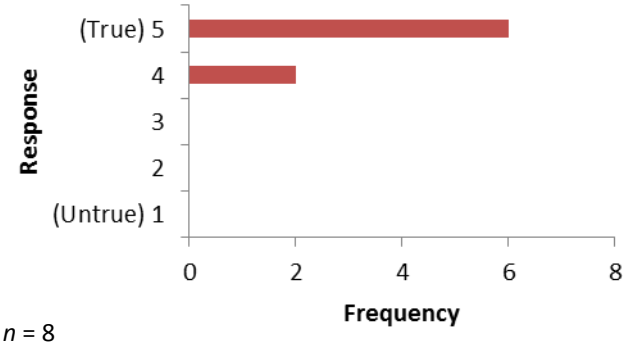
## Use of SETISs

The Administrator Pre and Post Surveys were focused primarily on answering EQ4: *In what ways have school administrators and teachers leveraged the TIS and the resources provided by the TIS?* These surveys included fewer items than the Teacher Pre and Post Surveys, and were constructed differently than the other surveys in the study (see Appendix C, page 77 for the full version of surveys). Beyond the demographic information discussed in the previous section, the Administrator Pre Survey consists of six multiple-choice statements and three open-ended items. While the Post Survey also contains three open-ended items, it has one additional multiple-choice item (seven total).

**Table 17. Role of Administrator Respondents in Their Schools**

| Role | Pre percent (*n* = 8) | Post percent (*n* = 8) |
|---|---|---|
| Principal | 62.5 | 87.5 |
| Assistant principal | 37.5 | 12.5 |
| Other | 0 | 0 |

**Figure 15. Administrator Post Survey: Increased Student Engagement via Use of Technology**




*n* = 8

[5] Note: The administrators who responded to the Pre Survey are not necessarily the same as those responding to the Post Survey.

The Administrator Pre Survey multiple-choice items are phrased to ask administrators how they intend to use their SETIS, such as, "I plan to ask my SETIS to model the integration of technology for their coteachers and others within the school." The Post Survey, on the other hand, asks school administrators to report how they actually utilized their SETIS during the course of the school year. Looking at the same example, the multiple-choice statement becomes, "My SETIS modeled the integration of technology for his/her coteachers and others within the school." Further, both the Pre and Post Surveys utilize a 5-point Likert-type scale. However, the indices differ slightly. The Pre Survey scale is a rating of likelihood, with the lowest option, 1 (*unlikely*) and the highest, 5 (*likely*). The Post Survey also includes a response range from 1 as the lowest possible choice to 5 as the highest. It is a scale of agreement, however, ranging from complete lack of agreement, indicated by selecting 1 (*untrue*), to complete agreement, indicated by selecting 5 (*true*). Pre and Post Survey items are listed in Table 18.

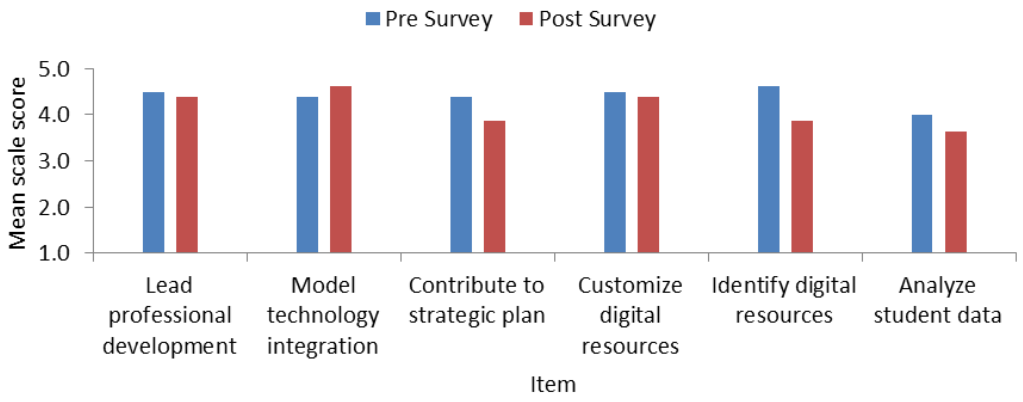
**Table 18. Administrator Pre and Post SETIS Use Survey Items**

| Item | Pre Survey | Post Survey | Statement |
|---|---|---|---|
| Lead professional development | I plan to ask my SETIS to share. . . | My SETIS shared. . . | . . . what he/she has learned by leading professional development for the other teachers in my school |
| Model technology integration | I plan to ask my SETIS to model. . . | My SETIS modeled. . . | . . . the integration of technology for his/her coteachers and others within the school |
| Contribute to strategic plan | I anticipate asking my SETIS to assist. . . | My SETIS assisted. . . | . . . me in developing the school's strategic plan with regard to information and technology needs |
| Customize digital resources | I expect that my SETIS will assist. . . | My SETIS assisted. . . | . . . his/her coteachers in customizing available digital resources and tools such as WV Writes, TechSteps, Acuity, Edmodo, Thinkfinity, etc. to personalize learning for students |
| Identify digital resources | I will request that the SETIS. . . | I requested that the SETIS. . . | . . . work with teachers to identify digital resources and tools that effectively integrate technology into their current curriculum |
| Analyze student data | I will ask the TIS. . . | I asked the SETIS. . . | . . . to conduct analyses of student data and engage in action research to help me understand the impact of technology integration at my school |

After exclusion for counties that did not have representation in both the Administrator Pre and Post Surveys, eight survey responses remained for analysis. While eight survey responses provide a small cohort and results must be interpreted with caution, the participating school administrators completed all multiple choice survey items.

Illustrated in Figure 16, results indicated school administrators' intention to utilize their SETISs was high. Among the Pre Survey mean scores, the lowest average was 4.0 (*analyze student data*) while the highest was 4.6 (*identify digital resources*). Still, despite their high level of intent in the Pre Survey, all Post Survey items save one (*model technology integration*) showed slight decreases in their mean scores. The differences though, even for the one item that showed an increase in survey mean, were not statistically significant (see Table 31, page 95 in Appendix F).

**Figure 16. School Administrator Expected and Actual SETIS Use by Survey Item**




## Open-ended items

The essay style, open-ended items on the Administrator Pre and Post Surveys are congruent with the open-ended questions on the Teacher Surveys. The first item asked school administrators to describe the role of a SETIS. As shown in Table 19, most administrators expected SETISs to take the role of a resource person for teachers. This trend was consistent across the Pre and Post Surveys suggesting the role for SETIS that administrators expected, proved to be their actual role throughout the school year. Selected examples are listed below.

**Table 19. Administrator Perception of SETIS Role**

| | Frequency of comments* | |
|---|---|---|
| Theme | Pre Survey (*n* = 8) | Post Survey (*n* = 8) |
| Technology use resource person for teachers | 6 | 8 |
| Technology use resource person for teachers and students | 2 | 0 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

The following are examples from the Pre Survey:

To help teachers integrate technology in their classrooms. This includes helping them find resources, operate equipment, and trainings.

I believe the role of the SETIS is to assist coworkers with the technology and help to eliminate the hesitance of integrating it into the lessons. She should provide suggestions, answer questions, and be willing to model lessons for her coworkers.

Examples from the Post Survey include the following:

> Serve as a technological resource for professional development, digital resources and tech tools and to assist in the implementation of such into the curriculum and instructional practices of our teachers.
>
> To be an effective resource for the teachers to be able to collaborate with in order to improve their technology skills.

The second open-ended question asked school administrators to describe the outcomes they expected to see (Pre Survey) and the outcomes they actually observed (Post Survey) as a result of having a SETIS in their school. Seven administrators responded to this question in the Pre Survey, and eight in the Post Survey. Pre Survey responses were varied, with administrators citing increased technology use, improved student performance, and staff development/technology integration as their leading expectations (Table 20). However, comments shifted focus in the Post Survey with most administrators naming increased technology use as the outcome they observed in their schools as a result of having a SETIS. The following are examples from the Pre Survey:

**Table 20. Administrator Expected and Observed Outcomes From Having a SETIS**

| | Frequency of comments* | |
|---|---|---|
| Theme | Pre Survey (*n* = 7) | Post Survey (*n* = 8) |
| Increased technology use | 3 | 6 |
| Provide technology support | 1 | 1 |
| Improved student performance | 4 | 1 |
| Staff development – technology integration | 3 | 2 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

> Technological use will increase amongst teachers and students. Integration of technology to assist with improving student achievement. Technology will become integrated into our teacher's instructional practices and our students learning behaviors. (Increased technology use and Staff development/technology integration)
>
> I want our school to integrate technology and use it as a tool. I do not want it to be viewed as an extra something to do in the classroom. I hope that the SETIS can help to accomplish this goal, but also supply suggestions and help to her co-workers to assist our at risk students with technology interventions to keep them interested and successful. (Improved student outcomes and Staff development/technology integration)

Examples from the Post Survey include the following:

> We were able to set-up and incorporate i-pod lab into our reading language arts classes and anticipate the integration into all classes for next year. Greater differentiation of instruction using technology as a tool. Professional development for all staff with tech tools (i-pods) and digital resources (plato learning, acuity,edmodo, etc.). (Increased technology use and Staff development/technology integration)
>
> I noticed that more teachers started using technology and went to the TIS for needed support in the area of technology. (Increased technology use)

Few school administrators provided additional comments in either the Pre or the Post Survey. Of the four Pre Survey respondents, most were complementary of the SETIS or the SETIS program. One school administrator voiced concern about funding sources for the

SETIS. Only one administrator offered an additional comment in the Post Survey; this comment was very complementary of the work the SETIS had accomplished in their school.

There were not enough responses to provide an adequate number of samples; the results are outlined in Table 21.

**Table 21. Administrator Additional Comments**

| | Frequency of comments* | |
|---|---|---|
| Theme | Pre Survey (*n* = 4) | Post Survey (*n* = 1) |
| Complementary of SETIS | 2 | 1 |
| Complementary of SETIS program | 1 | 0 |
| Monetary concerns | 1 | 0 |

*Some respondents provided more than one comment, therefore, the frequency of comments may exceed the number of respondents (*n*).

# Discussion

This study examines survey results from the three primary stakeholder groups in the SETIS program: SETISs, teacher colleagues, and school administrators. These survey results enable us to address each of the evaluation questions chosen to measure the implementation, use, and impact of the SETIS program.

## Evaluation Question 1

The first evaluation question—*To what extent does the TIS program build the capacity of participating TISs to plan and facilitate: (a) teaching and learning, (b) information access and delivery, and (c) program administration?*—is addressed through the Special Education Technology Integration Specialist (SETIS) Survey (hereafter, SETIS Survey) capacity indices.

The organizational and human capacity indices of the SETIS Survey provide evidence of the increased capacity of SETIS to plan and facilitate *teaching and learning*. Organizational capacity survey items assessed the ability of SETISs to interact, communicate, and collaborate with others (i.e. *teach*). All items from this index demonstrated statistically significant increases in SETISs' retrospective postprogram means compared with their preprogram means, and very large effect sizes. Of particular note, the item yielding the largest increase was, "I collaborate with others within the school to effectively integrate technology into instruction," indicating increased capacity among SETIS to teach teachers how to optimize technology use in their classrooms. The human capacity index provided support for gained capacity among SETISs to *plan and facilitate learning*. Of all the indices, this index showed the greatest increase in retrospective pre-to-post means, as well as the largest effect size. Additionally, all 17 of the individual items comprising this index showed significant increases in mean scores and very large effect sizes. The largest gains were seen in the human capacity items, with eight of the 17 items yielding mean scores that rose by 2+ points on a 5-point scale in respondents' retrospective pre to post self-assessments of their capacity. Further evidence of enhanced learning among SETISs can be seen in the results from the open-ended survey item, "What would you consider to be the most valuable aspects of participating in the TIS program." Nine of the 11 respondents provided answers that fell within the theme, *learning about technology resources/tools*.

The SETIS Survey's material capacity and organizational capacity indices focused on the second part of EQ1—that is, measuring perceived increases in SETISs' capacity to plan and facilitate *information access and delivery*. Resource access, development, and sharing were each covered in the material capacity index. All five survey items produced statistically significant differences in survey means (three of five items showed an increase in mean score greater than 2 points on a 5-point scale) along with large or very large effect sizes. Further, the survey items in the organizational capacity index provide additional validation that SETISs experienced enhanced capacity in delivering technology integration to their schools.

The structural capacity index examined the final component to EQ1, SETISs' capacity to plan and facilitate *program administration*. In general terms, structural capacity denotes elements such as policies, procedures, and formalized practices. For the purposes of this survey, the items making up the structural capacity index concentrated on policies and practices SETISs observed at their schools and with their teacher colleagues. While SETISs do not directly change policies, procedures, and formalized practices at their schools, positive impact on these elements may be evident if SETISs are capable of successful program administration. As discussed in the results section, while increases in mean scores on retrospective pre- to postprogram items were not as dramatic, all items in this index remained statistically significant. Effect sizes ranged from medium to very large. These results indicate SETISs are having a positive and meaningful impact on structures within the schools they support.

Overall, the 2011-2012 SETIS cohort perceived substantial increases in their capacity to plan and facilitate all of the components in EQ1. Results from the SETIS Survey produced more statistically significant differences in mean scores as well as larger effect sizes than either of the other two surveys deployed in this evaluation study. The strength of these results provide reasonable evidence that the 2011-2012 SETIS program equipped its candidates with the capacity necessary to implement technology integration techniques within their schools and classrooms.

## Evaluation Question 2

To answer the second evaluation question—*To what extent do TISs encounter barriers to successful program implementation (e.g., financial, temporal, relational, etc.)?*—we will use findings from the SETIS Survey and the SETIS Administrator Survey. From the SETIS Survey, three items pertained to this question. One item comes from the material capacity index (Item 40) asking SETISs if they have access to high quality technology resources (e.g. computers, digital cameras, whiteboards) at their schools. The retrospective preprogram mean for this item was 3.85 on the following 5-point scale: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*). The postprogram mean was 4.54. While this result is a significant increase, it is not as dramatic as increases seen for other material capacity items; it is important to note that the preprogram mean for this item was considerably higher than the preprogram means for the other items in the index. Accordingly, this item generated a *large* effect size while the other items in the same index returned *very large* effect sizes. These findings indicate access to high quality technology resources at schools was not seen as a barrier before the SETIS program, and was seen as even less of a barrier after the program.

The remaining items drawn from the SETIS Survey to address the question about barriers were open-ended questions. Results from the first question—"What would you change about the TIS program if you could?"—revealed four major themes (plus a *N/A* category for one response). Of the nine responses, four cited a desire to see program and/or content change. These recommendations included more stringent accountability, increased guidance, and changes to specific course assignments. Three respondents suggested meeting changes; specifically, SETISs want more face-to-face and SETIS-only meetings. Two re-

sponses were centered on time changes with one wanting more time and the other suggesting less time to complete assignments. Two SETISs stated that they did not wish to see any changes in the program. While the responses to this question vary considerably, it would seem most SETIS candidates would like a program with amplified accountability and added SETIS-only in-person meetings.

The second open-ended question, and most informative to answering EQ2 was, "What barriers, if any, did you encounter in implementing what you learned as part of the TIS program?" Of the 11 respondents, four named *time* as their greatest barrier. SETISs expressed a lack of time in general, a shortage of time spent in a classroom setting, and not enough time to implement what they have learned in the program. Three respondents cited *access to/quality of technology* as the primary barrier they encountered, including limited internet access and broadband/bandwidth issues; limited access to computer labs and computer access for students outside of the classroom; and difficulty in acquiring student e-mail accounts. A shortage of *common planning* between teacher colleagues and SETISs was mentioned twice and a lack of *collaboration* (also between teachers and SETISs) was identified once.

A final barrier worthy of mention was discovered in the Special Education Technology Integration Specialist (SETIS) School Administrator Pre Survey (hereafter, Administrator Pre Survey). Administrators were asked if they were aware their school would have a SETIS during the 2011-2012 school year; 75% responded they did know a SETIS would be in their school. Ideally, 100% of school administrators would be aware of the presence of a SETIS in their schools. This finding could indicate a barrier in the communication flow between the key stakeholders of this program.

Generally, SETIS and school administrators in the 2011-2012 SETIS program reported varied and relatively moderate barriers. From the perspective of the SETISs, a lack of time was their largest barrier. Access to technology tools among SETISs was not an issue, however, computer access for students and internet speed was a major concern. The SETISs also identified several things they would change about the program; while these may or may not be barriers to program implementation, they should be taken under consideration. Finally, as demonstrated in the Administrator Survey, 25% of the administrators participating in the survey were not aware a SETIS would be present in their schools.

## Evaluation Question 3

Findings from the Special Education Technology Integration Specialist (SETIS) Teacher Pre and Post Surveys (hereafter, Teacher Pre and Post Surveys), along with the SETIS Administrator Pre and Post Surveys, were used to address EQ3, *To what extent is the level of technology integration in TIS schools positively impacted through participation in the program?* The first evidence of positive impact was an increase in the percentage of teachers with SETIS coteaching experience. Teacher Pre Survey results revealed only 10% of teacher colleagues had less than 1 year of coteaching experience with a SETIS, while more than 40% of the teachers in the Pre Survey had never cotaught with a SETIS. The percentage of teachers who had less than a year of coteaching experience rose to 36% in the Teacher Post Survey by the end of the school year, while the percent with no coteaching experience

dropped to 16%—denoting a substantial increase in teacher colleagues working with a SETIS for the first time during the 2011-2012 SETIS program.

Open-ended questions from both the Teacher and Administrator Pre and Post Surveys proved to be valuable sources of information while measuring the positive impact of school participation in the SETIS program. When teacher colleagues were asked what they hoped to accomplish working with a SETIS (Teacher Pre Survey) and what they actually accomplished (Teacher Post Survey) the predominant themes were *increased use of technology in classrooms* (Pre = 42.9%, Post = 33.3%), *improved technology knowledge among teachers* (Pre = 25%, Post = 33.3%), and *enhanced student experiences* (Pre = 21.4%, Post = 22.2%). These results imply SETISs were successful in not only building technology knowledge among teachers and integrating technology use in classrooms, but also positively impacting student experiences. Sustaining this finding, 75% (6/8) school administrators stated they observed increased technology use as a result of having a SETIS in their schools. Furthermore, from the Teacher Post Survey, of the 4 respondents who wrote additional comments, 100% were complimentary of the SETIS individual they worked with throughout the school year.

The technology use indices from the Teacher Survey were designed to help answer EQ3 as well. Though the individual items that make up the Facilitate, Design, Model, and Promote index items revealed increases in mean scores from the Pre Survey to the Post Survey, the results were not large enough to be considered statistically significant. Individual items on the Engage index changed very little from Pre to Post means and were far from significant levels. When the individual items were aggregated to create the Technology Use indices, Facilitate, Design, Model, and Promote indices demonstrated increased mean scores. Two indices, Facilitate and Design, produced significant differences from Pre to Post Survey means, and Promote yielded a $p$ value that was near significance. Shadowing the individual item results, the Engage index underwent little change. The effect sizes were small for the two indices that did show significant results (Facilitate and Design). All in all, the results for the technology use indices were not large enough to indicate positive or negative changes.

SETIS activities that led to positive impacts in classrooms were associated with notable increases in coteaching experience among teacher colleagues and SETIS, improved technology integration in classrooms, raised technology knowledge among teachers, and enhanced student experiences. Although the technology use indices from the Teacher Pre and Post Surveys did not show dramatic shifts or large effect sizes, most of them revealed positive increases in mean scores.

## Evaluation Question 4

The fourth evaluation question—*In what ways have school administrators and teachers leveraged the TIS and the resources provided by the TIS?*—is answered using many of the same findings discussed in EQ3, in addition to items from the SETIS Administrator Pre and Post Surveys and open-ended questions from the SETIS Survey. That school staff began leveraging SETIS services during the course of the year can be seen in increased teacher colleague reports of coteaching experience with SETISs at the end of the school year compared to the beginning. Also, as discussed in EQ3, teachers and administrators reported

increased technology use in classrooms (with teacher's also citing improved technology knowledge), further supporting leverage of SETIS candidates and resources. Further evidence of leverage can be detected in survey items focused on expected and actual use of SETIS candidates and resources. As considered in the EQ3 discussion, teacher colleagues reported similar expected and actual accomplishments resulting from working with a SETIS during the 2011-2012 school year. Moreover, school administrators predominantly described an increase in technology use (Post = 75%) as the outcome they observed from having a SETIS in their school.

Leverage is also evident in survey items asking teachers and school administrators about the role of a SETIS. At the time of the Teacher Pre Survey, teacher colleagues primarily believed the role of the SETIS was to be a resource for teachers (37.9%) and to integrate technology use in classrooms (44.8%). These opinions remained consistent in the Teacher Post Survey, with 44.4% of the respondents citing a SETIS's role as a resource person for teachers, and 38.9% stating their role is to integrate technology use into classroom settings. Among school administrators' responses concerning the role of a SETIS also remained consistent; in the Administrator Pre Survey 75% (6/8) said a SETIS's role is a technology use resource for teachers, in the Post Survey 100% (8/8) of the responding administrators voiced the same opinion. These data suggest both expectations and outcomes among school administrators and teacher colleagues are being met, providing support that SETISs and the resources they provide are being utilized (or leveraged) as planned.

Two open-ended questions from the SETIS Survey give extra insight into the ways school administrators are leveraging their SETIS. The first asks SETIS candidates to describe structures in their school that allowed them to work meaningfully with their teacher colleagues. Of the 11 responding SETISs, seven (63.6%) identified administrative support and four (36.4%) named common planning time as the structures leading to meaningful work between teacher colleagues and SETISs. The second question, also with 11 responses, asked SETISs to specify strategies they used to work with school administrators to address technology related issues and concerns. Even though the responses varied, *discuss resources/technology needs* was the most common theme, and only one SETIS reported not working with a school administrator at all. Results from these two questions indicate school administrators are actively supporting and collaborating with the SETIS in their school.

Finally, to measure leverage we looked at the multiple choice items from the Administrator Pre and Post Surveys. Reviewed in the Results section, administrators reported very high levels of intent to leverage their SETISs in the Pre Survey. Despite the decrease in these levels for many of the survey items (the decreases were not statistically significant) they remained high, signifying administrators utilized SETISs more or less as they had anticipated.

All in all, it appears teacher colleagues and school administrators leveraged SETIS's and the resources they bring to a school in the ways they expected throughout the 2011-2012 SETIS program. While it was concerning that only 75% of the responding school administrators were aware they would have a SETIS placed in their school, the SETISs named administrative support as the most common factor in facilitating meaningful collaboration between teachers and themselves.

## Evaluation Question 5

The final evaluation question—*What impact has the TIS program had on students' technology literacy in participating schools?*—relies upon the premise that successful program implementation along with efficient SETIS and technology resource use leads to higher student technology literacy levels. To address EQ5 we draw insight from the Teacher Pre and Post Surveys and the Administrator Pre and Post Surveys.

Qualitative open-ended survey items from both surveys provided the most compelling evidence that the premise is true. When asked about accomplishments and outcomes from participation in the SETIS program, 33.3% (6/18) of the teacher colleagues and 75% (6/8) of the school administrators cited *increased use of technology in classrooms/schools* as an accomplishment. Several teachers (four of 18) named *enhanced student experiences* as the most notable accomplishment. Also worth mentioning were the two teachers and one school administrator who listed *improved student performance*. From these open-ended remarks, it is evident both teachers and administrators observed not only increased technology use in classrooms, but also enriched student experiences and, in some instances, improved student outcomes.

All technology use items (Teacher Pre and Post Surveys), with the exception of the Engage index, contain items with reference to students. Facilitate items (2–5) ask teachers to gauge how often they have their students work with certain types of technology and technology-related learning methods. Each of these items showed an increase in mean score from the Pre to Post Survey, although none of the differences were statistically significant. Every Design item was centered on technology integration into student instruction and activities. While the individual items were not statistically significant, the index as a whole proved to be significantly different from Pre to Post Survey; the effect size for the index was small. The Promote index, consisting of three items about appropriate and collaborative technology utilization were each centered on students. Although not statistically significant, this index was near the level of significance with a p-value of 0.06; the effect size was small. Keeping in mind the index for these survey items—1 (*not usually*), 2 (*sometimes*), 3 (*often*), and 4 (*almost always*)—many of the items discussed above had a Pre Survey mean score near 2 (*sometimes*) that rose to a Post Survey mean closer to 3 (*often*).

A final measurement of impact on student technology literacy may be pulled from the Administrator Post Survey. Administrators were asked, "Based on your classroom observations this school year, has the SETIS candidate increased student engagement in curricular activities through the increased use of technology?" On a rating scale of 1 to 5, 75% (6/8) of the responding administrators answered with the highest possible agreement (5) and the other 25% (2/8) chose the next highest agreement rating (4).

It is evident both teacher colleagues and school administrators perceived sizeable growth in technology use in classrooms. Further, administrators were congruent in reporting they had observed increased student engagement as a result of integrating technology into their classwork. Finally, although the technology use indices from the Teacher Pre and Post Surveys did not show dramatic changes, many of the individual item mean scores moved from (2) *sometimes* to (3) *often*. This shift in behavior indicates that, as a result of the SETIS

program, teacher colleagues who responded to the survey are practicing technology integration techniques and engaging their students using technology resources provided by their SETIS.

## Limitations of the Study

When interpreting results in any study, it is important to consider inherent limitations that may skew findings. While sound research methods are an integral component of high quality studies, eliminating all potential risks of bias is impossible. The limitations of this evaluation study are typical of other similar studies; they are discussed below.

Surveys that rely upon self-reported information always have a risk of response bias; respondents may exaggerate or underestimate, may have accurate recall difficulties, and may report information they perceive as socially acceptable. This study relies upon two types of self-reported surveys: a retrospective pre/post survey and two traditional pre/post surveys. There are benefits and drawbacks to each type of survey.

Retrospective pre/post surveys are convenient because they occur once (improving response rates) and the pre/post data are matched (the same participants responding to the preprogram survey also responded to the postprogram survey). Certain research postulates that a form of bias called response-shift bias is alleviated through using retrospective pre/post surveys. Moore and Tananis (2009) define response-shift bias as occurring "when a participant uses a different internal understanding of the construct being measured to complete the pretest and posttest." Simply put, it is common for participants to overestimate their knowledge, skills, and behaviors before exposure to a program or intervention. However, after the completion of a program, (and caused by what they learned in the program) they may realize their knowledge, skills, and behaviors were not truly as high as they first estimated. Therefore, it is possible for participants to rate themselves lower in a posttest due to a shift in their frame of reference. Obviously, this can mask the actual impact of a program. Conversely, other research argues traditional pretest/posttest types of surveys result in less biased program effectiveness estimates. In a 2011 study, Nimon, Zigarmi, and Allen discovered inflated effect sizes among retrospective pre/post survey items. According to their findings, surveys with *before* and *after* items presented side by side may introduce types of bias including theories of change, self-presentation, and/or effort justification. Further, to resolve the issues of both response-shift bias and exaggerated effect sizes Nimon et al. recommend administering traditional pre/post surveys with a retrospective pre/post survey. While this solution would alleviate some bias, it was not possible to initiate in this study.

Among all surveys in this study, small sample sizes ($n$) are limitations. In a study, researchers use samples to draw conclusions about an entire population; therefore, adequate sample sizes that most accurately reflect the characteristics of a population are needed to validate a study. This study relies upon nonrandom samples of program participants and school personnel associated with the SETIS program. The 2011-2012 SETIS program cohort consisted of 16 participants, 14 of whom were participants in this evaluation study. Even though 14 is a small number of respondents, in this case it is also the entire population we are studying. Sample size among the Teacher and Administrator Pre and Post Surveys are a greater concern. Of all the surveys, the Teacher Surveys had the largest sample with a total of

48 Pre Survey and 28 Post Survey respondents (after data cleaning and matching by county, 40 Pre Surveys and 27 Post Surveys responses were analyzed). The larger Pre Survey sample size may skew findings slightly. The Administrator Surveys provided the smallest samples. Prior to matching by county the Pre Survey had nine respondents and the Post had 13; after matching both had eight respondents. The information gathered from the school administrators, while useful and enriching to our study, should be viewed with caution. Additionally, small sample sizes may have contributed to the lack of significant findings in the Teacher and Administrator Surveys.

A further limitation is the inability to calculate response rates for the Teacher and Administrator Surveys. The program is designed to allow SETISs the opportunity to invite multiple teacher colleagues and school administrators to participate in the surveys. Despite the fact that we are unable to ascertain how many teachers and administrators were invited to the surveys, we feel allowing SETISs the chance to include multiple colleagues ultimately creates a richer dataset. Teacher colleague and school administrator pre and post surveys from the 2011-2012 cohorts were matched by county, not by respondent, as there was no mechanism in place allowing us to determine if the same people participating in the pre surveys also responded to the post surveys. However, beginning in the 2012-2013 program year, we will collect information that will allow us to match pre and post surveys by person. Matching survey results will enable next year's study not only to measure changes in each group's knowledge, skills, and behaviors, but also changes at the individual level.

# Recommendations

As a whole, survey results indicate that the 2011-2012 SETIS program was successful. Findings suggest the greatest impact was felt among the special education technology integration specialists (SETISs) themselves, at the level of capacity building. Results from surveys of teacher colleagues and school administrators indicate SETISs are meeting the expectations of both groups. Moreover, survey data support the argument that teachers and school administrators are leveraging SETIS more or less as they anticipated. Even with these promising outcomes, there are several recommendations that may improve the implementation, utilization, and impact of this program:

- Attempt to recruit more SETIS program candidates. This cohort consisted of 16 participants, 14 of whom participated in the study. With ever increasing technological demands in classrooms, and the capacity to train 25 SETISs per year, there is potential to expand the program.
- Encourage SETIS program candidates to conduct staff development on technology integration at their schools. Only two SETISs (of 14) indicated they had led formal staff development throughout the program year. An increase in professional development opportunities could encourage more teachers and administrators to incorporate technology into their work.
- If logistically possible, consider holding more face-to-face meetings for the SETIS candidate group only. Several SETIS candidates suggested increasing in-person meetings as well as additional time with fellow SETISs. Considering the specialized nature of special education content, providing SETISs greater opportunities to work together may help them more effectively implement technology integration in classrooms to benefit students with disabilities in particular.
- Set a goal of 100% awareness of the presence (or anticipated presence) of SETISs among school administrators in the schools where they work. Improved communication at all program levels may encourage optimized utilization of SETIS support and resources.
- Promote scheduling that allows teachers and SETISs time to cocreate technology-integrated lesson plans. Given time to thoughtfully plan and collaborate, teachers may be more inclined to incorporate technological tools and resources the SETISs offer.

For future evaluations of the SETIS program, we offer the following recommendation:

- Consider the practicality of incorporating a mechanism to track responses and response rates among teacher colleagues and school administrators. Currently, SETIS candidates invite an unknown number of teachers and administrators to complete surveys. Further, it is not possible to match responses from pre surveys with post surveys. Adding mechanisms to address both issues would improve the reliability of the findings in future evaluations.

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# Appendix A. Special Education Technology Integration Specialist (SETIS) Survey

## 1. Special Education Technology Integration Specialist Survey

Thank you for agreeing to complete the Special Education Technology Integration Specialist (SE TIS) Survey. WVDE is interested in learning about your experience as a SE TIS. The survey should take no longer than 15 minutes to complete. Your responses are confidential and no name will ever be associated with your responses.

The information from this survey will be used as part of an evaluation report about the impact of the SE TIS program, so please be thoughtful and candid in providing your responses to each item.

The survey contains 3 major sections that are distributed across 8 pages. Do not forget to click the "done" button on the final page of the survey to ensure we receive your feedback.

If you have questions about this data collection activity, please feel free to contact Andu Meharie at ameharie@access.k12.wv.us.

Thank you for your participation.

## 2. Section 1: About You

**1. Please indicate the county in which you serve as a technology integration specialist.**

**2. What is your role within your school?**

- ◯ Classroom Teacher
- ◯ Administrator
- ◯ Support Staff
- ◯ Other (please specify)

**3. If applicable, what is the programmatic level of your school?**

- ☐ Pre-Kindergarten
- ☐ Elementary
- ☐ Middle
- ☐ High
- ☐ Other (please specify)

**4. To your knowledge, does your school currently employ any other individual who has completed or is currently completing the TIS program?**

- ◯ Yes
- ◯ No

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## 3. Section II

For each of the items in Section II of the survey, you will be asked to provide TWO self-assessments of your knowledge, attitudes, and professional practices as they relate to technology integration.

First, you will be asked to provide a retrospective rating of yourself prior to having participated in the SE TIS program.

Second, you will be asked to provide a rating of yourself today, after having participated in the SE TIS program.

## 4. Section II-A

This page includes items about your knowledge, skills and efficacy with respect to technology integration. As you answer each item, please take a minute to reflect upon what you learned as a result of participating in the TIS program. Then choose the response that best describes your knowledge/skills/efficacy BEFORE participating and AFTER participating in the TIS program.

**1. I have a strong understanding of how to use/apply the resources from Thinkfinity.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before Participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After Participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**2. I have a strong understanding of how to use/apply the resources from Curriculum Pathways (SAS).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**3. I have a strong understanding of how to use/apply the resources from West Virginia Writes.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**4. I have a strong understanding of how to use/apply the resources from Acuity.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**5. I have a strong understanding of how to use/apply the resources from TechSteps.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**6. I am able to assess the quality and legitimacy of web resources.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**7. I understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**8. I am able to identify the components of a URL and to ensure it is legitimate (e.g., protocol, host, domain, directory, port address, etc.).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**9. I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Teachers (NETS-T).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**10. I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Students (NETS-S).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**11. I understand how to integrate Web 2.0 tools into instruction (e.g., podcasting, wikis and blogs, social networking, etc.).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**12. I integrate digital resources/tools into my work with teachers, students and administrators.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**13. I understand how to effectively integrate technology into instruction to improve the quality of students' educational experiences.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**14. I have a strong understanding of the county/school acceptable use policy.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**15. I have a strong understanding of 21st century assessment.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**16. I have a strong understanding of how to design and implement project-based learning (PBL) in the classroom.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**17. I actively use action research to assess the impact of my teaching on student learning.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

## 5. Section II-B

This page includes items about the extent to which you interact with others in your school/county to effectively integrate technology. As you answer each item, please take a minute to reflect upon how your practices have changed as a result of participating in the SE TIS program. Then choose the response that best describes your practices BEFORE participating and AFTER participating in the SE TIS program.

**1. I model lessons that integrate technology for other teachers in the school.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**2. I collaborate with others within the school to effectively integrate technology into instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**3. I serve as a resource to other teachers regarding the effective use of technology in the school.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**4. I can effectively work with others to assess their learning and information needs (e.g., other teachers, students, administrators, etc.).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**5. I have an ongoing dialogue with other staff members at the school about technology issues and how they can be addressed.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

## 6. Section II-C

This page includes items about the extent to which policies, procedures and practices within your school/county have changed as a result of having a technology integration specialist. As you answer each item, please take a minute to reflect upon how your county/school has or has not changed as a result of your participation in the SE TIS program. Then choose the response that best describes your county/school BEFORE participating and AFTER participating in the SE TIS program.

**1. The school has set a time and place where staff meet in professional communities of practice to discuss how to effectively integrate technology into instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**2. Teachers at the school have time to co-plan and/or co-teach lessons that integrate technology into instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**3. Staff at the school understand the acceptable use policy.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**4. Staff at the school understand key concepts and best practices regarding web literacy.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**5. Staff at the school understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**6. Staff at the school are familiar with the technology components of the school's strategic plan.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**7. The school has policies and procedures in place that support the use of Project Based Learning (PBL).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**8. The school has policies and procedures in place that support the use of technology resources (e.g., Thinkfinity, Acuity, West Virginia Writes, etc.).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**9. Staff at the school regularly use Thinkfinity and or Curriculum Pathways (SAS) as a resource in the classroom.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**10. Staff at the school regularly use West Virginia Writes or another online writing program as a formative assessment of student writing.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**11. The school has a plan in place to support the implementation of TechSteps.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**12. Staff at the school regularly use TechSteps as part of their core content instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**13. Staff at the school understand the core National Education Technology Standards and Performance Indicators for Teachers (NETS-T).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**14. Staff at the school understand the National Education Technology Standards and Performance Indicators for Students (NETS-S).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**15. Staff at the school understand West Virginia's 21st Century Skills and Tools.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

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**16. Staff at the school use Web 2.0 tools for collaboration and instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |
| After participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |

**17. Staff at the school frequently integrate digital resources/tools in their teaching.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |
| After participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |

## 7. Section II-D

This page includes items about the extent to which you have the resources necessary to accomplish technology integration at your school. As you answer each item, please take a minute to reflect upon the resources that were available to you BEFORE and AFTER participating in SE TIS program. As with the previous sections, choose the response that best describes your resources BEFORE participating and AFTER participating in the TIS program.

**1. I have access to a variety of high quality technology resources at my school (e.g., computer, digital camera, whiteboard, etc.).**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |
| After participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |

**2. I participated in a variety of professional development about integrating technology resources into instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |
| After participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |

**3. I feel I am able to direct staff in my school toward high quality technology resources that are relevant to their information needs.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |
| After participating in the TIS program... | ○ | ○ | ○ | ○ | ○ |

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**4. I have the ability to develop useful technology resources for my school that address our information needs.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

**5. I know where to find useful and high quality technology resources that can be integrated into instruction.**

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Before participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |
| After participating in the TIS program... | ◯ | ◯ | ◯ | ◯ | ◯ |

## 8. Section III

WVDE is interested in your feedback about your experience as a Technology Integration Specialist. Please respond to the following items.

**1. During the past year, did you conduct any formal staff development related to technology integration at your school?**

◯ Yes

◯ No

**2. If you answered yes above, please describe the development opportunities you provided. What was the topic? Who was the audience?**

**3. What would you consider to be the most valuable aspects of participating in the TIS program?**

**4. What would you change about the TIS program if you could?**

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**5. What structures are in place at your school that allow teachers to work meaningfully with the TIS (e.g., common planning time, support from administration, etc.)?**

**6. In what ways did you work with the administration at your school to address technology-related issues or concerns during the past year?**

**7. What barriers, if any, did you encounter in implementing what you learned as part of the TIS program?**

## 9. Thank You for Completing our Survey.

Please click "done" to submit your survey to us.

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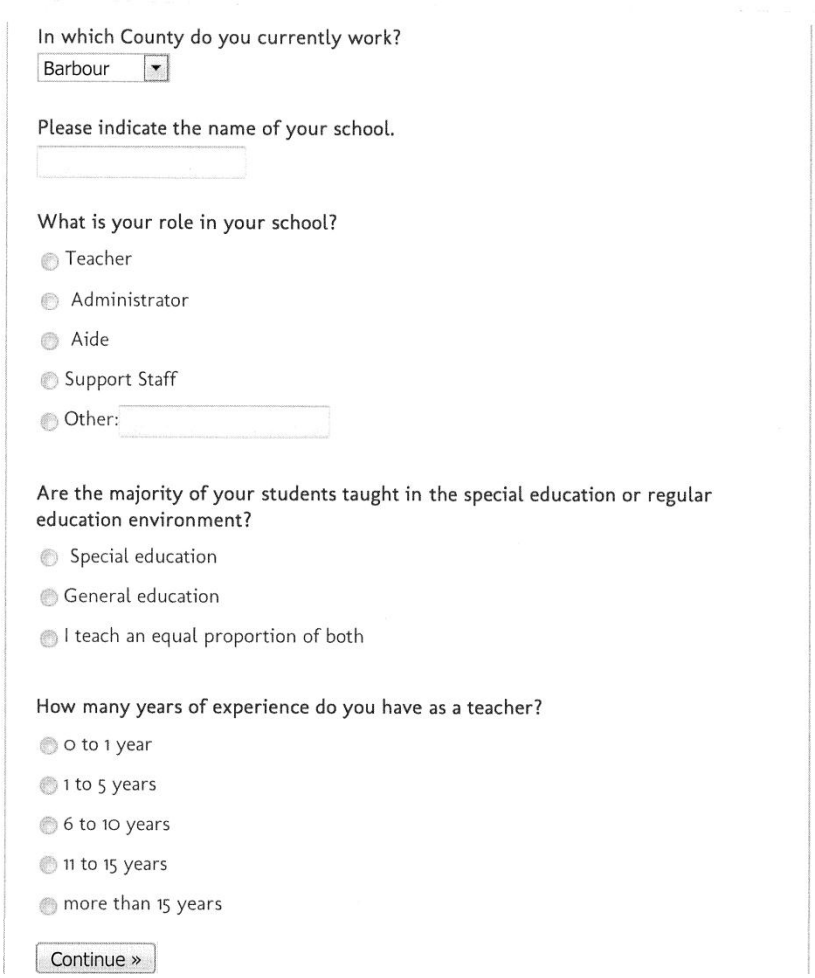
# Appendix B. SETIS Teacher Pre Survey and Post Survey

## Teacher Pre Survey

### Special Education Technology Integration Specialist (SE TIS) Program Teacher Survey (2011)

This survey is intended to serve as an assessment of your prior integration of technology into your instruction and the ways in which you intend to utilize the Special Education Technology Integration Specialist (SE TIS) at your school. It is important that you spend time to reflect on each question and honestly consider the extent to which each statement is true of your past practice. Please note that you will receive a second survey near the end of the school year to help WVDE better understand how you have leveraged the services of the SE TIS in your school and what impact the SE TIS has had on your instructional practices. This information will only be used to evaluate the SE TIS program. All information is anonymous and will only be reported at the aggregate level.



In which County do you currently work?

Barbour

Please indicate the name of your school.

What is your role in your school?

- Teacher
- Administrator
- Aide
- Support Staff
- Other:

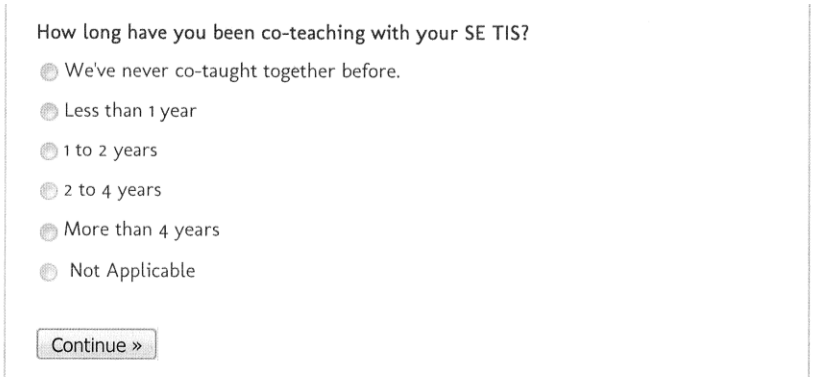
Are the majority of your students taught in the special education or regular education environment?

- Special education
- General education
- I teach an equal proportion of both

How many years of experience do you have as a teacher?

- 0 to 1 year
- 1 to 5 years
- 6 to 10 years
- 11 to 15 years
- more than 15 years

Continue »


How long have you been co-teaching with your SE TIS?

- We've never co-taught together before.
- Less than 1 year
- 1 to 2 years
- 2 to 4 years
- More than 4 years
- Not Applicable

Continue »

# Section I: Facilitating and Inspiring Student Learning and Creativity

**Please indicate the extent to which the following statements are true of yourself.**
Please think about the most recently completed school year as you respond to each item.

| | Not usually | Sometimes | Often | Almost always |
|---|---|---|---|---|
| I use information from digital sources to promote learning and engage students in classroom activities. | ○ | ○ | ○ | ○ |
| I require my students to use digital resources and tools for writing, collaboration, reflection, research, and other assignments. | ○ | ○ | ○ | ○ |
| I engage my students in real-world issues and authentic problem-solving. | ○ | ○ | ○ | ○ |
| I require my students to gather information from sources other than their textbooks in order to complete their daily assignments (e.g., podcasts, videos, etc.). | ○ | ○ | ○ | ○ |
| I require my students to present information and actively teach content to their fellow students and/or community members. | ○ | ○ | ○ | ○ |

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## Section II: Designing and Developing Digital-Age Learning Experiences and Assessments

**Please indicate the extent to which the following statements are true of yourself.**
Please think about the most recently completed school year as you respond to each item.

| | Not usually | Sometimes | Often | Almost always |
|---|---|---|---|---|
| I use a blend of both face-to-face and online environments to deliver instruction to my students. | | | | |
| I design and/or implement projects that emphasize creative thinking and require students to engage in problem-solving, decision-making and experimental inquiry, using digital resources/tools when appropriate. | | | | |
| I often design and/or utilize student-centered formative and performance-based assessments using available digital resources and tools (e.g., WV Writes, Acuity, TechSteps, etc.). | | | | |
| I use digital resources and tools to make assignments for students that are based upon their individual interests, abilities and learning needs. | | | | |
| I require my students to set personal learning goals and to self-assess their progress toward meeting those goals, using digital resources and tools when available and appropriate. | | | | |

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## Section III: Modeling Digital-Age Work and Learning

**Please indicate the extent to which the following statements are true of yourself.**
Please think about the most recently completed school year as you respond to each item.

| | Not usually | Sometimes | Often | Almost always |
|---|---|---|---|---|
| I use digital resources and tools to communicate with students. | ○ | ○ | ○ | ○ |
| I use digital resources and tools to communicate with my peers. | ○ | ○ | ○ | ○ |
| I use digital resources and tools to communicate with parents and the community outside of my school. | ○ | ○ | ○ | ○ |
| I customize the available digital resources and tools such as WV Writes (formerly Writing Roadmap), Acuity, TechSteps, etc. to personalize learning for my students. | ○ | ○ | ○ | ○ |

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## Section IV: Promoting and Modeling Digital Citizenship and Responsibility

**Please indicate the extent to which the following statements are true of yourself.**
Please think about the most recently completed school year as you respond to each item.

| | Not usually | Sometimes | Often | Almost always |
|---|---|---|---|---|
| I advocate, model and teach my students about safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources. | ○ | ○ | ○ | ○ |
| I offer students opportunities to use digital resources and tools to participate in collaborative projects with students of other cultures that address current problems, issues or themes. | ○ | ○ | ○ | ○ |
| Students in my class model appropriate online behavior and social interaction through digital activities in my classroom. | ○ | ○ | ○ | ○ |

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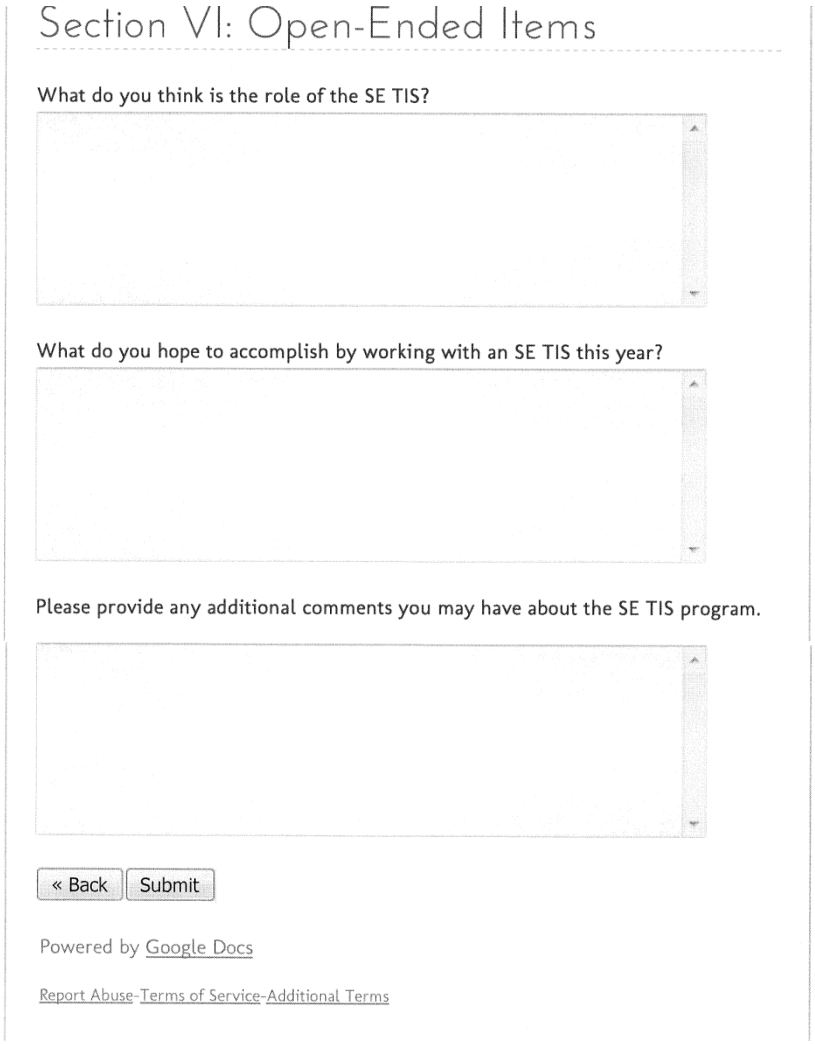
## Section V: Engaging in Professional Growth and Leadership

**Please indicate the extent to which you agree with the following statements about yourself.**

Please think about the most recently completed school year as you respond to each item.

| | Not usually | Sometimes | Often | Almost always |
|---|---|---|---|---|
| I participate actively in local communities of practice with my fellow teachers, either online or face-to-face. | ○ | ○ | ○ | ○ |
| I participate actively in online/global communities with other educators outside of my local community to gather and discuss resources and ideas related to student achievement and learning. | ○ | ○ | ○ | ○ |
| I model and teach other educators to use digital tools and resources to promote student achievement and learning. | ○ | ○ | ○ | ○ |
| I regularly seek out digital resources, tools and research and evaluate its quality and relevance prior to using it in the classroom. | ○ | ○ | ○ | ○ |

« Back Continue »



## Section VI: Open-Ended Items

What do you think is the role of the SE TIS?

What do you hope to accomplish by working with an SE TIS this year?

Please provide any additional comments you may have about the SE TIS program.

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# Teacher Post Survey

## Welcome to the SE TIS Teachers' Post Survey

The West Virginia Department of Education (WVDE) is interested in your feedback regarding the special education technology integration specialist (SE TIS) program. Your input is important to the SE TIS program.

This survey is intended to serve as an assessment of your integration of technology into your instruction and the ways in which you have utilized the SE TIS at your school. It is important that you spend time to reflect on each question and honestly consider the extent to which each statement is true of your practice this school year.

Please note that this is the second survey you have received and the surveys will help WVDE to understand how you have leveraged the services of the SE TIS in your school and what impact the SE TIS has had on your instructional practices. This information will only be used to evaluate the SE TIS program.

The WVDE understands your time is valuable and we have taken every measure to ensure that the survey is as brief as possible. The survey should only take 15-20 minutes to complete. Please provide your responses to the survey items and click submit on the final page.

Please note that all of your responses are confidential and will only be presented as part of a group (not individually). If you have questions about this survey, please contact Andu Meharie in the WVDE Office of Research (ameharie@access.k12.wv.us). If you have questions about the SE TIS program, please contact Valerie Wilson at the WVDE Office of Special Programs at 304.558.2696 or vwilson@access.k12.wv.us.

Thank you for your participation in this important data collection activity.

## About You

Page 1

***1. In which school district or county do you work?**

- Berkeley
- Boone
- Braxton
- Brooke
- Cabell
- Calhoun
- Clay
- Doddridge
- Fayette
- Gilmer
- Grant
- Greenbrier
- Hampshire
- Hancock
- Hardy
- Harrison
- Institutional Programs
- Jackson
- Jefferson
- Kanawha
- Lewis
- Lincoln
- Logan
- Marion
- Marshall
- Mason
- McDowell
- Mercer
- Mineral
- Mingo
- Monongalia
- Monroe
- Morgan
- Nicholas
- Ohio
- Pendleton
- Pleasants
- Pocahontas
- Preston
- Putnam
- Raleigh
- Randolph
- Ritchie
- Roane
- Summers
- Taylor
- Tucker
- Tyler
- Upshur
- Wayne
- Webster
- Wetzel
- Wirt
- Wood
- West Virginia Schools for the Deaf and Blind
- Wyoming
- Out of state

***2. Please indicate the name of your school?**

***3. What is your primary role within your school?**

- Teacher
- Administrator
- Aide
- Support Staff
- Other:

Other (please specify)

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## About You

***4. Are the majority of your students taught in the special education or regular education environment?**

- ◯ Special education
- ◯ General education
- ◯ I teach an equal proportion of both

***5. How many years of experience do you have as a teacher?**

- ◯ Less than 1 year
- ◯ 1 to 5 years
- ◯ 6 to 10 years
- ◯ 11 to 15 years
- ◯ 16 or more years
- ◯ I have never taught

***6. How long have you been co-teaching with your SE TIS?**

- ◯ We've never co-taught together before.
- ◯ Less than 1 year
- ◯ 1 to 2 years
- ◯ 2 to 4 years
- ◯ More than 4 years
- ◯ Not applicable

## Section I: Facilitating and Inspiring Student Learning and Creativity

Please indicate the extent to which the following statements are true of you.
Please think about the most recently completed school year as you respond to each item.

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**7. Please indicate whether you would (1) "Not Usually" to (5) "Almost Always" do the following:**

| | 1 Not Usually | 2 Sometimes | 3 Often | 4 Almost always |
|---|---|---|---|---|
| I use information from digital sources to promote learning and engage students in classroom activities. | ◯ | ◯ | ◯ | ◯ |
| I require my students to use digital resources and tools for writing, collaboration, reflection, research, and other assignments. | ◯ | ◯ | ◯ | ◯ |
| I engage my students in real-world issues and authentic problem-solving. | ◯ | ◯ | ◯ | ◯ |
| I require my students to gather information from sources other than their textbooks in order to complete their daily assignments (e.g., podcasts, videos, etc.). | ◯ | ◯ | ◯ | ◯ |
| I require my students to present information and actively teach content to their fellow students and/or community members. | ◯ | ◯ | ◯ | ◯ |

## Section II: Designing and Developing Digital-Age Learning Experiences and ...

Please indicate the extent to which the following statements are true of you.
Please think about the most recently completed school year as your respond to each item.

**8. Please indicate whether you would (1) "Not Usually" to (5) "Almost Always" do the following:**

| | 1 Not Usually | 2 Sometimes | 3 Often | 4 Almost always |
|---|---|---|---|---|
| I use blend of both face-to-face and online environments to deliver instruction to my students. | ◯ | ◯ | ◯ | ◯ |
| I design and/or implement projects that emphasize creative thinking and require students to engage in problem-solving, decision-making and experimental inquiry, using digital resources/tools when appropriate. | ◯ | ◯ | ◯ | ◯ |
| I often design and/or utilize student-centered formative and performance-based assessments using available digital resources and tools (e.g., WV Writes, Acuity, TechSteps, etc.). | ◯ | ◯ | ◯ | ◯ |
| I use digital resources and tools to make assignments for students that are based upon their individual interests, abilities and learning needs. | ◯ | ◯ | ◯ | ◯ |
| I require my students to set personal learning goals and to self-assess their progress toward meeting those goals, using digital resources and tools when available and appropriate. | ◯ | ◯ | ◯ | ◯ |

## Section III: Modeling Digital-Age Work and Learning

Please indicate the extent to which the following statements are true of you.
Please think about the most recently completed school year as you respond to each item.

Page 4

**9. Please indicate whether you would (1) "Not Usually" to (5) "Almost Always" do the following:**

| | 1 Not Usually | 2 Sometimes | 3 Often | 4 Almost always |
|---|---|---|---|---|
| I use digital resources and tools to communicate with students. | ◯ | ◯ | ◯ | ◯ |
| I use digital resources and tools to communicate with my peers. | ◯ | ◯ | ◯ | ◯ |
| I use digital resources and tools to communicate with parents and the community outside of my school. | ◯ | ◯ | ◯ | ◯ |
| I customize the available digital resources and tools such as WV Writes, Acuity, TechSteps, etc. to personalize learning for my students. | ◯ | ◯ | ◯ | ◯ |

## Section IV: Promoting and Modeling Digital Citizenship and Responsibility

Please indicate the extent to which the following statements are true of you.
Please think about the most recently completed school year as you respond to each item.

**10. Please indicate whether you would (1) "Not Usually" to (5) "Almost Always" do the following:**

| | 1 Not Usually | 2 Sometimes | 3 Often | 4 Almost always |
|---|---|---|---|---|
| I advocate, model and teach my students about safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources. | ◯ | ◯ | ◯ | ◯ |
| I offer students opportunities to use digital resources and tools to participate in collaborative projects with students of other cultures that address current problems, issues or themes. | ◯ | ◯ | ◯ | ◯ |
| Students in my class model appropriate online behavior and social interaction through digital activities in my classroom. | ◯ | ◯ | ◯ | ◯ |

## Section V: Engaging in Professional Growth and Leadership

Please indicate the extent to which the following statements are true of you.
Please think about the most recently completed school year as you respond to each item.

**11. Please indicate whether you would (1) "Not Usually" to (5) "Almost Always" do the following:**

| | 1 Not Usually | 2 Sometimes | 3 Often | 4 Almost always |
|---|---|---|---|---|
| I participate actively in local communities of practice with my fellow teachers, either online or face-to-face. | ◯ | ◯ | ◯ | ◯ |
| I participate actively in online/global communities with other educators outside of my local community to gather and discuss resources and ideas related to student achievement and learning. | ◯ | ◯ | ◯ | ◯ |
| I model and teach other educators to use digital tools and resources to promote student achievement and learning. | ◯ | ◯ | ◯ | ◯ |
| I regularly seek out digital resources, tools and research and evaluate their quality and relevance prior to using them in the classroom. | ◯ | ◯ | ◯ | ◯ |

## Section VI: Open-Ended Questions

Please share your responses to the following questions.

**12. What do you think is the role of the SE TIS?**

**13. What did you accomplish by working with a SE TIS this year?**

**14. Please provide any additional comments you may have about the SE TIS program.**

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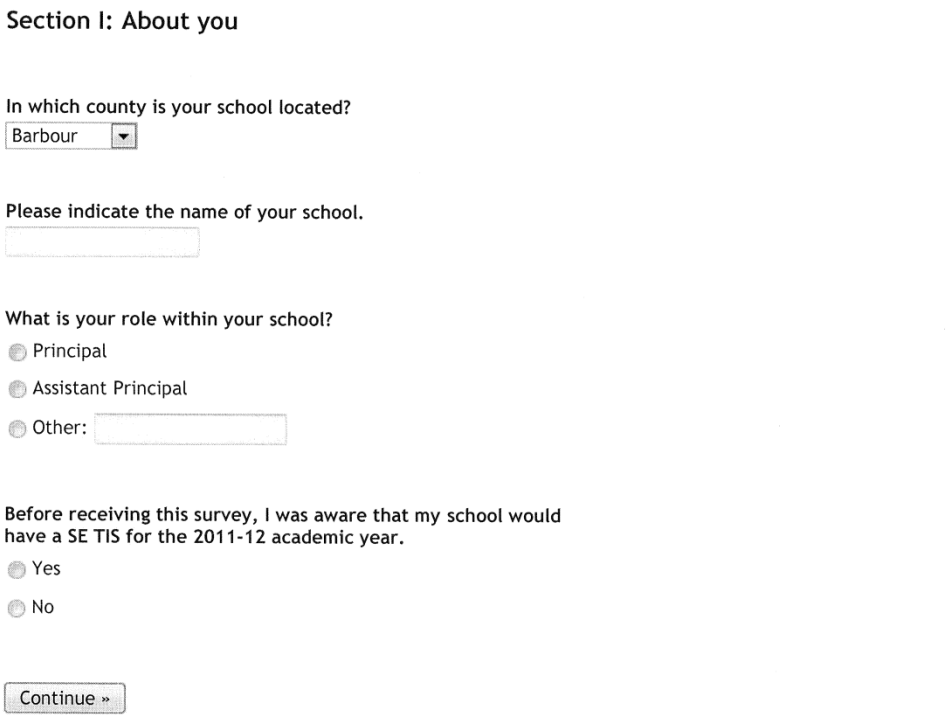
# Appendix C. SETIS Administrator Pre Survey and Post Survey

## Administrator Pre Survey

### Special Education Technology Integration Specialist (SE TIS) Administrative Survey (2011)

This survey is intended to help you to determine the most effective ways to utilize the SE TIS in your school. Please note that you may receive a scond survey near the end of the school year to help WVDE better understand how school administrators are leveraging the resources provided to schools through the SE TIS program.



**Section I: About you**

In which county is your school located?

Barbour

Please indicate the name of your school.

What is your role within your school?

- Principal
- Assistant Principal
- Other:

Before receiving this survey, I was aware that my school would have a SE TIS for the 2011-12 academic year.

- Yes
- No

Continue »

## Section II: Your plans to use the SE TIS.

Please indicate how likely it is that you will use the SE TIS for each of the following purposes.

**I plan to ask my SE TIS to share what he/she has learned by leading standards-based professional development for the other teachers in my school.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

**I plan to ask my SE TIS to model the integration of technology for their co-teachers and others within the school.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

**I anticipate asking my SE TIS to assist me in developing the school's strategic plan with regard to information and technology needs.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

**I expect that my SE TIS will assist his/her co-teachers in customizing available digital resources and tools such as West Virginia Writes (formerly Writing Roadmap), TechSteps, and Acuity to personalize learning for students.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

**I will request that the SE TIS work with teachers to identify digital resources and tools that effectively integrate technology into their current curriculum.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

**I will ask the TIS to conduct analyses of student data and engage in action research to help me understand the impact of technology integration in my school.**

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Unlikely | ○ | ○ | ○ | ○ | ○ | Likely |

Continue »

**Please articulate what you believe the role of the SE TIS should be in your school.**

**What outcomes do you expect as a result of having a SE TIS in your school?**

**Please provide any additional comments you may have about the SE TIS program.**

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# Administrator Post Survey

## Welcome to the SE TIS Administrators' Post Survey

The WVDE is interested in your feedback regarding the special education technology integration specialist (SE TIS) program. Your input is very important to the SE TIS program.

This survey is intended to determine effective ways to utilize a SE TIS in schools. Please note that this is the second survey you are receiving to help WVDE understand how school administrators are leveraging the resources provided to schools through the SE TIS program.

The WVDE understands your time is valuable and we have taken every measure to ensure that the survey is as brief as possible. The survey should only take 10-15 minutes to complete. Please provide your responses to the survey items and click submit on the final page.

Please note that all of your responses are confidential and will only be presented as part of a group (not individually). If you have questions about this survey, please contact Andu Meharie in the WVDE Office of Research (ameharie@access.k12.wv.us). If you have questions about the SE TIS program, please contact Valerie Wilson at the WVDE Office of Special Programs at 304.558.2696 or vwilson@access.k12.wv.us.

Thank you for your participation in this important data collection activity.

## About You

Page 1

***1. In which school district or county do you work?**

- Berkeley
- Boone
- Braxton
- Brooke
- Cabell
- Calhoun
- Clay
- Doddridge
- Fayette
- Gilmer
- Grant
- Greenbrier
- Hampshire
- Hancock
- Hardy
- Harrison
- Institutional Programs
- Jackson
- Jefferson
- Kanawha
- Lewis
- Lincoln
- Logan
- Marion
- Marshall
- Mason
- McDowell
- Mercer
- Mineral
- Mingo
- Monongalia
- Monroe
- Morgan
- Nicholas
- Ohio
- Pendleton
- Pleasants
- Pocahontas
- Preston
- Putnam
- Raleigh
- Randolph
- Ritchie
- Roane
- Summers
- Taylor
- Tucker
- Tyler
- Upshur
- Wayne
- Webster
- Wetzel
- Wirt
- Wood
- West Virginia Schools for the Deaf and Blind
- Wyoming
- Out of state

***2. Please indicate the name of your school?**

***3. What is your primary role within your school?**

- Principal
- Assistant Principal
- Other

Other (please specify)

**Your Plans to Use the SE TIS**

Page 2

Please indicate, on a scale of 1 to 5, how accurately each statement reflects the activities your SE TIS during this school year.

**4. Based on your classroom observations this school year, has the SE TIS candidate increased student engagement in curricular activities through the increased use of technology?**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**5. My SE TIS shared what he/she learned by leading professional development for the other teachers in my school.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**6. My SE TIS modeled the integration of technology for her/his co-teachers and others within the school.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**7. My SE TIS assisted me in developing the school's strategic plan with regard to information and technology needs.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

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**8. My SE TIS assisted his/her co-teachers in customizing available digital resources and tools such as West Virginia Writes, TechSteps, Acuity, Edmodo, Thinkfinity, etc. to personalize learning for students.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**9. I requested that the SE TIS work with teachers to identify digital resources and tools that effectively integrate technology into their current curriculum.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**10. I asked the SE TIS to conduct analyses of student data and engage in action research to help me understand the impact of technology integration in my school.**

- ◯ 1 Untrue
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 True

**11. Please articulate what you believe the role of the SE TIS should be in your school.**

**12. What outcomes did you observe as a result of having a SE TIS in your school?**

**13. Please provide any additional comments you may have about the SE TIS program.**

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# Appendix D. SETIS Survey Capacity Indices

**Table 22. Human Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| | | | Pre | | Post | | Significance of difference | | Cohen's *d* | Effect size |
|---|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | Mean | *SD* | *t* | *p* | | |
| 1 | I have a strong understanding of how to use/apply the resources from Thinkfinity. | 14 | 2.07 | 1.14 | 4.43 | 0.65 | 8.75 | <.0001 | 2.64 | very large |
| 2 | I have a strong understanding of how to use/apply the resources from Curriculum Pathways (SAS). | 14 | 1.93 | 1.21 | 3.71 | 1.07 | 5.96 | <.0001 | 1.63 | very large |
| 3 | I have a strong understanding of how to use/apply the resources from West Virginia Writes. | 13 | 2.77 | 1.36 | 4.31 | 0.75 | 4.63 | .0006 | 1.45 | very large |
| 4 | I have a strong understanding of how to use/apply the resources from Acuity. | 13 | 2.54 | 1.20 | 4.00 | 0.78 | 5.73 | <.0001 | 1.51 | very large |
| 5 | I have a strong understanding of how to use/apply the resources from TechSteps. | 14 | 2.21 | 1.05 | 4.21 | 0.80 | 6.75 | <.0001 | 2.22 | very large |
| 6 | I am able to assess the quality and legitimacy of web resources. | 14 | 3.21 | 1.05 | 4.57 | 0.51 | 6.82 | <.0001 | 1.70 | very large |
| 7 | I understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction. | 14 | 2.07 | 1.14 | 4.21 | 0.58 | 9.28 | <.0001 | 2.46 | very large |
| 8 | I am able to identify the components of a URL and to ensure it is legitimate (e.g., protocol, host, domain, directory, port address, etc.). | 14 | 2.64 | 1.55 | 4.14 | 0.77 | 4.84 | .0003 | 1.27 | very large |
| 9 | I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Teachers (NETS-T). | 14 | 1.79 | 0.70 | 4.07 | 0.62 | 10.36 | <.0001 | 3.60 | very large |
| 10 | I have a strong understanding of the core National Educational Technology Standards and Performance Indicators for Students (NETS-S). | 14 | 1.79 | 0.70 | 4.00 | 0.55 | *10.33* | <.0001 | 3.64 | very large |

*Table 22 continues next page*

**Table 22. Human Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| | | | Pre | | Post | | Significance of difference | | Cohen's *d* | Effect size |
|---|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | Mean | *SD* | *t* | *p* | | |
| 11 | I understand how to integrate Web 2.0 tools into instruction (e.g., podcasting, wikis and blogs, social networking, etc.). | 14 | 1.86 | 0.86 | 4.43 | 0.65 | 9.47 | <.0001 | 3.50 | very large |
| 12 | I integrate digital resources/tools into my work with teachers, students and administrators. | 14 | 2.36 | 1.22 | 4.64 | 0.50 | 8.00 | <.0001 | 2.55 | very large |
| 13 | I understand how to effectively integrate technology into instruction to improve the quality of students' educational experiences. | 14 | 2.50 | 1.16 | 4.79 | 0.43 | 7.51 | <.0001 | 2.71 | very large |
| 14 | I have a strong understanding of the county/school acceptable use policy. | 14 | 2.86 | 1.03 | 4.43 | 0.65 | 4.58 | .0005 | 1.90 | very large |
| 15 | I have a strong understanding of 21st century assessment. | 14 | 2.29 | 1.07 | 4.21 | 0.70 | 5.69 | <.0001 | 2.22 | very large |
| 16 | I have a strong understanding of how to design and implement project-based learning (PBL) in the classroom. | 13 | 2.50 | 1.02 | 4.00 | 1.00 | 5.20 | .0002 | 1.54 | very large |
| 17 | I actively use action research to assess the impact of my teaching on student learning. | 14 | 2.14 | 0.86 | 3.79 | 0.97 | 5.34 | .0001 | 1.85 | very large |

**Table 23. Organizational Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| | | | Pre | | Post | | Significance of difference | | Cohen's | Effect |
|---|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | Mean | *SD* | *t* | *p* | *d* | size |
| 18 | I model lessons that integrate technology for other teachers in the school. | 14 | 2.36 | 1.15 | 4.07 | 4.07 | 4.84 | 0.0003 | 1.93 | very large |
| 19 | I collaborate with others within the school to effectively integrate technology into instruction. | 14 | 2.29 | 1.14 | 4.36 | 4.36 | 6.79 | <.0001 | 2.45 | very large |
| 20 | I serve as a resource to other teachers regarding the effective use of technology in the school. | 13 | 2.86 | 1.17 | 4.54 | 4.54 | 6.88 | <.0001 | 1.91 | very large |
| 21 | I can effectively work with others to assess their learning and information needs (e.g., other teachers, students, administrators, etc.). | 13 | 2.64 | 1.15 | 4.15 | 4.15 | 4.62 | 0.0006 | 1.72 | very large |
| 22 | I have an ongoing dialogue with other staff members at the school about technology issues and how they can be addressed. | 14 | 2.57 | 0.94 | 4.36 | 4.36 | 6.36 | <.0001 | 2.19 | very large |

**Table 24. Structural Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| Item | Item Statement | *n* | Pre Mean | Pre *SD* | Post Mean | Post *SD* | Significance of difference *t* | Significance of difference *p* | Cohen's *d* | Effect size |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | The school has set a time and place where staff meet in professional communities of practice to discuss how to effectively integrate technology into instruction. | 14 | 2.14 | 1.17 | 3.00 | 1.36 | 3.12 | .0081 | 0.70 | medium |
| 24 | Teachers at the school have time to co-plan and/or co-teach lessons that integrate technology into instruction. | 14 | 2.43 | 1.22 | 3.29 | 1.44 | 2.92 | .0120 | 0.67 | medium |
| 25 | Staff at the school understand the acceptable use policy. | 14 | 3.21 | 0.97 | 3.79 | 0.70 | 2.28 | .0401 | 0.70 | medium |
| 26 | Staff at the school understand key concepts and best practices regarding web literacy. | 14 | 2.71 | 0.91 | 3.57 | 0.65 | 3.38 | .0049 | 1.12 | very large |
| 27 | Staff at the school understand the most important issues surrounding legal use/copyright regulations and how they relate to integrating web resources and technology into lesson plans and instruction. | 13 | 2.85 | 0.90 | 3.38 | 0.96 | 2.50 | .0279 | 0.60 | medium |
| 28 | Staff at the school are familiar with the technology components of the school's strategic plan. | 14 | 2.93 | 1.07 | 3.36 | 0.84 | 2.48 | .0275 | 0.46 | medium |
| 29 | The school has policies and procedures in place that support the use of Project Based Learning (PBL). | 14 | 2.64 | 1.08 | 3.50 | 0.85 | 3.71 | .0026 | 0.91 | large |
| 30 | The school has policies and procedures in place that support the use of technology resources (e.g., Thinkfinity, Acuity, West Virginia Writes, etc.). | 14 | 3.64 | 0.84 | 4.21 | 0.80 | 2.28 | .0401 | 0.72 | medium |

*Table 24 continues next page*

**Table 24. Structural Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| Item | Item Statement | *n* | Pre Mean | Pre *SD* | Post Mean | Post *SD* | Significance of difference *t* | Significance of difference *p* | Cohen's *d* | Effect size |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Staff at the school regularly use Thinkfinity and or Curriculum Pathways (SAS) as a resource in the classroom. | 14 | 2.00 | 0.68 | 2.79 | 0.97 | 4.20 | .0010 | 0.97 | large |
| 32 | Staff at the school regularly use West Virginia Writes or another online writing program as a formative assessment of student writing. | 14 | 3.43 | 0.85 | 4.21 | 0.80 | 4.20 | .0010 | 0.99 | large |
| 33 | The school has a plan in place to support the implementation of TechSteps. | 14 | 3.21 | 1.12 | 3.86 | 1.10 | 2.59 | .0224 | 0.60 | medium |
| 34 | Staff at the school regularly use TechSteps as part of their core content instruction. | 14 | 2.50 | 1.22 | 3.29 | 0.99 | 2.62 | .0212 | 0.73 | medium |
| 35 | Staff at the school understand the core National Education Technology Standards and Performance Indicators for Teachers (NETS-T). | 14 | 2.14 | 0.86 | 3.00 | 0.96 | 3.38 | .0049 | 0.97 | large |
| 36 | Staff at the school understand the National Education Technology Standards and Performance Indicators for Students (NETS-S). | 14 | 2.21 | 0.80 | 2.93 | 1.00 | 2.92 | .0118 | 0.82 | large |
| 37 | Staff at the school understand West Virginia's 21st Century Skills and Tools. | 14 | 2.43 | 1.02 | 3.50 | 0.94 | 4.02 | .0015 | 1.14 | very large |
| 38 | Staff at the school use Web 2.0 tools for collaboration and instruction. | 14 | 2.36 | 1.08 | 3.36 | 0.93 | 3.89 | .0018 | 1.03 | large |
| 39 | Staff at the school frequently integrate digital resources/tools in their teaching. | 14 | 2.50 | 0.94 | 3.79 | 0.89 | 4.22 | .0010 | 1.46 | very large |

**Table 25. Material Capacity Items: Pre and Post Means, *T* Test and Effect Size**

| | | | Pre | | Post | | Significance of difference | | Cohen's | Effect |
|---|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | Mean | *SD* | *t* | *p* | *d* | size |
| 40 | I have access to a variety of high quality technology resources at my school (e.g., computer, digital camera, whiteboard, etc.). | 13 | 3.85 | 0.80 | 4.54 | 0.52 | 2.63 | 0.0218 | 1.07 | large |
| 41 | I participated in a variety of professional development about integrating technology resources into instruction. | 13 | 2.77 | 1.01 | 4.23 | 0.73 | 6.01 | <.0001 | 1.73 | very large |
| 42 | I feel I am able to direct staff in my school toward high quality technology resources that are relevant to their information needs. | 13 | 2.08 | 0.86 | 4.23 | 0.73 | 7.87 | <.0001 | 2.81 | very large |
| 43 | I have the ability to develop useful technology resources for my school that address our information needs. | 13 | 1.92 | 0.86 | 4.15 | 0.69 | 8.68 | <.0001 | 2.98 | very large |
| 44 | I know where to find useful and high quality technology resources that can be integrated into instruction. | 13 | 2.23 | 0.83 | 4.54 | 0.52 | 8.78 | <.0001 | 3.46 | very large |

# Appendix E. Teacher Colleague Technology Use Indices

**Table 26. Facilitate Items: Pre and Post Means, *T* Test and Effect Size**

| | | Pre | | | Post | | | Significance of difference | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | *n* | Mean | *SD* | *t* | *p* |
| 1 | I use information from digital sources to promote learning and engage students in classroom activities. | 40 | 2.70 | 0.91 | 26 | 2.92 | 0.74 | 1.04 | 0.30 |
| 2 | I require my students to use digital resources and tools for writing, collaboration, reflection, research, and other assignments. | 40 | 2.03 | 1.00 | 26 | 2.46 | 0.95 | 1.77 | 0.08 |
| 3 | I engage my students in real-world issues and authentic problem-solving. | 40 | 2.55 | 0.81 | 26 | 2.92 | 0.84 | 1.79 | 0.08 |
| 4 | I require my students to gather information from sources other than their textbooks in order to complete their daily assignments (e.g., podcasts, videos, etc.). | 40 | 2.08 | 0.89 | 26 | 2.46 | 0.95 | 1.68 | 0.10 |
| 5 | I require my students to present information and actively teach content to their fellow students and/or community members. | 40 | 2.00 | 0.93 | 26 | 2.23 | 0.91 | 1.00 | 0.33 |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.

**Table 27. Design Items: Pre and Post Means, *T* Test and Effect Size**

| | | Pre | | | Post | | | Significance of difference | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | *n* | Mean | *SD* | *t* | *p* |
| 1 | I use a blend of both face-to-face and online environments to deliver instruction to my students. | 40 | 2.13 | 0.91 | 25 | 2.08 | 0.95 | 0.19 | 0.85 |
| 2 | I design and/or implement projects that emphasize creative thinking and require students to engage in problem-solving, decision-making and experimental inquiry, using digital resources/tools when appropriate. | 40 | 2.18 | 0.90 | 25 | 2.52 | 0.87 | 1.52 | 0.13 |
| 3 | I often design and/or utilize student-centered formative and performance-based assessments using available digital resources and tools (e.g., WV Writes, Acuity, TechSteps, etc.). | 40 | 2.18 | 1.03 | 25 | 2.32 | 0.85 | 0.59 | 0.56 |
| 4 | I use digital resources and tools to make assignments for students that are based upon their individual interests, abilities and learning needs. | 40 | 2.28 | 0.99 | 25 | 2.60 | 0.87 | 1.35 | 0.18 |
| 5 | I require my students to set personal learning goals and to self-assess their progress toward meeting those goals, using digital resources and tools when available and appropriate. | 40 | 1.95 | 0.96 | 25 | 2.08 | 0.76 | 0.57 | 0.57 |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.

**Table 28. Model Items: Pre and Post Means, *T* Test and Effect Size**

| | | Pre | | | Post | | | Significance of difference | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | *n* | Mean | *SD* | *t* | *p* |
| 1 | I use digital resources and tools to communicate with students. | 40 | 2.03 | 1.07 | 25 | 2.08 | 1.04 | 0.20 | 0.84 |
| 2 | I use digital resources and tools to communicate with my peers. | 40 | 2.85 | 0.80 | 25 | 3.16 | 0.80 | 1.52 | 0.13 |
| 3 | I use digital resources and tools to communicate with parents and the community outside of my school. | 40 | 2.55 | 0.99 | 25 | 2.44 | 0.96 | 0.44 | 0.66 |
| 4 | I customize the available digital resources and tools such as WV Writes, Acuity, TechSteps, etc. to personalize learning for my students. | 40 | 2.10 | 0.98 | 25 | 2.29 | 1.20 | 0.70 | 0.49 |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.

**Table 29. Promote Items: Pre and Post Means, *T* Test and Effect Size**

| | | Pre | | | Post | | | Significance of difference | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | *n* | Mean | *SD* | *t* | *p* |
| 1 | I advocate, model and teach my students about safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources. | 40 | 2.48 | 1.06 | 25 | 2.84 | 1.03 | 1.36 | 0.17 |
| 2 | I offer students opportunities to use digital resources and tools to participate in collaborative projects with students of other cultures that address current problems, issues or themes. | 40 | 1.75 | 1.01 | 25 | 1.92 | 1.00 | 0.67 | 0.51 |
| 3 | Students in my class model appropriate online behavior and social interaction through digital activities in my classroom. | 40 | 2.63 | 1.00 | 25 | 2.80 | 0.91 | 0.71 | 0.48 |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.

**Table 30. Engage Items: Pre and Post Means, *T* Test and Effect Size**

| | | Pre | | | Post | | | Significance of difference | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | *n* | Mean | *SD* | *t* | *p* |
| 1 | I participate actively in local communities of practice with my fellow teachers, either online or face-to-face. | 40 | 2.48 | 0.96 | 24 | 2.42 | 0.88 | 0.24 | 0.81 |
| 2 | I participate actively in online/global communities with other educators outside of my local community to gather and discuss resources and ideas related to student achievement and learning. | 40 | 1.75 | 0.78 | 24 | 1.79 | 0.93 | 0.19 | 0.85 |
| 3 | I model and teach other educators to use digital tools and resources to promote student achievement and learning. | 40 | 1.83 | 0.78 | 24 | 1.63 | 0.65 | 1.06 | 0.30 |
| 4 | I regularly seek out digital resources, tools and research and evaluate its quality and relevance prior to using it in the classroom. | 40 | 2.35 | 1.03 | 24 | 2.33 | 0.96 | 0.06 | 0.95 |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.

# Appendix F. School Administrator Survey Results

**Table 31. SETIS School Administrator Survey Items: Pre and Post Means, *T* Test and Effect Size**

| | | | Pre | | Post | | Signifi-cance of differ-ence | |
|---|---|---|---|---|---|---|---|---|
| Item | Item Statement | *n* | Mean | *SD* | Mean | *SD* | *t* | *p* |
| Share | I plan to ask my SETIS to share/ My SETIS shared what he/she has learned by leading professional development for the other teachers in my school. | 8 | 4.50 | 0.53 | 4.38 | 0.74 | 0.39 | 0.71 |
| Model | I plan to ask my SETIS to model/ My SETIS modeled the integration of technology for his/her coteachers and others within the school. | 8 | 4.38 | 0.74 | 4.63 | 0.52 | 0.78 | 0.44 |
| Assist in plan | I anticipate asking my SETIS to assist/ My SETIS assisted me in developing the school's strategic plan with regard to information and technology needs. | 8 | 4.38 | 0.92 | 3.88 | 0.83 | 1.14 | 0.27 |
| Assist teacher | I expect that my SETIS will assist/ My SETIS assisted his/her coteachers in customizing available digital resources and tools such as WV Writes, TechSteps, Acuity, Edmodo, Thinkfinity, etc. to personalize learning for students. | 8 | 4.50 | 0.76 | 4.38 | 0.74 | 0.33 | 0.74 |
| Work with teacher | I will request that the SETIS/ I requested that the SETIS work with teachers to identify digital resources and tools that effectively integrate technology into their current curriculum. | 8 | 4.63 | 0.74 | 3.88 | 1.46 | 1.30 | 0.22 |
| Conduct analysis | I will ask the SETIS/ I asked the SETIS to conduct analyses of student data and engage in action research to help me understand the impact of technology integration at my school. | 8 | 4.00 | 1.20 | 3.63 | 1.30 | 0.60 | .056 |
| Observe | Based on your classroom observations this school year, has the SETIS candidate increased student engagement in curricular activities through increased use of technology. | 8 | NA | NA | 4.75 | 0.46 | NA | NA |

NOTE: Cohen's *d* effect sizes were not computed for any nonsignificant individual item results.



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