U.S. Department of Education
Grant Performance Report Cover Sheet (ED 524B)

[ ] Annual Performance Report [X] Final Performance Report

Executive Summary

PR/Award #: H235E190004

The Braille Excellence for Students and Teachers (BEST) Grant final performance report provides information indicating how the BEST project met its goals during the 2019-2024 grant cycle. The project focused on three goals that help to promote the BEST grants' focus areas to (1) increase the knowledge of TVIs, intervention specialists, general educators, paraprofessionals, and transcribers in obtaining and creating accessible documents thereby increasing equitable access to braille materials in inclusive settings and (2) heavily market to and expand our reach to increase opportunities for TVIs working in rural communities.

Goal 1: Enhance the competency of pre-service and in-service educators, paraprofessionals, and others to provide braille literacy instruction and support across all academic areas including Science, Technology, Engineering, and Math (STEM).

> **Highlights:** Fifty-one trainings were completed comprising sixty-seven individual sessions to accomplish goal 1. Trainings focused on STEM and on the reading and writing of braille.

Goal 2: Enhance the competency of both pre-service and in-service educators, paraprofessionals, and others to efficiently and effectively acquire and create braille materials.

> **Highlights:** Forty-seven trainings/events were completed comprising seventy-one individual sessions to accomplish goal 2. Trainings and events focused on producing accessible documents; technology related events with some being specialized presentations to university TVI students highlighting braille production, accessible documents, and assistive technology. Specialized technical assistance was provided to districts/agencies producing braille and educators in the process of becoming a certified braille transcriber. Seventeen new local braille production centers were awarded through an application process, set up, and trained.

Goal 3: Educators and others will be able to apply strategies learned in the BEST project trainings and other activities to more effectively manage the braille needs of their students through the support of follow-up technical assistance or resources.

> **Highlights:** The BEST Grant Professional Learning Community was available to participants of BEST trainings this year. It offered an all-access place for BEST training recordings, materials, announcements, and support as well as a place to network with other educators who are serving the blind and visually impaired.

The BEST Tips and Tricks Videos provide support to educators on specific topics 24/7. On-Demand Tips and Tricks videos received 559 plays for a total of 24.85 hours from June 2023 through September 30, 2024. From May 1, 2023, to September 30, 2024, a total of 1,501 active users accessed the BEST site.

Many of the grant participants were from within the state of Ohio, including the Appalachian areas. Due to our continued virtual trainings, events, hybrid trainings, and online resources our area of reach increased and included participants from other states within the U.S., as well as international participants. Over the 5 years of the grant, there were 4,966 participants in grant activities. It was anticipated that there would be 2,500 participants served throughout the entire 5 years of the grant, which the grant surpassed.

BEST collected data on each grant activity keyed to a project objective. WordFarmers, the grant external evaluator, then compiled, analyzed, and interpreted the data to determine the effectiveness of the activity and suggest options for improvement and continued growth for each project year. Each PD session was evaluated by external evaluators, WordFarmers, based on observations and attendee feedback, specifically in the areas of quality, relevance, and usefulness. Of the sessions completed over the BEST grant 2019-2024 cycle, 100% of the trainings equaled or exceeded a 6 with a range from 2(low) to 8(high) on each of the three measures: quality, relevance, and usefulness. All scores were within our project target of 6, this totals 100% of grant activities within the project year as meeting the performance measure.

Additionally, WordFarmers conducted a longitudinal study which continued over the course of the final 1.5 years of the grant for the purpose of (1) to investigate how BEST project participants made use of BEST courses and technical assistance to obtain the skills and expertise needed to fulfill current job responsibilities and to achieve career objectives and (2) to investigate participants' perceptions of the impact, quality, relevance, and usefulness of their BEST experiences and the alignment between their perceptions and BEST project goals.

WordFarmers 2019-2024 BEST 5 Year Report

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Executive Summary

Braille Excellence for Students and Teachers (BEST) is a federally funded project to improve braille literacy and the provision of braille materials and technology in the state of Ohio. It addresses these goals by providing professional development (PD) and technical assistance (TA) to school districts, educational service centers, and human service agencies. In addition, it develops and disseminates products to support braille literacy and transcription.

This report summarizes evaluation findings from the 2019-2024 project cycle of the BEST contract (October 1, 2019, and September 30, 2024). The evaluation findings, reported by WordFarmers Associates (a third-party evaluation firm), contribute to determinations of the extent to which BEST accomplished its overall project goals:

1. To enhance the competency of preservice and in-service educators, paraprofessionals, and others to provide braille literacy instruction and support across all academic areas including STEM.
2. To enhance the competency of both pre-service and in-service educators, paraprofessionals, and others to acquire and create braille materials efficiently and effectively.
3. To enable educators and others to apply strategies learned in the BEST grant trainings and other activities to more effectively manage the braille needs of their students through the support of follow-up TA or resources.

The evaluators developed this summary from the data accumulated over the five-year project. The evaluators maintained a data dashboard for reporting all quantitative data relating to the quality, relevance, usefulness, and impact of BEST PD and TA; they also maintained a repository of brief reports presenting aggregated feedback from recipients of BEST's PD and TA.

The summary data presented in this report address five evaluation questions relating to (1) the accomplishment of goals and objectives; (2) the quality, relevance, and usefulness of PD and TA; and (3) the impact of PD and TA.

1. Did BEST fulfill its plans for providing professional development (PD) and technical assistance (TA)?
2. Were the PD and TA of good quality?
3. Were the PD and TA relevant to the client groups that BEST served?

4. Were the PD and TA useful to the client groups that BEST served?
5. Did BEST PD and TA have a significant impact?

The section called *BEST Accomplishments* discusses the extent to which BEST carried out its plans for providing PD and TA. The *Quality, Relevance, and Usefulness* section presents aggregated participant feedback about the PD and TA that BEST offered. Finally, the *Impact* section details findings from participants' self-ratings of knowledge before and after each course. Some of the trainings also involved pre- and post-assessments documenting participants' acquisition of new knowledge and skills through their participation in BEST PD and TA activities. This section also addresses specific project targets specific to instructional content relating to STEM disciplines and the engagement of professionals from rural and Appalachian parts of the state. The report also briefly discusses how BEST, responding to the COVID-19 pandemic, continued to deliver PD and TA during this time (i.e., when face-to-face provision of services was not possible).

Findings from aggregations of data across the five-year cycle demonstrated the effectiveness of the project and provided a large amount of evidence to support affirmative responses to each of the evaluation questions: BEST carried out its plans for providing professional development (PD) and technical assistance (TA); PD and TA activities were of high quality; PD and TA activities were relevant to the client groups that BEST served; and PD and TA activities were useful to those client groups.

Introduction

Braille Excellence for Students and Teachers (BEST) is a federally funded project aimed at improving braille literacy as well as braille materials and technology, throughout the state of Ohio. Its explicit goals are to:

1. Enhance the competency of preservice and in-service educators, paraprofessionals, and others to provide braille literacy instruction and support across all academic areas including science, technology, engineering, and math (STEM).
2. Enhance the competency of both pre-service and in-service educators, paraprofessionals, and others to efficiently and effectively acquire and create braille materials.
3. Enable educators and others to apply strategies learned in the BEST grant trainings and other activities to more effectively manage the braille needs of their students through the support of follow-up TA or resources.

Addressing these three broad goals, BEST provides professional development (PD) and technical assistance (TA) to various client groups, including school districts, educational service centers, and human service agencies. It also develops and disseminates products to support braille literacy and transcription. An additional BEST goal relates to effective and efficient project management.

This report presents a summary of the third-party evaluation for the 2019-2024 project cycle of the BEST grant. The purpose of this report is to provide a concise summary of the five-year efforts of the BEST team. The evaluation was designed to address five key questions about BEST's performance:

1. Did BEST fulfill its plans for providing professional development (PD) and technical assistance (TA)?
2. Were the PD and TA of good quality?
3. Were the PD and TA relevant to the client groups that BEST served?
4. Were the PD and TA useful to the client groups that BEST served?
5. Did BEST PD and TA have a significant impact?

Methods

The third-party evaluators developed the summary presented in this report from the data accumulated throughout the project. Throughout the five years of the project, a data dashboard was maintained for reporting all quantitative data relating to the quality, relevance, usefulness, and impact of BEST professional development and technical assistance. A project wiki served as a repository for brief reports presenting aggregated

feedback from recipients of BEST's PD and TA. These data were shared with the project at regular intervals, including presentations to the BEST Advisory Board, enabling the project to be responsive to participant feedback.

Quality, Relevance, and Usefulness Calculations

The evaluation measures quality, relevance, and usefulness with the following items, rated on a 1-4 scale (1=strongly disagree; 2=disagree; 3=agree; 4=strongly agree):

Quality (Four Items)

- The intended outcomes of the training were clear.
- The training content reflected the stated purpose of the training.
- The pacing of the session was comfortable (i.e., neither too slow nor too fast).
- The training session used methods that helped me learn the content.

Relevance (Four Items)

- The training accommodated my learning needs.
- The content of the training was evidence-based.
- The presenter showed the connections between the content and my work with students who are Blind/Visually Impaired (B/VI).
- Overall, the training was relevant.

Usefulness (Four Items)

- The knowledge and skills presented in this training will have a positive impact on my professional practice.
- This training would be useful to colleagues who work with students with B/VI.
- I learned enough in the training to use new knowledge and skills right away.
- Overall, the training was useful.

Quality, relevance, and usefulness were measured as the sum of each set of items. To provide a common metric, total scores for these measures were all reported on an eight-point scale.

Measures of Impact

Impact 1: Self-ratings of knowledge before and knowledge after the training provided the basis for judging impact (i.e., *before* ratings subtracted from *after* ratings). All

“before” and “after” items were rated on a 1-5 scale (1=no knowledge/skill; 2=low; 3=moderate; 4=high; 5=very high).

The impact measurement required two calculations: (1) the average difference between knowledge after and knowledge before across all respondents (for each pair of items) and (2) the standard deviation in the differences that made up the average. These two statistics were combined to produce *effect sizes* (Cohen's *d*). Cohen’s *d* effect sizes represent the change (difference between after and before) as a proportion of the pooled standard deviation. The evaluators oriented to conventional interpretations of effect size: Ratings of .20 and lower are typically considered low, those of about .50 moderate, and those of .80 and higher strong. When data sets were large enough (N = 10 or higher), the evaluators also calculated the statistical significance of growth in knowledge (i.e., the difference between knowledge after and knowledge before).

Impact 2: Participants in a subset of BEST PD session completed a pre- and post-knowledge test as an additional way to show their growth in knowledge. The evaluators used the comparison between these pre- and post-test as a second way to evaluate project impact. This approach was used most often in more extensive PD courses where the presenter could administer a pre-test of relevant knowledge and skills at the beginning of the course and a post-test at the end. Comparisons of the paired (before and after) scores provided a measure of the extent to which the course contributed to participants’ knowledge. A statistically significant difference between respondents’ pre-test scores and post-test scores suggested that the course increased participants’ levels of knowledge.

Qualitative Data

The routine evaluations also asked respondents to provide comments in response to two questions:

- What additional feedback about the training event would you like to share?
- What additional professional development topics would be useful in your current role?

Answers to these questions were reported in their entirety after each session. Qualitative feedback from participants was examined by program staff, discussed, and, when applicable, used as the basis for modifying the content and/or format of future sessions.

Response to COVID-19

The COVID-19 pandemic, which began in March 2020, impacted both the types of services provided by BEST and the evaluations conducted from the end of reporting

year two onwards. Wherever possible, PD and TA sessions were moved to an online format. All evaluations were also conducted online during that time period, with surveys hosted on several different online survey platforms (SurveyMonkey, Qualtrics, and Zoho Survey). Interviews and observations were also moved to an online format (via Zoom). Following the pandemic, the online format was maintained for many of the BEST offerings, and online surveying of participants was continued as a routine approach to data collection.

Findings

This section of the report provides summary data that addresses the five evaluation questions listed above. It begins with a section called *BEST Accomplishments*, which discusses the extent to which BEST carried out its plans for providing PD and TA. Then, *Quality, Relevance, and Usefulness* presents aggregated participant feedback about the PD and TA that BEST offered. Finally, the *Impact* section details findings from pre- and post-assessments documenting participants' acquisition of new knowledge and skills resulting from their participation in BEST PD and TA activities. The report also briefly discusses how BEST responded to the COVID-19 pandemic to continue delivering PD and TA during this time.

BEST Accomplishments

Tables 1 through 5 provide information about the PD and TA provided by BEST in each year of the project. They document the extensive effort put forth by the project in each year of its operation.

Table 1: BEST Accomplishments in Project Year One (2019-2020)

Goal One
● Objective 1.1
○ BrailleNote Touch Plus with KeyMath (2/21/20)
○ MathType and Equatio Software Training (3/6/20)
○ Four-Day Basic Nemeth (6/15/2020 to 6/18/2020)
● Objective 1.2
○ BrailleNote with Google (10/24/2019)
○ Twelve-Week Blended Basic Braille (2/26/2020 to 5/13/2020)
○ Braille Reading and Writing Smackdown (2/28/2020)

- Three-Day Basic Braille (6/8/2020 to 6/10/2020)
- Four-Week Advanced Braille (6/11/2020 to 7/13/2020)
- A Touch of Braille - Introduction to Alphabet and Numbers (9/18/2020)
- Paraprofessional Instructional Support Techniques: Supporting Students Who Are Braille Users (9/25/2020)

Goal Two

- Objective 2.1
  - Creating Accessible Microsoft Word Documents (9/3/2020)
  - Scanning for Braille, Large Print, and Audio (9/15/2020 to 9/24/2020)
- Objective 2.2
  - Two-Day Duxbury Braille Translation (DBT) Software Training (10/29/2019 to 10/30/2019)
  - Braille AT Forum at OCALION (11/19/2019 to 11/22/2019)
  - VI/Braille AT for University Students at Shawnee State (6/22/2020)
  - VI/Braille AT for University Students at OSU (9/28/2020)
  - Virtual AT Conference and Vendor Fair (9/29/2020)
- Objective 2.3
  - Technical Assistance to Grafton Braille Service Center (2/18/2020 to 2/19/2020)
  - Technical Assistance to educators learning and producing braille
  - Technical Assistance to braille transcriber candidates
- Objective 2.4
  - Local Braille Production Centers
    - South Central ESC (12/11/2019)
    - Logan Elm Schools (1/9/2020)
    - Findlay City Schools (2/14/2020)

Goal Three

- Objective 3.1
  - Peer-to-peer support network (multi-year scope of work)

○ Online TA portal (multi-year scope of work)
○ Online repository of BEST PD resources (multi-year scope of work)
○ Webinars (3) on Streamlining Braille Production (Posted on website)
○ Tips and Tricks Braille Technology (6) online resources - Braille Math Conversion (Posted on website)

Table 2: BEST Accomplishments in Project Year Two

Goal One
● Objective 1.1
○ Four-Day Basic Nemeth (6/8/2021 to 6/29/2021)
○ Four-Day Advanced Nemeth (6/16/2021 to 6/30/2021)
○ BrailleNote Touch with KeyMath (2/26/2021)
○ Producing Tactile Graphics on the Juliet 120 (8/31/2021)
○ STEM Tactile Graphics: Using the Tactipad (9/7/2021)
○ Explore the T3 Tablet and TG Features (9/20/2021)
● Objective 1.2
○ Three-Day Basic Braille (6/14/2021 to 6/28/2021)
○ BrailleNote with Google (1/29/2021)
○ Braille Formatting (10/2/2020)
Goal Two
● Objective 2.1
○ Two-Day Creating Accessible PDFs (2/9/2021 to 2/10/2021)
○ Scanning for Braille, LP, Audio (9/14/2021 to 9/23/2021)
○ Using Macros and Templates to Produce LP, Braille and Electronic Text (3/16/2021 to 3/25/2021)
● Objective 2.2

○ Two-Day Duxbury Braille Translation Software (10/20/2020 to 10/29/2020)
○ VI/Braille AT for Shawnee University Students (6/24/2021)
○ Lunch and Learn Duxbury Sessions: TN (12/15/2020)
○ Lunch and Learn Duxbury Sessions: Tables (1/19/2021)
○ Lunch and Learn Duxbury Sessions: Line Numbered Text (2/16/2021)
○ Virtual AT Conference and Vendor Fair (9/29/2021)
● Objective 2.3
○ Technical Assistance to braille transcriber candidates
○ Technical Assistance to educators learning and producing braille (OSSB, AT&AEM, and local school district braille production centers)
○ Technical Assistance to Grafton Braille Service Center
● Objective 2.4
○ Local Braille Production Centers ■ Ashtabula ESC (01/20/2021) ■ Midview ESC (01/27/2021) ■ Ohio Valley ESC (03/26/2021) ■ Orrville (04/22/2021)
Goal Three
● Objective 3.1
○ Peer-to-peer support network (multi-year scope of work)
○ Online TA portal (multi-year scope of work)
○ Online repository of BEST PD resources (multi-year scope of work)
○ Webinar Series on Creating AEM to Streamline Braille Production (October 2020)

Table 3: BEST Accomplishments in Project Year Three

Goal One

● Objective 1.1
○ Basic Nemeth (6/7/2022 to 6/28/2022)
○ MathType and Equatio Software Training (2/8/2022 to 2/10/2022)
○ BrailleNote Touch Plus with KeyMath (1/19/2022)
○ Nemeth Refresher (5/13/2022)
● Objective 1.2
○ 12-Week Basic Braille (2/23/2022 to 5/11/2022)
○ Basic Braille (June 13-20-27, 2022)
○ Advanced Braille (6/15/2022 to 6/29/2022)
○ BrailleNote with Google (2/2/2022)
○ A Touch of Braille (10/4/21)
○ Paraprofessional Instructional Support Techniques (3/7/2022)
Goal Two
● Objective 2.1
○ Creating Accessible Microsoft Word Documents (2/28/2022)
○ Four-Day Scanning for Braille, Large Print, and Audio (09/14/2022 to 09/23/2022)
○ Two-Day Using Microsoft Word Templates and Macros to Produce Large Print, Braille and Electronic Text (3/15/2022 to 3/24/2022)
● Objective 2.2
○ Braille AT Forum at OCALICON 2021 (11/16/21)
○ Duxbury Braille Translation Software (10/12/2021 to 10/28/2021)
○ VI/Braille AT for Shawnee State University Students (6/23/2022)
○ VI/Braille AT for OSU TVI Students (10/26/2021) and (2/28/2022)
○ Transcribers Notes - Lunch & Learn Duxbury (12/7/2021)

○ Tables - Lunch & Learn Duxbury (1/11/2022)
○ Line Numbered Text - Lunch & Learn Duxbury (1/25/2022)
● Objective 2.3
○ Technical Assistance to braille transcriber candidates testing for braille certification (as requested)
○ Technical Assistance to OSSB, AT&AEM, and local school district braille production centers (as requested)
○ Technical Assistance to Grafton Braille Service Center (as requested)
● Objective 2.4
○ Local Braille Production Centers – LBPCs ■ Troy SD ■ Canton SD ■ Lima CS ■ Kettering SD
Goal Three
● Objective 3.1
○ Video Resource: Sourcing Ready-made Braille Materials (October 2021)

Table 4: BEST Accomplishments in Project Year Four

Goal One
● Objective 1.1
○ Exploring the T3 Tablet (11/8/2022)
○ Basic Nemeth (6/7/2023 to 6/28/2023)
○ Advanced Nemeth (6/15/2023 to 6/29/2023)
○ BrailleNote with KeyMath (1/18/2023)
○ Producing Tactile Graphics on the Juliet 120 (3/13/2023)
○ Using the TactiPad (12/6/2022)
● Objective 1.2

○ Basic Braille (6/13/2023 to 6/27/2023)
○ BrailleNote with Google (1/18/2023)
○ Braille Formatting: Best Practices for Braille Materials (10/5/2022)
○ Introduction to Braille Music (6/16/2023)
○ A Touch of Braille (9/6/2023)
○ Paraprofessional Instructional Support Techniques (9/13/2023)
Goal Two
● Objective 2.1
○ Creating Accessible PDFs (10/17/2022 to 10/18/2022)
○ Scanning for Braille, Large Print, and Electronic Text (1/10/2023 to 1/19/2023)
○ Using Microsoft Word Templates and Macros to Produce Braille and Large Print (3/21/2023 to 3/30/2023)
● Objective 2.2
○ Braille AT Forum at OCALICON 2022
○ Duxbury Braille Translation Software (2/14/2023 to 3/2/2023)
○ AT Exploration Day for Shawnee State University TVI Students (6/23/2023)
○ AT Exploration Day for OSU TVI Students (2/13/2023)
○ AT Exploration Day for OSU TVI Students (9/26/2023)
● Objective 2.3
○ Technical Assistance to braille transcriber candidates testing for braille certification (as requested)
○ Technical Assistance to OSSB, AT&AEM, and local school district braille production centers (as requested)
○ Technical Assistance to Grafton Braille Service Center (as requested)
● Objective 2.4

○ Local Braille Production Centers – LBPCs ■ Jackson Milton Local SD ■ South Point Local SD ■ Clark Shawnee SD
Goal Three
● Objective 3.1
○ 26 “Tips and Tricks” Videos

Table 5: BEST Accomplishments in Project Year Five

Goal One
● Objective 1.1
○ Four-Day Basic Nemeth (06/05/2024 - 06/26/2024)
○ BrailleNote Touch with KeyMath (1/31/2024)
○ MathType and Mathpix for Braille Production (3/4/2024)
● Objective 1.2
○ Braille Instructional Support Techniques for Language Arts (11/29/2023)
○ 12-Week Braille (2/21/2024 to 5/8/2024)
○ BrailleNote with Google (1/31/2024)
○ Basic Braille (06/11/2024 - 06/25/2024)
○ Advanced Braille (06/13/2024 - 06/27/2024)
○ A Touch of Braille (09/10/2024)
○ Paraprofessional Instructional Support Techniques (09/17/2024)
Goal Two
● Objective 2.1
○ Creating Accessible Word Documents (10/10/2023)

- Scanning for Braille, Large Print, and Electronic Text (1/9/2024 to 1/18/2024)
- Using Microsoft Word Templates and Macros to Produce Braille, Large Print, and Electronic Text (3/19/2024 to 3/28/2024)

- Objective 2.2
  - AT Exploration Day (2/20/2024)
  - Using Word and Duxbury Braille Translation (DBT) Software (2/6/2024 to 2/22/2024)
  - AT Exploration Day (06/24/2024)
  - AT Exploration Day OSU (09/17/2024)
  - Screen Reader Training (09/23/2024)
- Objective 2.3
  - Technical Assistance to braille transcriber candidates testing for braille certification (as requested)
  - Technical Assistance to OSSB, AT&AEM, and local school district braille production centers (as requested)
  - Technical Assistance to Grafton Braille Service Center (as requested)
- Objective 2.4
  - Local Braille Production Centers - LBPCs (October 2023)
    - Ironton Local SD
    - Three Rivers Local SD
    - EJ Therapy Services
- Objective 3.1
  - Webinar on Duxbury (October 2023)

Quality, Relevance, and Usefulness

This section presents aggregated findings based on participants' ratings of the quality, relevance, and usefulness of the PD and TA provided by BEST.

Table 6 presents data disaggregated by project year (see also Figure 1). Averaged across the five project years, ratings for all three indicators were very high (ratings above 7.0 out of a possible 8.0), indicating that participants found BEST PD and TA to be of high quality, relevance, and usefulness.

Table 6 *Average quality, relevance, and usefulness ratings for BEST PD by project year. Quality, relevance, and usefulness are measured on an eight-point scale.*

Project Year	Quality	Relevance	Usefulness
PY 1	7.40	7.51	7.55
PY 2	7.32	7.41	7.40
PY 3	7.12	7.30	7.33
PY 4	7.14	7.24	7.29
PY 5	7.07	7.35	7.37
Overall	*7.21*	*7.36*	*7.39*

Figure 1: ***Average Quality, Relevance, and Usefulness Scores for BEST PD by Project Year***

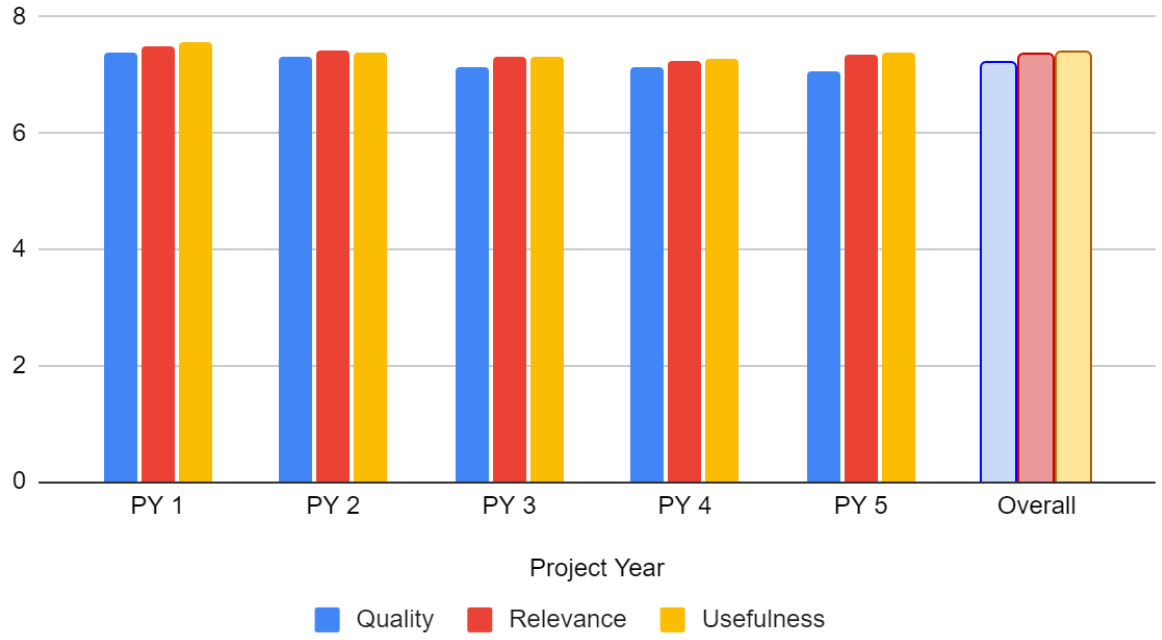


Table 7 presents the overall mean quality, relevance, and usefulness ratings by objective averaged across the five-year cycle. The lowest ratings for quality, relevance, and usefulness (6.93, 7.23, and 7.25, respectively), still high ratings, were given to activities addressing Objective 2.1.

Table 7 *Mean ratings of quality, relevance, and usefulness by objective. Quality, relevance, and usefulness are measured on an eight-point scale.*

Objective	Quality	Relevance	Usefulness
Objective 1.1	7.23	7.37	7.45
Objective 1.2	7.28	7.40	7.44
Objective 2.1	6.93	7.23	7.25
Objective 2.2	7.17	7.32	7.28

Table 8 shows ratings by objective by project year. Most ratings for quality, relevance, and usefulness were rated highly across objectives. The lowest ratings were for Objective 2.1 in project year 3 (quality = 6.42, relevance = 6.82, usefulness = 6.78).

Table 8 *Average ratings of quality, relevance, and usefulness by objective for each project year (on an eight-point scale).*

Objective	Project Year	Quality	Relevance	Usefulness
1.1	1	7.38	7.54	7.59
	2	7.32	7.40	7.38
	3	7.12	7.40	7.45
	4	7.01	6.99	7.25
	5	7.45	7.84	7.83
1.2	1	7.42	7.50	7.57
	2	7.36	7.57	7.58
	3	6.97	7.04	7.23
	4	7.39	7.45	7.38
	5	7.20	7.41	7.41
2.1	1	6.80	6.80	6.80
	2	7.04	7.10	7.15
	3	6.42	6.82	6.78
	4	7.35	7.78	7.75
	5	7.01	7.38	7.52
2.2	1	7.16	7.43	7.44
	2	7.43	7.48	7.47
	3	7.63	7.75	7.64
	4	6.78	6.90	6.90
	5	6.62	6.85	6.82

Overall, aggregations of participants' ratings of the quality, relevance, and usefulness of BEST PD and TA activities showed high levels of participant satisfaction across the five-year cycle.

Impact

For many PD sessions, the evaluators judged impact with event-specific "before" and "after" items to measure participants' self-ratings of growth in knowledge and skills.[1] Respondents estimated their knowledge levels before and after an event using a scale from "1" to "5" (with "1" indicating "nothing" and "5" indicating "a great deal"). The evaluators then calculated effect size (Cohen's *d*) to gauge impact.

Across all five project years, impact was high (Cohen's $d = 1.72$), indicating that participants expressed the view that they had learned a considerable amount from the BEST PD sessions. As the findings presented in Tables 9 and 10 show, effect sizes were high across each project year, as well as for each objective (Cohen's $d > 0.8$).

Table 9 *Overall Impact by Project Year*

Project Year	**Impact (Cohen's *d*)**
PY 1	1.73
PY 2	1.81
PY 3	1.97
PY 4	1.61
PY 5	1.48
Overall	*1.72*

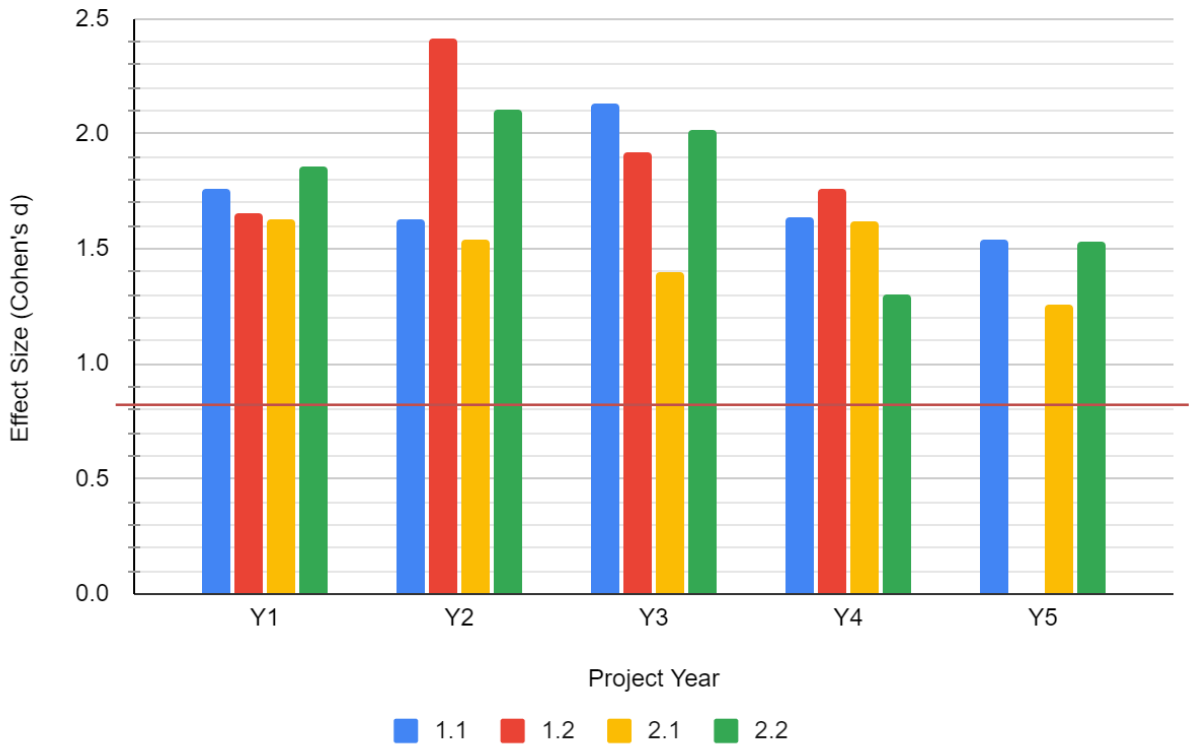
Table 10 *Overall Impact by Objective*

PY1 - PY5 Objectives	**Impact (Cohen's *d*)**
Objective 1.1	1.79
Objective 1.2	1.83
Objective 2.1	1.49
Objective 2.2	1.81

Figure 2 also presents the average impact results for each objective by project year.

Figure 2: Average Effect Size for Each Objective by Project Year. *Notes: the red line indicates Cohen's d = 0.8; mean scores above 0.8 are considered high. No data available for Objective 1.2 in PY5 due to low sample sizes.*

[1] For PY1, and part of PY2 and PY3, effect sizes were calculated for all PD with five or more participants. For the rest of the project, effect sizes were calculated for events with ten or more participants.



Self-ratings are relatively easy to collect but are not the most accurate way to measure knowledge and skill. For a subset of BEST events in project years one, four, and five, participants were asked to complete knowledge tests both before and after the course. These paired (before and after) scores provided a way to measure the extent to which the course contributed to participants' knowledge. For each such course, a statistically significant difference between respondents' pre-test scores and post-test scores suggested that the course increased participants' levels of knowledge. The overall effect size across the trainings in both project years was high (Cohen's *d* = 2.14), with consistently high ratings across objectives (see Table 11)

Table 11 *Aggregated measure of impact of pre-post knowledge tests by objective.*

Objectives	**Impact (Cohen's *d*) ***
Objective 1.1	2.22
Objective 1.2	2.06

**Measures of impact from pre-post knowledge assessments were available for Objective 1.1 in Project Years 1 and 4 and Objective 1.2 in Project Years 1, 4, and 5.*

In sum, participants in BEST PD and TA across the five years of the project learned a great deal—as evidenced by both their self-ratings and by their scores on the pre- and post- knowledge assessments administered by the BEST PD and TA providers.

The impact of BEST offerings was also evident in the provision of technical assistance, resources, and other forms of support (see Tables 1-5, Objectives 2.3, 2.4, and 3.1). Collecting evaluation data was not always possible for these activities, so impact was assessed via project records of the number of sites receiving these services and supports as well as the number of events addressing specific needs. Notably, BEST set up 17 Local Braille Production Centers (in addition to those already in existence) over the five years of the project. Over the five-year cycle, moreover, BEST provided 22 PD events related specifically to providing braille literacy instruction and support in subjects related to STEM (Objective 1.1).

Another way that BEST sought to impact practice involved efforts to recruit individuals who were providing services to children with visual impairments in rural and Appalachian regions (i.e., Ohio regions that had traditionally been underserved). Of the BEST events for which rural/Appalachian participant data was collected, BEST served 82 participants from these regions through PD and TA sessions. This number presented approximately 8.5% of the total number of participants served (see Table 12).

Table 12 *Overall participant count and participants from rural/Appalachian regions for PD/TA events with available data.*

Project Year	Participants	Rural/Appalachian
1	178	14
2	228	28
3	175	4
4	190	22
5	187	14
Overall	*958*	*82*

Qualitative Findings

Feedback provided in response to the two open-ended questions on each feedback survey was examined by program staff, discussed, and, when applicable, used as the basis for modifying the content and/or format of future sessions. A summary of the most frequently requested PD is presented in Table 13.

Table 13 *Summary of most commonly requested PD as shared by respondents across the five-year project timeline.*

PD Requested	Number of Comments
Braille	59
Advanced braille	9
Basic braille	8
Math braille	35
Nemeth	17
Graphics	20
Duxbury	19
JAWS	15
Technology	16
Tactile braille	13
CVI	13
Formatting	12
BrailleNote	9
Google	8
Software	9
Assessments	8
Macros	7
Accessibility	7
MathType	5
BANA	5

Response to COVID-19

In Project Year One, PD and TA sessions that had previously been offered in face-to-face venues were instead offered online due to the COVID-19 pandemic; just over half of the events were moved online (see Table 14). In Project Year Two, all PD and TA sessions were offered online due to COVID-19. In Project Year Three, all PD and TA addressing Objectives 1.1, 1.2, 2.1, and 2.2 were provided online except for the Nemeth Refresher in Spring 2022, which was offered face-to-face. In Project Year Four, four PD events from Objectives 1.1 and 1.2 were offered as hybrid sessions, and the remaining

events (the majority) were provided online. Project Year Five saw a mix of hybrid and online professional trainings.

Table 14 *Count of PD and TA offered by format across project years.*

Project Year	Online	Face-to-Face	Hybrid
PY 1	10	9	1
PY 2	18	-	-
PY 3	19	1	-
PY 4	14	-	4
PY 5	11	-	7
Total	*72*	*10*	*12*

Discussion

Findings from aggregations of data in each project year and across project years demonstrated the effectiveness of the five-year BEST project that ended on September 30, 2024. These finding provided a considerable amount of evidence supporting affirmative responses to each of the evaluation questions posed above:

1. Yes, BEST carried out its plans for providing professional development (PD) and technical assistance (TA).
2. Yes, the PD and TA activities were high in quality.
3. Yes, the PD and TA activities were relevant to the client groups BEST served.
4. Yes, the PD and TA activities were useful to the client groups BEST served.
5. Yes, the BEST PD and TA activities had a considerable impact by substantially increasing the knowledge and skills of participating educators and other professionals.

WordFarmers 2019-2024 BEST Longitudinal Study

This report presents findings from a longitudinal study of BEST participants who agreed to be interviewed annually during the 2019-2024 grant cycle in order to share their perceptions of the BEST project and its impact on their professional lives. The study oriented to two main evaluation aims.

The first was to investigate how BEST project participants make use of courses and technical assistance to obtain the skills and expertise needed to fulfill current job responsibilities and to achieve career objectives. This aim implicates four major concerns:

1. Reasons that new and long-term BEST participants make use of BEST's courses and technical assistance services;
2. Benefits that participants obtain from the BEST courses and technical assistance services with which they engage;
3. Ways in which participants make use of what they've learned through BEST courses and technical assistance; and
4. Ways in which BEST trainings and/or technical assistance contribute to participants' professional advancement, work-related goals, and professional objectives.

The study's second aim was to investigate project participants' perceptions of the impact, quality, relevance, and usefulness of BEST professional development sessions and technical assistance, including the alignment between participants' perceptions and BEST project goals. This line of investigation addresses several distinct issues:

1. Who participates in BEST trainings and technical assistance services;
2. Who, besides participants, benefits from the courses and technical assistance provided through the BEST project;
3. Participants' perceptions of the quality, relevance, and usefulness of BEST courses and technical assistance;
4. Changes to BEST project trainings and services that might enhance participants' ability to fulfill their professional learning needs and career objectives; and
5. How participants' perceptions align with BEST project goals.

Background

BEST is a project funded by the United States Department of Education's Office of Special Education Programs (OSEP) to provide professional development (PD) and technical assistance (TA) to Ohio educators and other professionals who provide (or assist with) braille instruction and braille production. BEST courses, shorter PD sessions, online resources, and TA services are available to in-service and pre-service educators across Ohio. BEST is housed at the Ohio Center for Autism and Low

Incidence (OCALI), within that organization's Assistive Technology and Accessible Educational Materials (AT & AEM) Center.

BEST courses and shorter PD offerings fall into four general categories: (1) training to read and write braille and to teach braille reading and writing; (2) training to read, write, and teach braille math and other STEM subjects; (3) training to create and develop accessible documents and educational materials; and (4) training to support use of, and access to, accessible and assistive technologies. Foundational courses such as A Touch of Braille: An Introduction to Braille Alphabet and Numbers; Basic Nemeth (math); and BrailleNote Touch with Google are available every year. More specialized courses, such as Advanced Braille; Advanced Nemeth; and MathType and Equatio are offered every other year. Some of the trainings for creating accessible documents, such as Scanning for Braille, Large Print, and Audio, and trainings on accessible and assistive technologies (AT)—such as Duxbury Braille Translation Software—are offered yearly; other such trainings are offered in alternate years. Course schedules (subject to change) for the five years of this BEST grant funding cycle can be viewed on the BEST project website. BEST technical assistance is available to program participants and to the Ohio State School for the Blind (OSSB), Assistive Technology & Accessible Educational Materials Center (AT&AEM), Grafton Braille Service Center, and other local braille production centers (LBPCs) upon request.

OSEP's award to the BEST project for work during the 2019-2024 grant cycle was the fourth such award made to Ohio. In previous grant cycles, BEST provided PD and TA services mostly through face-to-face courses, shorter PD sessions, and conferences. Note that, in response to the coronavirus pandemic that began during Year 1 of the 2019-2024 grant cycle (i.e., school year 2019-2020), BEST PD moved from mostly in-person instruction to primarily remote instruction. During Year 2 (i.e., school year 2020-2021) and Year 3 (i.e., school year 2021-2022), BEST courses and shorter PD sessions continued to use remote instruction. During Year 4 (i.e., school year 2022-2023) and Year 5 (i.e., school year 2023-2024), BEST courses and shorter PD sessions used both in-person and remote instruction and—for some PD—a hybrid format that gave participants a choice of preferred format. BEST technical assistance has often been provided both remotely (i.e., by phone, email, and online) and, less frequently, through in-person, on-site visits.

Methods

This section of the report describes the methods used to collect, analyze, and interpret data from the BEST Project Longitudinal Study. The discussion begins with a brief consideration of the study's approach and the theoretical basis for the research design. Next, it describes the instrumentation and recruitment of participants. Finally, this section considers data collection, the types of data collected, and procedures for analyzing the data.

Study Design

For this study, the evaluation team chose a prospective longitudinal approach in which an evaluator conducted repeated interviews with the same study participants over an extended time period. Using this approach, the evaluator sought to learn about the participants' interactions with the BEST project, their perceptions of conditions affecting the project, and their reactions to changes made to the project over time. Of particular interest were participants' judgments about the impact, quality, relevance, and usefulness of BEST PD and TA across the five years of the project. Each year, the evaluation team shared findings from the study with BEST leadership; and BEST leadership used the findings to inform their decisions about changes to project services. The final study report summarizes these findings and uses them to address the overarching evaluation questions listed above.

Instrumentation

Before conducting interviews each year, the evaluation team developed a set of structured, open-ended questions to guide interviews with study participants. Interview questions were similar from year to year, with changes implemented to: (1) increase clarity and focus of participants' responses, (2) account for new participants joining the study in progress, (3) incorporate new lines of inquiry based on patterns evident in the year-by-year data analyses, and (4) elicit perspectives about participants' experiences over course of the grant cycle as well as their anticipated engagement with BEST services during the final months of Year 5.

For the baseline year of the study, the evaluation team developed nine questions to elicit background information about participants as well as their engagement with BEST project services in previous years. The team also developed 17 questions relating to participants' involvement with, and impressions of, the BEST project, from their first engagement with BEST services up through the end of Grant Cycle Year 1 (i.e., the 2019-2020 school year, including the summer following the school year).

For Year 2 of the study (i.e., the 2020-2021 school year and subsequent summer), the evaluation team streamlined the questions to collect updated demographic data and information about returning interviewees' BEST experiences through Grant Cycle Year 2. A new line of questioning was also added to explore a pattern that seemed to be emerging from the Year 1 findings. To enable the evaluation team to develop profiles of new study participants that matched up with the profiles of the original participants, the evaluators created a second set of interview questions for the subset of new interviewees who joined the study in Year 2.

For Year 3, the team used a single streamlined interview protocol to collect updated demographic data from all interviewees and information about their BEST experiences through Grant Cycle Year 3 (i.e., school year and summer 2021-2022). For Year 4, the team again used a single streamlined set of questions to collect updated demographic data from the returning interviewees as well as information about their BEST Project experiences through Grant Cycle Year 4 (i.e., 2022-2023). Both the Year 3 and Year 4 surveys included questions relating to themes that had emerged from prior years' findings.

The Year 5 interviews, which were conducted partway through Study Year 5, used the same interview protocol as for Year 4, with the addition of several questions designed to collect data about interviewees' anticipated future engagement with BEST project services through the end of the grant cycle.[1]

Recruitment of Participants

The evaluation team selected study participants from two primary sources: a spreadsheet of all Project Year 1 (2019-2020) BEST participants and a list of candidates nominated by BEST staff. The initial recruitment effort targeted individuals who were very familiar with BEST professional development activities and technical assistance services. However, due to a low response rate, the recruitment was broadened to include a wider pool of BEST participants. In Year 1, this effort produced a sample of six participants. One member of the evaluation team contacted these six participants to arrange Year 1 interview.

These six participants were contacted again in Fall 2021 to arrange their Year 2 interviews; however, only four of the six responded. Due to this attrition, the evaluation team decided to recruit additional participants to join the study for its remaining years. Recruitment efforts added six new participants to the study, bringing the total of Year 2 sample members to 10.

All 10 of the study sample members participated in Year 2 and Year 3 of the study. In Fall 2023, when participants were contacted to arrange their Year 4 and Year 5 interviews, which were to be conducted consecutively in a single session in Winter 2024, two participants could not be reached. The remaining study sample consisted of four participants from the original group and four of the six participants who had joined the study in Year 2.

Data Collection

One member of the evaluation team conducted all interviews for Years 1 through 5 of the study. Interviews in Years 1-3 were designed to last 30 to 40 minutes, and the combined Year 4-Year 5 interviews were designed to last one hour. All four sets of interviews were conducted via Zoom and recorded digitally. The evaluator took written notes and recorded the interviews. Verbatim transcripts were created for each interview and these transcripts provided the data that were analyzed for each annual study and then reanalyzed for the full five-year study.

Data Analysis

One member of the evaluation team analyzed data separately for each year of the study. For each year's analysis, the evaluator first listened to the recordings of all interviews and then read the interview notes and transcripts. Familiarity with the

[1] Interviewees' projections about their likely participation in BEST activities during the last months of Year 5 were not combined with data obtained from responses relating to participants' actual Year 5 participation (i.e., in the months preceding the interviews).

interviews supported the evaluator's coding of the interview data using predetermined (i.e., deductive) codes. The evaluator also kept a separate document that included background information about participants as well as quantitative data about their engagement with BEST services.

During a second review of the transcript data, the evaluator organized data into separate files based on the initial coding and then added new (i.e., inductive) codes to accommodate responses that did not fit well with any of the deductive codes. After coding the responses, the evaluator grouped codes together based on patterns, or themes, observed in the data. This process helped make sense of participants' responses to each year's set of interview questions.

Analysis of data for all five years involved four steps, supported through the AI-application, Humata. A member of the evaluation team first asked Humata to summarize findings for each project year. Then she asked the program to generate lists of commonalities and differences in the findings across project years. Finally, the evaluator reread all project reports to ensure that the AI representations were accurate and made corrections as needed. To answer the study's evaluation questions, the evaluator reread all reports and AI-generated synopses one final time as the basis for developing summative generalizations keyed to each question.

Findings

This section of the report begins with a brief overview of study participants. Then it looks at themes by project year as well as cross-cutting themes across all five project years. It concludes with a discussion of differences in the salience of the different themes across the five years.

Participants

The final population for the study included 82 individuals, comprising 25 paraprofessionals, 23 Teachers of the Visually Impaired (TVIs), 10 intervention specialists (ISs), six transcribers, four general education teachers, three special education program administrators, three university students, two related service providers, two Assistive Technology (AT) specialists, one TVI/COMS, one itinerant TVI, one Certified Orientation and Mobility Specialist (COMS), and one identified as *other*. From among these invitees, 21 responded, and 12 agreed to join the study. Table 1 shows the numbers of study participants by project year.

Table 1: Participants by Project Year

Project Year	Number of New Participants	Number of Participants Opting Out	Total Number of Participants
One	6	0	6
Two	6	4	10
Three	0	0	10
Four	0	2	8
Five	0	2	8

Summary of Findings by Year

This section presents study findings by project year. As readers will note, several themes appeared as salient across several years. These themes will be presented both in the discussion of year-by-year findings and in the discussion of cross-cutting themes.

Year 1 Findings

Analysis of the data from Year 1 revealed two themes. One related to participants' motivation for engagement with BEST, and the second related to their perceptions about what engagement with BEST provided.

In terms of motivation, participants talked about their desire to obtain skills that would help them perform their work roles more effectively. Some said they valued the opportunity to learn new braille instructional methods or new braille technology in order to meet the needs of their students. Other participants reported that they were motivated by the desire to refresh their braille knowledge or skills, and a few participants mentioned engaging with BEST to fulfill job requirements, such as earning professional development hours or obtaining licensure. Getting access to free courses or software was also cited as a motivator for some participants. Participants turned to BEST to meet these needs because they had heard about the project through "word of mouth" recommendations from respected colleagues, university professors, or other acquaintances.

A second theme in the Year 1 data related to participants' perceptions of the impact, quality, relevance, and usefulness of BEST PD and TA—all of which participants rated as very good, excellent, or outstanding. Participants noted that there were both direct and indirect benefits stemming from their involvement with the project, not only for themselves but also for their students, colleagues, and the broader educational community. Furthermore, many interviewees saw BEST's PD offerings—especially full courses—as so beneficial that they took the same courses multiple times.

Year 2 Findings

Themes from the Year 2 data collection effort were more nuanced, although the positive sentiments revealed in Year 1 were also evident in Year 2. Four themes emerged from the data: (1) perceptions of BEST services, (2) impact of BEST on participants' professional lives, (3) preferences for particular instructional formats, and (4) suggestions for improvement.

Interviewees shared overwhelmingly positive views about the BEST services, praising the high quality, relevance, and usefulness of BEST courses, other PD sessions, and TA. Interviewees highlighted the rigor and quality of the courses and commended instructors for their knowledge and responsiveness. For quite a few interviewees, the strategy of repeating BEST courses persisted into Year 2 and beyond. The interviewees also found technical assistance services to be helpful, particularly in areas such as equipment setup and software support.

Participants noted several work-related benefits resulting from their engagement with BEST services, including increased proficiency in producing accessible materials, improved technology skills, and enhanced ability to provide students with braille materials and assistive technology. For several interviewees, the repetition of courses (i.e., taking the same course more than once) was seen as beneficial for helping them keep their braille skills current as well as for helping them acquire new skills. Moreover, involvement with BEST was credited with contributing to participants' efforts to meet professional goals and achieve professional advancement.

In response to the Covid pandemic, BEST transitioned to on-line PD sessions during Year 1; and by the second project year (2020-21), BEST had discontinued face-to-face meetings. This change affected interviewees in different ways. The Year 2 interviews gave participants the chance to reflect on similarities and differences between face-to-face and virtual PD sessions and to decide on their preferences. Table 2 presents their perceptions of the benefits and challenges associated with each approach.

Table 2: Face-to-Face Versus Virtual PD

Instructional Format	Benefits	Challenges
Face-to-face PD	• Had a faster pace • Involved fewer, more intensive sessions • Provided more opportunities for interaction • Led to the formation of professional learning communities	• Required travel • Required absence from home and from the workplace • Involved instructional sessions that were longer and more rigorous
Virtual PD	• Enabled the recording of sessions	• Produced scheduling conflicts

Instructional Format	Benefits	Challenges
	• Provided interaction in breakout groups • Allowed for asynchronous learning • Provided more time for practicing new skills • Supported thorough and efficient learning through careful structuring and the provision (via ground mail) of instructional equipment and materials	• Interfered with learning when there were technology issues

Comments made by participants in the Year 2 interviews suggested that those who had experienced both formats saw them both as beneficial. They appreciated BEST's efforts during the pandemic to make online courses accessible and productive of meaningful learning. According to interviewees, virtual PD provided a welcomed training option and, from their perspective, might remain as a viable PD alternative after the pandemic.

The final theme derived from the Year 2 data, Suggestions for Improvement, accounted for the few ideas that participants had for improved or expanded services from the BEST project. These ideas focused on ways that BEST might expand courses and curricula to include more diverse and comprehensive training options catering to the evolving needs of professionals who serve students with visual impairments. Expanded PD, according to interviewees, might involve introducing new topics; exploring new technologies; or presenting innovative strategies for enhancing braille literacy instruction, braille materials production, and the use of assistive technology with students with visual impairments.

Year 3 Findings

Thematic analysis of data from Year 3 interviews identified two broad categories. The first focused on interviewees' judgments about the value of BEST PD in terms of its quality, relevance, and usefulness. The second focused on how participants were using what they had learned from their participation in BEST PD.

As also noted in the studies from the previous years, participants in Year 3 interviews had been attending BEST PD sessions in order to acquire new skills, access specific resources such as software and templates, and receive support for their work teaching and/or producing braille in schools or other education settings. In large measure, moreover, Year 3 interviewees reported that BEST was living up to their expectations by meeting their learning needs and contributing to their career advancement. These disclosures indicated that BEST services were relevant to participants and useful in their work with students with blindness and visual impairments. Many interviewees

continued to report the practice of repeating BEST courses in order to keep their skills up-to-date or to have the opportunity to practice more advanced or specialized skills.

Evidence that interviewees also found BEST PD to be of high quality came in statements about the competence and responsiveness of BEST instructors. Some of these statements focused on instructors' breadth of knowledge as well as their ability to communicate and provide feedback. Interviewees also praised BEST instructors for their willingness to answer questions, their flexibility, and their generosity in sharing tips and materials. One quote in particular drew attention to the responsiveness of BEST instructors and staff:

> [What stands out is] how user-friendly everything is. [It's] like customer service... [Everyone] is there to help us, and when we have questions or we have a need, [it's] very easy to get ahold of people, very easy to get answers.

A second Year 3 theme included comments that characterized how interviewees planned to use what they had learned through participation in BEST PD sessions and engagement with BEST resources. Many interviewees described their plans to use what they had learned in their delivery of braille instruction to students, citing their increased capacity to provide students with high-quality braille instruction and/or to produce accurate and accessible braille materials. Some interviewees also mentioned their intention to use what they learned from BEST-project participation to help colleagues (e.g., new teachers) work more effectively with blind and visually impaired students. For one interviewee, the ability to help students make use of assistive technologies was an important application of what they had learned through participation in BEST PD.

For a few interviewees, participation in BEST activities had immediate applicability in relation to their own employment status. Notably, participation in BEST PD helped these interviewees qualify for new jobs or obtain more advanced certifications.

Year 4 Findings

Themes resulting from the analysis of Year 4 data were similar to those reported for earlier years. Four themes were most salient: (1) engagement with BEST services; (2) quality, relevance, and usefulness of the PD; (3) impact on professional practice; and (4) suggestions for improvement.

With respect to their engagement with BEST services, participants in Year 4 interviews reported a high level of involvement with BEST project offerings, including various courses and technical assistance (TA) services. Interviewees also expressed a strong likelihood of continuing their involvement with the project, pointing to their sustained interest in BEST PD and other services and their perception that these trainings and TA services would be of value to them.

Judgments about the quality, relevance, and usefulness of BEST PD and TA clearly contributed to interviewees' deep engagement with BEST activities, their willingness to repeat courses to deepen their understanding and achieve skill mastery, and their intention to remain engaged with BEST activities in future years. Participants credited

BEST activities and services with significantly increasing their ability to teach braille to students with blindness and visual impairments and to produce accessible materials efficiently and effectively.

Not only did interviewees report their deep engagement with BEST and their judgment that BEST services exhibited high levels of quality, relevance, and usefulness, they also detailed how their engagement with the BEST project had led to tangible improvements in their professional practice. Eleven interviewees indicated that BEST had contributed to their increased capacity to provide students with high-quality accessible materials. For instance, they reported increased proficiency in producing materials using braille, large print, and tactile graphics. Four interviewees mentioned increased capacity to teach or assist with teaching students, and six interviewees gave more general responses indicating that BEST experiences had contributed to effective performance in their current jobs.

Despite the overwhelmingly positive sentiments expressed by Year 4 interviewees, they also provided constructive suggestions for further enhancing the BEST project's offerings. These included a greater focus on technology; advanced subjects in STEM (Science, Technology, Engineering, and Mathematics); and adjustments to scheduling to better accommodate participants' learning needs. Constructive feedback of this sort underscored the interviewees' support for BEST and their investment in the continuous improvement of the project.

Year 5 Findings

Findings from the Year 5 study yielded themes that were quite similar to those derived from the Year 4 data. Four themes emerged: (1) engagement with and use of BEST services, (2) quality and relevance of the PD, (3) the impact of PD and TA on professional growth, and (4) suggestions for improvement.

Year 5 data provided a nuanced picture of interviewees' engagement with the services offered by the BEST project. Whereas they reported continuing engagement with the PD and TA, they also expressed a desire to get more out of the online products and services that BEST develops and disseminates. The interviewees in Year 5 were more vocal about these services (notably the website and community of practice) than they had been in previous years. In part, their comments reflected a mild level of frustration caused by the limited visibility and accessibility of these resources coupled with their own lack of time to search for and delve into the resources. For example, none of the interviewees had viewed the videos available on the website and none had participated in community of practice discussions.

Participants in Year 5 consistently rated the BEST project's training and technical assistance services as high quality, relevant, and useful for their professional development. The feedback emphasized the project's significant role in enhancing the skills and expertise of professionals in producing accessible materials, including braille, large print, and tactile graphics. The trainings were particularly lauded for their alignment with the interviewees' professional goals and the practical application of learned skills in their work settings. As was the case in Years One through Four, many

interviewees chose to repeat BEST courses and other PD when they needed to refresh or update their knowledge.

As was the case in previous years, the Year 5 study revealed that the BEST project had a tangible impact on participants' professional growth and their ability to support students with visual impairments. Interviewees reported increased proficiency in creating accessible materials, which not only improved their productivity and accuracy but also had a direct positive effect on the educational experiences of students with visual impairments. Some participants also noted career advancement opportunities as a result of their engagement with the BEST services, highlighting the project's role in facilitating professional development and job progression.

Also paralleling recommendations provided in previous years, Year 5 interviewees identified a few suggestions for improvement. These included (1) a greater focus on technology, (2) more advanced training in STEM subjects, and (3) scheduling adjustments to better accommodate the diverse learning needs of PD participants. These suggestions, offered in the spirit of “critical friend feedback” revealed a strong desire among the interviewees to see the BEST project continue to evolve in ways enabling it to address emerging challenges in the field of education for the blind and visually impaired.

Cross-cutting Themes

Analysis of data across all project years yielded several persistent themes. These included: (1) the contribution of BEST activities and services to interviewees’ professional learning, (2) the consistently high praise that interviewees had for BEST activities and services, (3) the responsiveness of BEST activities and service, and (4) ongoing challenges. These themes directly address the study's two main evaluation aims and highlight the enduring value and effectiveness of the BEST project's services across the study period.

Contribution of BEST Activities and Services to Professional Learning

Across all years, a consistent theme was how interviewees used BEST PD and TA to meet their professional learning needs and achieve career objectives. This use of BEST activities and services showed the alignment between BEST offerings and the professional learning needs of participants.

During the five-year period, as noted previously, the BEST Project served as a specialized provider offering PD and TA that were not commonly found elsewhere. Resources provided included PD courses and shorter PD offerings, online videos, free equipment and materials, support with new and broken equipment, and advice about teaching and producing braille.

Courses were offered on a repeatable basis without any fee, ensuring that individuals would be able to learn at their own pace. Support was reportedly continuous and available for an extended period after course completion. Participants reported that their involvement with BEST has helped them perform better at their jobs, maintain their

employment, and grow their professional confidence. Furthermore, it has aided some in obtaining new jobs or acquiring professional certifications. Participants often reported that they repeated courses, looked to BEST as a major provider of additional courses, sought assistance when necessary, and continued their engagement with BEST over an extended period.

As indicated above, participants frequently repeated courses offered by the BEST Project. Beginning in Year 2 of the study, the evaluator asked questions to learn more about this practice. Responses to these questions indicated that the practice was common among interviewees and actively encouraged by instructors. The lack of a course fee removed financial barriers, while the instructors' readiness to meet diverse learning needs made it personally beneficial. According to interviewees, repetition was often necessary due to the extensive amount of material covered in each course, and because some participants needed more advanced courses that were not always available annually. Additionally, repetition of courses addressed the growing complexity of students' academic needs (e.g., to keep pace with changing technologies) and interviewees' natural tendency to forget material that they did not use on a regular basis.

Consistently High Praise

Across the years, study participants praised BEST for providing activities and services that were of high quality, relevance, and usefulness. They also saw some room for improvement, but typically couched recommendations as "critical friend" feedback, making sure to indicate that they were highly pleased with existing offerings. Even when they expressed the desire to see BEST offer additional courses or to elevate the visibility of their offerings, interviewees coupled their suggestions with strong praise. One interviewee captured the overall sentiment when they said, "As long as they [BEST staff] keep offering stuff that is relevant and keep teaching it in the wonderful way they do, I will keep coming back."

Perceptions of Quality. Interviewees consistently emphasized the high quality of BEST PD and TA. Interviewees described the courses as rigorous and of very high quality, praising the breadth of knowledge, accessibility, responsiveness, ability to communicate, supportiveness, and generosity of the BEST instructors. The courses were noted for being well-organized, fast-paced, filled with information, and individualized to meet participants' needs. High-quality, useful resources were provided to support learning, including software, course videos, braille templates, and instruction manuals. The extensive knowledge, experience, and commitment of instructors were highlighted as factors that made the courses especially beneficial. Additionally, the quality of TA received was considered to be of very high quality, with interviewees mentioning new knowledge acquired through their interactions with TA providers.

Perceptions of Relevance. Interviewees also praised BEST services for their relevance, emphasizing how these services aligned with their professional needs and career aspirations and trajectories. The list below summarizes their perspectives on the relevance of BEST services.

- Professional Relevance: BEST services were described as highly relevant to the professional (or future professional) activities of the interviewees. According to interviewees, the services were tailored to meet their specific needs relating to the production of high-quality braille and other accessible materials.
- Keeping Up with Technological Advancements: The relevance of BEST services was also noted in the context of staying up to date with improvements in braille instructional methods and related technologies.
- Unique and Essential Resources: Interviewees viewed BEST services (e.g., courses and TA assistance) as a unique and essential resource for highly specialized professionals. This perception underscored the relevance of BEST services to comprehensive statewide PD and TA for special educators. Notably, participants saw BEST as filling a critical gap in the opportunities available to professionals working with students with low-incidence sensory disabilities.

Perceptions of Usefulness. Across the five years, interviewees considered BEST PD and TA to be extremely useful for their work. They mentioned acquiring new or improved skills through these services, including skills for using software, templates, and macros; techniques for complex and specialized formatting projects; technical skills for configuring, operating, and troubleshooting equipment; and methods for using and teaching the use of assistive technology (AT) devices.

The usefulness of BEST services was also reflected in interviewees' reports that their engagement with BEST PD and TA was associated with their increased ability to produce high-quality, specialized materials, such as tactile graphics and braille renditions of mathematical formulas. Additionally, BEST's focus on addressing specific needs, such as formatting challenges and hardware issues, further supported interviewees' general statements about the usefulness of BEST services The recurring mention of these services in relation to the production of high-quality work products pointed to the practical value of the project to participants who were seeking to enhance their professional capacity.

The Responsiveness of BEST Activities and Services

According to interviewees, BEST demonstrated responsiveness to participants through a multifaceted approach, adapting to their preferences and professional needs in various ways. Responsiveness was demonstrated through flexible learning formats, tailored services and support, community building, and resource provision.

As interviewees noted in comments about PD offerings in particular, BEST was flexible in providing a variety of learning formats including in-person courses and PD sessions as well as online and hybrid PD offerings. This variety accommodated the range of challenges confronting the interviewees. Despite the logistical issues posed by travel time and costs, interviewees appreciated in-person formats for enabling professional interaction, networking, and one-on-one instruction. Conversely, they appreciated the online format for its convenience and for the high-quality instruction that was made possible by BEST's decision to send computers, software, and other equipment to participants via ground mail in advance of PD sessions. With online services, moreover,

a number of interviewees found that technical issues could be addressed promptly, and some participants found online collaboration easier than face-to-face collaboration.

Interviewees also reported that BEST did a good job tailoring services and support to PD and TA recipients. They noted that project staff were attuned to the unique needs of the field, providing specialized training that was not readily available elsewhere. For those who were new to their roles, BEST provided rapid learning opportunities as well as timely and sometimes intensive support. It also catered to those aspiring to advance their careers, reflecting the project's commitment to participants' professional growth and career advancement.

Evidence of BEST's responsiveness was also seen in its efforts to a build community among educators who work with students with blindness and visual impairments. Acknowledging the isolation often experienced by these educators, BEST acted as a hub for creating a community of practice among geographically dispersed practitioners. While not everyone was aware or took advantage of BEST's efforts to build community, those who participated appreciated the opportunity to interact with colleagues and experts in the field.

According to interviewees, BEST also took a responsive approach to the dissemination of resources such as computer equipment, software, AT devices, and braille and large-print materials. Staff, moreover, were attentive to emerging needs, agreeing to investigate and provide PD to practitioners about new technologies and instructional practices.

On-Going Challenges

Interviewees identified some challenges that may have kept BEST from having as broad an impact as might have been possible. One notable challenge had to do with efforts to advertise BEST activities and services. For instance, interviewees reported that some BEST offerings like the website, online videos, and the Professional Learning Community (PLC) saw limited engagement. In fact, many interviewees reported that they had not been using the website except to register for BEST courses; and while all of them knew about BEST videos, none had viewed them.

Although the interviewees took some responsibility for not exploring BEST's online resources in depth, they also thought that BEST could have advertised their resources more prominently. According to interviewees, extensive advertising might have increased the use of BEST resources especially among practitioners with limited or intermittent access to the internet.

A related issue concerned confusion among interviewees regarding the distinct functions of and relationships among BEST, the AT&AEM Center, OCALI, and other associated entities. According to interviewees, clearer messaging and a more direct path to the BEST website might be sufficient to address this challenge.

Another challenge that interviewees identified involved professionals' increasing need to learn about new technologies. In terms of their own learning, interviewees were interested in finding out about new hardware, software, AT devices and applications,

and the use of artificial intelligence to help students with blindness and visual impairments. New accessibility requirements were also something about which interviewees wanted to learn more. The study participants reported a desire for hands-on, in-person experiences with new products and techniques.

Interviewees also discussed more global challenges that might influence decision making about BEST activities and services. These challenges related to the nature of the field, including shortages of teachers of the visually impaired (TVIs), limited opportunities among TVIs for professional advancement, the employment by some schools and districts of inadequately prepared educators, and job insecurity relating to the low incidence of students with blindness and visual impairment. As some interviewees noted, these challenges might overstretch BEST's capacity to provide effective PD and TA. For others, such as the interviewee quoted here, the challenges provide ongoing opportunities for BEST to support practitioners:

> If there isn't another student in this district that comes along who is blind and will be a braille reader, I'll have to find a job somewhere else. So, without this training, I don't think I would be as marketable. I know I wouldn't be as marketable.

Differences Across the Five Project Years

Across all project years, interviewees had similarly positive reactions to BEST activities and services. They praised BEST PD and TA for its quality, relevance, usefulness, and impact on their professional practice; and they talked about the commitment and effectiveness of BEST instructors and TA providers. Few notable differences were evident across project years, although interviewees' emphases changed somewhat from year to year.

For example, starting in Year 3, interviewees began to talk more about BEST's online services than they had previously. This change most likely reflected the pivot that BEST needed to make in response to the pandemic—away from face-to-face activities and services and toward virtual activities and services. By Year 5 interviewees showed greater awareness of BEST's online services even though they did not make use of the full complement of those services.

Answers to Evaluation Questions

The background section of this report framed evaluation aims characterizing the study's focus. For the purpose of the discussion here, aims statements have been rewritten as questions. Following each question, the discussion answers the evaluation question by offering a brief synthesis of the evidence provided in the interviews with study participants.

Evaluation Question One

Why do new and long-term BEST participants make use of BEST's courses and technical assistance services?

Finding from the study show that new and long-term BEST participants make use of BEST's PD and TA services to obtain the skills and expertise needed to fulfill current job responsibilities, achieve career objectives, and stay up to date with improvements in braille instructional methods and related technology.

Evaluation Question Two

What benefits do participants obtain from the BEST courses and technical assistance services with which they engage?

Participants obtain substantial benefits from BEST PD and TA services, including high-quality professional development, relevant skills and knowledge for their current and future job responsibilities, and enhanced professional competence. These services enable them to perform their jobs more efficiently and effectively. Interviewees found them invaluable to help them accomplish work-related goals and achieve professional advancement.

Evaluation Question Three

How do participants make use of what they've learned through BEST courses and technical assistance?

Participants make use of what they have learned through BEST courses and technical assistance by applying their new skills and knowledge to fulfill current job responsibilities, support braille instruction across all academic areas, manage technology for producing accessible materials, and achieve career objectives, thereby enhancing their capacity to provide high-quality services to teachers, students, and families. In some cases, participants also share what they learn with others in their schools, districts, and/or professional networks.

Evaluation Question Four

How do BEST trainings and/or technical assistance contribute to participants' professional advancement, work-related goals, and professional objectives?

BEST PD and TA contribute to participants' professional advancement, work-related goals, and professional objectives by enabling them to perform their jobs more efficiently and effectively, renew or refresh their skills and knowledge, and stay up to date with improvements in methods and technology. As described above, the responsiveness of BEST activities and services to the needs of the educators they serve contributes to positive outcomes such as participants' improved professional capacity and their readiness for career advancement.

Evaluation Question Five

Who participates in BEST trainings and technical assistance services?

According to interviewees, participants in BEST PD and TA activities include professionals seeking to build capacity for serving braille users, with a focus on those in rural, Appalachian, and resource-poor communities. These professionals include TVIs,

paraeducators, intervention specialists, transcribers, general education teachers, and AT specialists.

Evaluation Question Six

Who, besides participants, benefits from the courses and technical assistance provided through the BEST project?

Students with blindness and visual impairments benefit from the increased skills and knowledge of the educators who participate in BEST activities and services. In addition, local education agencies also benefit when the educators they employ expand their capacities by participating in high-quality professional development. Furthermore, educators who are unable to attend BEST PD but who interact with those who are able to attend may also benefit. In addition, some other Ohio organizations benefit through their partnerships with the BEST project. These organizations include the Ohio State School for the Blind (OSSB), the Grafton Braille Service Center, and other local braille production centers (LBPCs).

Evaluation Question Seven

What are participants' perceptions of the quality, relevance, and usefulness of BEST courses and technical assistance?

As noted throughout this report, participants perceive BEST courses and technical assistance as rigorous, of very high quality, relevant, and highly useful for their professional development. They commend the breadth of knowledge, accessibility, responsiveness, communication skills, supportiveness, and generosity of the BEST instructors. The courses are seen as well-organized, fast-paced, filled with information, and tailored to meet individual needs. The high-quality resources provided, such as software, course videos, templates, and instruction manuals, alongside the extensive knowledge and responsiveness of instructors, are highlighted as factors that make PD offerings especially relevant and useful. Participants regard BEST project services as providing the highest quality—and often the only—locally available instruction and support in their specialized field.

Evaluation Question Eight

What changes to BEST project trainings and services that might enhance participants' ability to fulfill their professional learning needs and career objectives?

The study showed strong interest on the part of interviewees in seeing BEST continue to provide PD and TA services to meet the needs of educators who work with students with blindness and visual impairments. These include the following: to renew or refresh relevant knowledge and skills, to stay up to date with improvements in braille instructional methods and related technologies, and to master new skills that will enhance students' learning of braille and use of braille to augment academic learning. The study also reported interviewees' recommendations for improvement of BEST activities and services. These recommendations included the following:

1. Adding more courses to the curriculum;

2. Expanding access to technology (especially AT);
3. Increasing the availability of certain courses;
4. Providing more hands-on experiences with various types of AT, especially new technology, to develop participants' abilities to make recommendations to students and teachers about tools and technologies that will best meet their needs;
5. Advertising BEST's online resources more prominently; and
6. Providing clearer branding that distinguishes BEST (e.g., the BEST website) from the AT & AEM Center, OCALI, and other related organizations and projects.

Evaluation Question Nine

How well do participants' perceptions align with BEST project goals?

Participants' perceptions align well with the BEST project goals, as evidenced by their positive feedback on the impact, quality, relevance, and usefulness of the BEST PD and TA services. This alignment is supported by their appreciation for the rigorous, high-quality, and relevant professional development opportunities provided by BEST, which are tailored to meet their evolving professional need and to integrate the latest practices and technologies. The participants' feedback suggests that the BEST project successfully meets its objectives by enhancing participants' abilities to serve their students and communities effectively, thereby fulfilling their professional learning needs and career objectives.

Discussion

This section of the report begins with a high-level summary of the findings of the longitudinal study of the BEST project. Then it considers possible changes to that project that are supported by study participants' experiences, perceptions, and suggestions.

Summary of Findings

The longitudinal study revealed a consistent appreciation among interviewees for BEST's PD and TA services, which are aimed at enhancing braille literacy and access to instruction for students with blindness and visual impairments. The interviewees, including professionals working in various instructional and support roles, engaged with BEST services to meet their professional learning needs, career objectives, and to better serve their students. They reported significant benefits from participating in BEST activities and services, such as increased proficiency in producing accessible materials, improved job performance, and in some cases, career advancement. The quality, relevance, and usefulness of the BEST courses and technical assistance were highly regarded, with suggestions for improvements including more hands-on technology training, expanded course offerings, and adjustments to scheduling. Overall, the study highlighted the alignment of participants' experiences with BEST with the project's goals, emphasizing BEST's role in supporting professional development and enhancing educational outcomes for students with blindness and visual impairments.

Recommendations

Findings from this study supported a number of possible improvements that BEST project leaders might consider as they begin preparations for the next grant cycle. These relate to (1) additions and/or changes to courses and other PD offerings, (2) a stronger online presence, and (3) engagement with newer technologies including artificial intelligence (AI).

With respect to courses and other PD offerings, the study supported the following changes:

- The addition of courses and PD sessions focusing on higher-level skills (e.g., advanced Nemeth, new AT and other technologies, AI applications specific to braille instruction and production).
- The addition of courses and PD sessions focusing on the needs of specific groups of educators (e.g., paraeducators who work with students with blindness and visual impairments).
- Minor revision of the PD curriculum to ensure that there are options for PD participants who are beginners, intermediate learners, and advanced learners.
- The continuation (or even expansion of) efforts to accommodate PD participants' schedules and the demands on their time.

The study also supported changes to how the BEST project presents itself online. Notably, the study pointed to the need for BEST to advertise its online services as well as to create a distinct approach to branding. Providing educators with a direct internet route to the BEST website without having to navigate the OCALI menu or search engine might be one way to accomplish this change.

Finally, the study pointed to the need for BEST leaders to explore the implications of emerging technologies (AI, in particular) for braille instruction and production. According to a brief review of relevant literature, various AI innovations (e.g., a ring that simulates braille reading to promote rapid learning of braille, AI- and braille-supported products for helping children with blindness and visual impairments engage with LEGO toys) are already available (e.g., Ghazanfar et al., 2023); and new AI applications for braille instruction and production are poised to appear within the next several years.

References

Ghazanfar, L., Brahim, G., Abdelhamid, S. E., Alghazo, R., Alhabib, G., & Alnujaidi, K. (2023). Learning at your fingertips: An innovative IoT-based AI-powered braille learning system. *Applied System Innovation, 6*(5). https://doi.org/10.3390/asi6050091

Appendix

Interview Questions for BEST Longitudinal Study Years 1-5

Questions	Study Year				
	1	2	3	4	5
Where did you work during (Study Year), what were your job title, your certifications, and your professional responsibilities? Is this different from last year?	X	X	X	X	X
New participants only: Where have you worked prior to (Study Year), what were your job title, certifications, and professional responsibilities?	X	X			
Would you characterize your (Study Year) work location as urban, suburban, or rural?	X	X	X	X	X
With whom did you work directly during (Study Year): teachers, students, others?		X	X	X	X
Year 1 participants and new participants in Year 2: When did you first become involved with the BEST project and what inspired you to undertake your first BEST course or training?	X	X			
Year 1 participants and new participants in Year 2: What stood out for you about your first BEST training?	X	X			
Year 1 participants and new participants in Year 2: When did you first, if ever make use of BEST technical assistance, and why?	X	X			

Questions	Study Year				
	1	2	3	4	5
Year 1 participants: What stood out for you about your first technical assistance interaction?	X				
Year 1 participants and new participants in Year 2: List, to the best of your recollection, the BEST events and trainings you have participated in (through current Study Year)?	X	X			
Year 1 participants and new participants in Year 2: Can you summarize your involvement with BEST technical assistance [through current Study Year]?	X	X			
What were your (Study Year) trainings and technical assistance services?			X	X	X
Why did you undertake your (Study Year) BEST courses and/or technical assistance?			X	X	X
For participants who have not engaged with any BEST trainings for more than two years: Are you comfortable sharing the reason(s) why you haven't enrolled in additional courses?				X	X
Year 1 participants and new participants in Year 2: Of all the BEST trainings and technical assistance interactions you've experienced so far [prior to current Study Year], what stood out for you?	X	X			
What caused you to undertake your (Study Year and previous) BEST trainings or to seek technical assistance?	X	X			

Questions	Study Year				
	1	2	3	4	5
What stood out for you in your recent BEST training or technical assistance experiences?	X	X	X	X	X
What new knowledge and/or skills did you develop as a result of your (insert Study Year) BEST trainings or technical assistance?	X	X	X	X	X
What knowledge, skills or other takeaways did you get from your (Study Year) BEST experiences relevant to producing braille materials and other accessible materials?	X	X	X	X	X
Year 1 participants and new participants in Year 2: How have you used what you learned through your BEST trainings and/or technical assistance services up through (Study Year)? For returning participants: Does this represent a change from (previous Study Year)?	X	X			
Were there things you have learned through your BEST trainings and technical assistance services over the years that you used in your work in (Study Year) that you hadn't used in previous years?		X	X	X	X
Are there ways you envision using in your future work what you learned through your BEST courses and/or technical assistance services?		X	X	X	X
How does the training or the technical assistance you received contribute to your professional advancement and/or work-related goals? Is this a change since (prior Study Year)?	X	X	X	X	X

Questions	Study Year				
	1	2	3	4	5
Of the things you've learned throughout your BEST trainings and/or technical assistance, what did you use in your (insert Study Year) professional duties/work life and what have you used in the past?	X				
In what ways, if any, have BEST trainings and/or technical assistance impacted your professional life and how might the trainings and technical assistance you've received affect your professional objectives in the future? Is this a change since (prior Study Year)?	X	X	X	X	X
How do your BEST learnings and experiences through (Study Year) affect your plans for professional growth? Is this a change since (prior Study Year)?		X	X	X	X
In addition the students and/or teachers you directly support as part of your job responsibilities, how have you used what you have learned through BEST trainings and/or technical assistance services to help others, such as other students, colleagues, friends, family, schools, organizations, etc.?	X	X	X	X	X
Of all that you've gotten from your BEST experiences through (Study Year), what is the most useful to the work you do or anticipate doing in the future?		X	X	X	X
Have you done both in-person and online BEST trainings, and how do you feel about the two formats? Which do you prefer?	X	X	X	X	X
Have you used both BEST remote technical assistance and in-person technical assistance and how do you feel about the two formats?[a]	X				

Questions	Study Year				
	1	2	3	4	5
What has BEST training or technical assistance enabled you to do now that you couldn't do before?	X				
How likely are you to participate in BEST trainings or BEST technical assistance in the future?	X	X	X	X	X
What would inspire you to undertake future BEST trainings and/or BEST technical assistance?	X	X	X	X	X
What trainings or services do you wish BEST would offer, and how would these help you?	X	X	X	X	X
Is there anything about BEST trainings and/or technical assistance that has not worked for you, and why?	X	X	X	X	X
Have you taken any BEST course or training more than one time? Why? Were any of your (Study Year) courses repeats? [b]		X	X	X	X
Have you experienced any changes in the BEST program? If so, how did you find out about them and have they impacted you? [c]			X	X	X
Have you engaged with any other BEST services or resources? Website? Video library? Professional Learning Community? [c]			X	X	X

Questions	Study Year				
	1	2	3	4	5
Summative question: Thinking about your total history of engagement with the BEST Project and the services it has offered, what would you say is the most significant thing that you have gotten from your engagement with the BEST project over these years?					X
Summative question: Thinking about your total history of engagement with the BEST Project and the services it has offered, in what specific ways has your engagement with BEST trainings and services shaped your career path and goals for the future?					X

Note: When questions are essentially similar, only one version of the text is presented.
[a] Year 1 findings indicated that the distinction between in-person and remote technical assistance was immaterial to the study; this line of inquiry was discontinued in Year 2.
[b] Year 1 findings surfaced a theme in which participants frequently repeated courses and trainings they had already completed. This line of inquiry was added in Year 3.
[c] In Year 3, the BEST project appeared to make available additional online services and resources (e.g., enhanced website, video library, professional learning community). This line of inquiry was added in Year 3.

Additional Information: NCRTM

Resources about Braille Training for Educators

Websites

- The BEST Grant 2019-2024 webpage houses braille resources, supports, and professional development activities. The Braille Excellence for Students and Teachers (BEST) Grant concluded as of September 30, 2024, however, many resources and materials are still available. BEST was a statewide project of professional development and technical assistance dedicated to braille literacy, braille instruction, braille materials and braille technology in Ohio schools.

Toolkits, Guides, and Factsheets

- The BEST Grant On-Demand Tips and Tricks Video Series are on-demand sessions that are designed to support educators who need immediate assistance related to braille technologies or creating and obtaining accessible educational materials. The on-demand videos are typically short (5-15 minutes each) and provide quick and immediate answers to help educators effectively use the tools and/or quickly create or obtain accessible materials their students need so they can focus on doing what they do best, teaching students.

3 – BEST 2019-2024 Final Narrative

Section A. Substantial progress towards completion of goals, objectives, and outputs with funds awarded, broken down by each of the five performance/budget years.

1. Describe program activities, outputs, and products (toolkits, curricula, conferences, etc.) and products completed from October 1, 2019, to September 30, 2024, broken down by each of the five performance/budget years.

The five tables below provide a detailed outline of the program activities, outputs, and products completed from October 1, 2019, to September 30, 2024 broken down by each budget year, commonly referred to in the narrative as Project Year. The tables were prepared by our external evaluator, WordFarmers. Training activities that covered multiple days or weeks have a notation to indicate the length of the training. Any products or technical assistance also have either the total number created, total participants or the total number of hours provided. Additionally, the BEST Grant awarded Local Braille Production Centers (LBPCs) each year. The specific educational agencies or districts who received an LBPC are listed for each year.

Table 1: BEST Accomplishments in Project Year One (2019-2020)

Goal One
● Objective 1.1
○ BrailleNote Touch Plus with KeyMath (2/21/20)
○ MathType and Equatio Software Training (3/6/20)
○ Four-Day Basic Nemeth (6/15/2020 to 6/18/2020)
● Objective 1.2
○ BrailleNote with Google (10/24/2019)
○ Twelve-Week Blended Basic Braille (2/26/2020 to 5/13/2020)
○ Braille Reading and Writing Smackdown (2/28/2020)
○ Three-Day Basic Braille (6/8/2020 to 6/10/2020)
○ Four-Week Advanced Braille (6/11/2020 to 7/13/2020)
○ A Touch of Braille - Introduction to Alphabet and Numbers (9/18/2020)

○ Paraprofessional Instructional Support Techniques: Supporting Students Who Are Braille Users (9/25/2020)
Goal Two
● Objective 2.1
○ Creating Accessible Microsoft Word Documents (9/3/2020)
○ Scanning for Braille, Large Print, and Audio (9/15/2020 to 9/24/2020)
● Objective 2.2
○ Two-Day Duxbury Braille Translation (DBT) Software Training (10/29/2019 to 10/30/2019)
○ Braille AT Forum at OCALION (11/19/2019 to 11/22/2019)
○ VI/Braille AT for University Students at Shawnee State (6/22/2020)
○ VI/Braille AT for University Students at OSU (9/28/2020)
○ Virtual AT Conference and Vendor Fair (9/29/2020)
● Objective 2.3
○ Technical Assistance to Grafton Braille Service Center 3 participants/33 hours
○ Technical Assistance to support learning and producing braille (74 participants/7 from App/rural areas/100.03 hours)
○ Technical Assistance to braille transcriber candidates (7 participants/1 completed NLS course/1 from App/rural areas/38.25 hours)
● Objective 2.4
○ Local Braille Production Centers ■ South Central ESC (12/11/2019) ■ Logan Elm Schools (1/9/2020) ■ Findlay City Schools (2/14/2020)
Goal Three
● Objective 3.1
○ Peer-to-peer support network (multi-year scope of work) - 69 participants
○ Online TA portal (multi-year scope of work) - Went live March 2020

○ Online repository of BEST PD resources (multi-year scope of work) 1 session offered
○ Webinars (3) on Streamlining Braille Production (Posted on website)
○ Tips and Tricks Braille Technology (6) online resources - Braille Math Conversion (Posted on website)

Table 2: BEST Accomplishments in Project Year Two

Goal One
● Objective 1.1
○ Four-Day Basic Nemeth (6/8/2021 to 6/29/2021)
○ Four-Day Advanced Nemeth (6/16/2021 to 6/30/2021)
○ BrailleNote Touch with KeyMath (2/26/2021)
○ Producing Tactile Graphics on the Juliet 120 (8/31/2021)
○ STEM Tactile Graphics: Using the Tactipad (9/7/2021)
○ Explore the T3 Tablet and TG Features (9/20/2021)
● Objective 1.2
○ Three-Day Basic Braille (6/14/2021 to 6/28/2021)
○ BrailleNote with Google (1/29/2021)
○ Braille Formatting (10/2/2020)
Goal Two
● Objective 2.1
○ Two-Day Creating Accessible PDFs (2/9/2021 to 2/10/2021)
○ Scanning for Braille, LP, Audio (9/14/2021 to 9/23/2021)
○ Using Macros and Templates to Produce LP, Braille and Electronic Text (3/16/2021 to 3/25/2021)
● Objective 2.2
○ Two-Day Duxbury Braille Translation Software (10/20/2020 to 10/29/2020)

○ VI/Braille AT for Shawnee University Students (6/24/2021)
○ Lunch and Learn Duxbury Sessions: TN (12/15/2020)
○ Lunch and Learn Duxbury Sessions: Tables (1/19/2021)
○ Lunch and Learn Duxbury Sessions: Line Numbered Text (2/16/2021)
○ Virtual AT Conference and Vendor Fair (9/29/2021)
● Objective 2.3
○ Technical Assistance to braille transcriber candidates (5 participants/2 completed NLS course/1 from App/rural areas/12.5 hours
○ Technical Assistance to support learning and producing braille 77 participants/5 from App/rural areas/187.5 hours
○ Technical Assistance to Grafton Braille Service Center (1 participant/1 completed NLS course/16.33 hours)
● Objective 2.4
○ Local Braille Production Centers ■ Ashtabula ESC (01/20/2021) ■ Midview ESC (01/27/2021) ■ Ohio Valley ESC (03/26/2021) ■ Orrville (04/22/2021)
Goal Three
● Objective 3.1
○ Peer-to-peer support network (multi-year scope of work) PLC Launched Feb, 2022, 17 participants
○ Online TA portal (multi-year scope of work) 1 participant
○ Online repository of BEST PD resources (multi-year scope of work) 1 session offered
○ Webinar Series on Creating AEM to Streamline Braille Production (October 2020)

Table 3: BEST Accomplishments in Project Year Three

Goal One

- Objective 1.1
    - Basic Nemeth (6/7/2022 to 6/28/2022)
    - MathType and Equatio Software Training (2/8/2022 to 2/10/2022)
    - BrailleNote Touch Plus with KeyMath (1/19/2022)
    - Nemeth Refresher (5/13/2022)
- Objective 1.2
    - 12-Week Basic Braille (2/23/2022 to 5/11/2022)
    - Basic Braille (June 13-20-27, 2022)
    - Advanced Braille (6/15/2022 to 6/29/2022)
    - BrailleNote with Google (2/2/2022)
    - A Touch of Braille (10/4/21)
    - Paraprofessional Instructional Support Techniques (3/7/2022)

Goal Two

- Objective 2.1
    - Creating Accessible Microsoft Word Documents (2/28/2022)
    - Four-Day Scanning for Braille, Large Print, and Audio (09/14/2022 to 09/23/2022)
    - Two-Day Using Microsoft Word Templates and Macros to Produce Large Print, Braille and Electronic Text (3/15/2022 to 3/24/2022)
- Objective 2.2
    - Braille AT Forum at OCALICON 2021 (11/16/21)
    - Duxbury Braille Translation Software (10/12/2021 to 10/28/2021)
    - VI/Braille AT for Shawnee State University Students (6/23/2022)
    - VI/Braille AT for OSU TVI Students (10/26/2021) and (2/28/2022)
    - Transcribers Notes - Lunch & Learn Duxbury (12/7/2021)
    - Tables - Lunch & Learn Duxbury (1/11/2022)
    - Line Numbered Text - Lunch & Learn Duxbury (1/25/2022)

● Objective 2.3
○ Technical Assistance to braille transcriber candidates testing for braille certification (as requested) 2 participants/8.5 hours
○ Technical Assistance to support learning and producing braille 56 participants/15 from App/rural areas/163.32 hours
○ Technical Assistance to Grafton Braille Service Center (as requested) (3 participants) 15.5 hours
● Objective 2.4
○ Local Braille Production Centers – LBPCs ■ Troy SD ■ Canton SD ■ Lima CS ■ Kettering SD
Goal Three
● Objective 3.1
○ Video Resource: Sourcing Ready-made Braille Materials (October 2021)

Table 4: BEST Accomplishments in Project Year Four

Goal One
● Objective 1.1
○ Exploring the T3 Tablet (11/8/2022)
○ Basic Nemeth (6/7/2023 to 6/28/2023)
○ Advanced Nemeth (6/15/2023 to 6/29/2023)
○ BrailleNote with KeyMath (1/18/2023)
○ Producing Tactile Graphics on the Juliet 120 (3/13/2023)
○ Using the TactiPad (12/6/2022)
● Objective 1.2
○ Basic Braille (6/13/2023 to 6/27/2023)
○ BrailleNote with Google (1/18/2023)

- Braille Formatting: Best Practices for Braille Materials (10/5/2022)
- Introduction to Braille Music (6/16/2023)
- A Touch of Braille (9/6/2023)
- Paraprofessional Instructional Support Techniques (9/13/2023)

Goal Two

- Objective 2.1
  - Creating Accessible PDFs (10/17/2022 to 10/18/2022)
  - Scanning for Braille, Large Print, and Electronic Text (1/10/2023 to 1/19/2023)
  - Using Microsoft Word Templates and Macros to Produce Braille and Large Print (3/21/2023 to 3/30/2023)
- Objective 2.2
  - Braille AT Forum at OCALICON 2022
  - Duxbury Braille Translation Software (2/14/2023 to 3/2/2023)
  - AT Exploration Day for Shawnee State University TVI Students (6/23/2023)
  - AT Exploration Day for OSU TVI Students (2/13/2023)
  - AT Exploration Day for OSU TVI Students (9/26/2023)
- Objective 2.3
  - Technical Assistance to braille transcriber candidates testing for braille certification (as requested) 3 participants/23.35 hours
  - Technical Assistance to support learning and producing braille 79 participants/90.27 hours
  - Technical Assistance to Grafton Braille Service Center (as requested) 1 participant/18.75 hours
- Objective 2.4
  - Local Braille Production Centers – LBPCs
    - Jackson Milton Local SD
    - South Point Local SD
    - Clark Shawnee SD

Goal Three
● Objective 3.1
○ 26 “Tips and Tricks” Videos

Table 5: BEST Accomplishments in Project Year Five

Goal One
● Objective 1.1
○ Four-Day Basic Nemeth (06/05/2024 - 06/26/2024)
○ BrailleNote Touch with KeyMath (1/31/2024)
○ MathType and Mathpix for Braille Production (3/4/2024)
● Objective 1.2
○ Braille Instructional Support Techniques for Language Arts (11/29/2023)
○ 12-Week Braille (2/21/2024 to 5/8/2024)
○ BrailleNote with Google (1/31/2024)
○ Basic Braille (06/11/2024 - 06/25/2024)
○ Advanced Braille (06/13/2024 - 06/27/2024)
○ A Touch of Braille (09/10/2024)
○ Paraprofessional Instructional Support Techniques (09/17/2024)
Goal Two
● Objective 2.1
○ Creating Accessible Word Documents (10/10/2023)
○ Scanning for Braille, Large Print, and Electronic Text (1/9/2024 to 1/18/2024)
○ Using Microsoft Word Templates and Macros to Produce Braille, Large Print, and Electronic Text (3/19/2024 to 3/28/2024)
● Objective 2.2

○ AT Exploration Day (2/20/2024)
○ Using Word and Duxbury Braille Translation (DBT) Software (2/6/2024 to 2/22/2024)
○ AT Exploration Day (06/24/2024)
○ AT Exploration Day OSU (09/17/2024)
○ Screen Reader Training (09/23/2024)
● Objective 2.3
○ Technical Assistance to braille transcriber candidates testing for braille certification (as requested) 2 participants/7 hours
○ Technical Assistance to support learning and producing braille (28 participants) 58.82 hours
● Objective 2.4
○ Local Braille Production Centers - LBPCs (October 2023) ■ Ironton Local SD ■ Three Rivers Local SD ■ EJ Therapy Services
● Objective 3.1
○ Webinar on Duxbury (October 2023)

2. Describe the most significant program outcomes from October 1, 2019 to September 30, 2024.

As illustrated in Section A(1) of this report, the BEST grant team within the AT&AEM Center at OCALI were very productive with grant activities and product development over the course of the grant cycle. The following list includes highlights of the most significant accomplishments or outcomes from October 1, 2019, through September 30, 2024:

A. 144 training sessions were planned, and 138 training sessions were completed in addition to the BEST AT Forum held project years 2-5 during the annual OCALICON conference. These activities targeted the two main goals: (1) Enhance the competency of preservice and in-service educators, paraprofessionals, and others to provide braille literacy instruction and support across all academic areas including Science, Technology, Engineering, and Math (STEM), and (2) Enhance the competency of

preservice and in-service educators, paraprofessionals, and others to efficiently and effectively acquire and create braille materials.
Each PD training was evaluated by external evaluators, WordFarmers, based on observations and attendee feedback, specifically in the areas of quality, relevance, and usefulness. Of the sessions completed over the BEST grant 2019-2024 cycle, 100% of the trainings equaled or exceeded a 6 with a range from 2(low) to 8(high) on each of the three measures: quality, relevance, and usefulness. The average score for quality overall was 7.21, relevance 7.36, and usefulness 7.39. Averaged across the five project years, ratings for all three indicators were very high (ratings above 7.0 out of a possible 8.0), indicating that participants found BEST PD and TA to be of high quality, relevance, and usefulness. Because all scores were within our project target of 6, this totals 100% of grant activities within the project year as meeting the performance measure.

The above information is a brief summary from WordFarmers Final 5-year report. The full report is included in "Section C: Additional Information"

B. 17 LBPCs were set up in high-need school districts/agencies for the purpose of increasing the ability and capacity to produce incidental braille for students. Staff for all local braille production centers were trained on the operation of equipment and software.
C. A total of 760.79 hours of TA was provided by highly qualified consultants through direct contact and through the TA portal when developed (year 2). The total TA was broken down as follows: a) 89.5 hours of TA to transcriber candidates. Three transcribers completed the braille transcription certification, b) 600.04 TA hours for educators who are producing braille for students and staff in districts and agencies as well as the districts who were selected to receive the LBPCs previously mentioned, and c) 71.25 TA hours to support the Grafton program while they were still operating. Additionally, participants of BEST activities had access to the BEST TA Portal (https://ataem.org/best-2019-2024/technical-assistance-requests) where requests for technical assistance can be made to the AT&AEM Center's braille consultants. Between October 1, 2020 and September 30, 2024, the webpage to access the TA Portal was visited 313 times. The number of page visits increased significantly from years 3-5. The increase in visits from year 3 (34 visits) to year 4 (58 visits) is over 70% increase and year 4 (58 visits) to year 5 (160 visits) demonstrates an increase of over 175%.
D. The BEST PLC, launched in February of 2022 on Microsoft Teams, was developed to encourage ongoing engagement and follow-up for grant event participants. Attendees continue to have ongoing access to training materials

and recordings as an option to review content and continue professional growth. Recordings are available only to participants of the respective trainings. A total of 80 recorded training sessions have been made available and will continue to be available upon request. Sessions were recorded and posted from each day of a training. As a result of offering multi-day trainings, the number of videos exceeds the number of completed activities. By keeping the videos separated by each training day, attendees can return to specific recordings to continue or refresh their learning. Editable transcripts for recordings can also be used to search for training keywords, that are tied to specific timestamps, within the recordings are also available to support participant learning. In addition to providing continued access to resources and training recordings, participants can engage in conversations with other participants within the Teams channel or ask follow-up questions to the trainer.

E. BEST continued the partnership with Shawnee State University, Kutztown University, and The Ohio State University to provide yearly professional development presentations to their cohorts to help increase the students' knowledge around assistive technologies.
F. The BEST longitudinal study by WordFarmers, the external evaluator for BEST, continued with two major aims: (1) to investigate how the BEST project participants make use of BEST courses and technical assistance to obtain the skills and expertise needed to fulfill current job responsibilities and to achieve career objectives and (2) to investigate participants' perceptions of the impact, quality, relevance, and usefulness of their BEST experiences and the alignment between their perceptions and BEST project goals. The information below includes a summary from the study while the full report is included in "Section C: Additional Information".

Summary of BEST Longitudinal Study

Cross-cutting Themes

Analysis of data across all project years yielded several persistent themes. These included: (1) the contribution of BEST activities and services to interviewees' professional learning, (2) the consistently high praise that interviewees had for BEST activities and services, (3) the responsiveness of BEST activities and service, and (4) ongoing challenges. These themes directly address the study's two main evaluation aims and highlight the enduring value and effectiveness of the BEST project's services across the study period.

Contribution of BEST Activities and Services to Professional Learning

Across all years, a consistent theme was how interviewees used BEST PD and TA to meet their professional learning needs and achieve career objectives. This use of BEST activities and services showed the alignment between BEST offerings and the professional learning needs of participants.

During the five-year period, as noted previously, the BEST Project served as a specialized provider offering PD and TA that were not commonly found elsewhere. Resources provided included PD courses and shorter PD offerings, online videos, free equipment and materials, support with new and broken equipment, and advice about teaching and producing braille.

Courses were offered on a repeatable basis without any fee, ensuring that individuals would be able to learn at their own pace. Support was reportedly continuous and available for an extended period after course completion. Participants reported that their involvement with BEST has helped them perform better at their jobs, maintain their employment, and grow their professional confidence. Furthermore, it has aided some in obtaining new jobs or acquiring professional certifications. Participants often reported that they repeated courses, looked to BEST as a major provider of additional courses, sought assistance when necessary, and continued their engagement with BEST over an extended period.

As indicated above, participants frequently repeated courses offered by the BEST Project. Beginning in Year 2 of the study, the evaluator asked questions to learn more about this practice. Responses to these questions indicated that the practice was common among interviewees and actively encouraged by instructors. The lack of a course fee removed financial barriers, while the instructors' readiness to meet diverse learning needs made it personally beneficial. According to interviewees, repetition was often necessary due to the extensive amount of material covered in each course, and because some participants needed more advanced courses that were not always available annually. Additionally, repetition of courses addressed the growing complexity of students' academic needs (e.g., to keep pace with changing technologies) and interviewees’ natural tendency to forget material that they did not use on a regular basis.

Consistently High Praise

Across the years, study participants praised BEST for providing activities and services that were of high quality, relevance, and usefulness. They also saw some room for improvement, but typically couched recommendations as “critical friend” feedback, making sure to indicate that they were highly pleased with existing offerings. Even when they expressed the desire to see BEST offer additional courses or to elevate the visibility of their offerings, interviewees coupled their suggestions with strong praise. One interviewee captured the overall sentiment when they said, “As long as they [BEST

staff] keep offering stuff that is relevant and keep teaching it in the wonderful way they do, I will keep coming back."

Perceptions of Quality

Interviewees consistently emphasized the high quality of BEST PD and TA. Interviewees described the courses as rigorous and of very high quality, praising the breadth of knowledge, accessibility, responsiveness, ability to communicate, supportiveness, and generosity of the BEST instructors. The courses were noted for being well-organized, fast-paced, filled with information, and individualized to meet participants' needs. High-quality, useful resources were provided to support learning, including software, course videos, braille templates, and instruction manuals. The extensive knowledge, experience, and commitment of instructors were highlighted as factors that made the courses especially beneficial. Additionally, the quality of TA received was considered to be of very high quality, with interviewees mentioning new knowledge acquired through their interactions with TA providers.

Perceptions of Relevance

Interviewees also praised BEST services for their relevance, emphasizing how these services aligned with their professional needs and career aspirations and trajectories. The list below summarizes their perspectives on the relevance of BEST services.

- Professional Relevance: BEST services were described as highly relevant to the professional (or future professional) activities of the interviewees. According to interviewees, the services were tailored to meet their specific needs relating to the production of high-quality braille and other accessible materials.
- Keeping Up with Technological Advancements: The relevance of BEST services was also noted in the context of staying up to date with improvements in braille instructional methods and related technologies.
- Unique and Essential Resources: Interviewees viewed BEST services (e.g., courses and TA assistance) as a unique and essential resource for highly specialized professionals. This perception underscored the relevance of BEST services to comprehensive statewide PD and TA for special educators. Notably, participants saw BEST as filling a critical gap in the opportunities available to professionals working with students with low-incidence sensory disabilities.

Perceptions of Usefulness

Across the five years, interviewees considered BEST PD and TA to be extremely useful for their work. They mentioned acquiring new or improved skills through these services, including skills for using software, templates, and macros; techniques for complex and specialized formatting projects; technical skills for configuring, operating, and troubleshooting equipment; and methods for using and teaching the use of assistive technology (AT) devices.

The usefulness of BEST services was also reflected in interviewees' reports that their engagement with BEST PD and TA was associated with their increased ability to produce high-quality, specialized materials, such as tactile graphics and braille renditions of mathematical formulas. Additionally, BEST's focus on addressing specific needs, such as formatting challenges and hardware issues, further supported interviewees' general statements about the usefulness of BEST services The recurring mention of these services in relation to the production of high-quality work products pointed to the practical value of the project to participants who were seeking to enhance their professional capacity.

The Responsiveness of BEST Activities and Services

According to interviewees, BEST demonstrated responsiveness to participants through a multifaceted approach, adapting to their preferences and professional needs in various ways. Responsiveness was demonstrated through flexible learning formats, tailored services and support, community building, and resource provision.

As interviewees noted in comments about PD offerings in particular, BEST was flexible in providing a variety of learning formats including in-person courses and PD sessions as well as online and hybrid PD offerings. This variety accommodated the range of challenges confronting the interviewees. Despite the logistical issues posed by travel time and costs, interviewees appreciated in-person formats for enabling professional interaction, networking, and one-on-one instruction. Conversely, they appreciated the online format for its convenience and for the high-quality instruction that was made possible by BEST's decision to send computers, software, and other equipment to participants via ground mail in advance of PD sessions. With online services, moreover, a number of interviewees found that technical issues could be addressed promptly, and some participants found online collaboration easier than face-to-face collaboration.

Interviewees also reported that BEST did a good job tailoring services and support to PD and TA recipients. They noted that project staff were attuned to the unique needs of the field, providing specialized training that was not readily available elsewhere. For those who were new to their roles, BEST provided rapid learning opportunities as well as timely and sometimes intensive support. It also catered to those aspiring to advance their careers, reflecting the project's commitment to participants' professional growth and career advancement.

Evidence of BEST's responsiveness was also seen in its efforts to build a community among educators who work with students with blindness and visual impairments. Acknowledging the isolation often experienced by these educators, BEST acted as a hub for creating a community of practice among geographically dispersed practitioners. While not everyone was aware or took advantage of BEST's efforts to build community,

those who participated appreciated the opportunity to interact with colleagues and experts in the field.

According to interviewees, BEST also took a responsive approach to the dissemination of resources such as computer equipment, software, AT devices, and braille and large-print materials. Staff, moreover, were attentive to emerging needs, agreeing to investigate and provide PD to practitioners about new technologies and instructional practices.

The full report of the longitudinal study is provided in the “Section C – Additional Information” section of the FPR.

1. Describe the challenges, opportunities, and emerging issues encountered, how the project overcame the challenges, incorporated the opportunities, and addressed the emerging issues.

Generally, the grant activities progressed as anticipated from October 1, 2019, through September 30, 2024. In Project Year 1, March 2020, the COVID-19 pandemic caused stay at home orders to be instituted in many states, including Ohio. Much of the planned work of the BEST Grant was designed as face-to-face training, support, and technical assistance, however the BEST Grant team and trainers quickly recognized that most of the activities could be implemented virtually with some creative restructuring.

While the model of instruction used for the BEST grant prior to the pandemic was fully face-to-face training, this necessary switch from face-to-face to virtual training for a year allowed us to rethink delivery models for BEST grant trainings and supports. Many participants commented on the ease of access that virtual trainings provided. Although the new delivery models were largely a result of the pandemic, we found that they also helped to address the significant staffing shortages that schools in Ohio are experiencing. Flexible learning options that did not require travel, teacher release time, or full day trainings increased opportunities for educators to attend trainings.

During year four, a new technology delivery system was purchased to offer some trainings using a hybrid model. This delivery system includes a camera that spans a full meeting room and can zoom in and out to focus on various speakers or content. The flexibility of the system provides an engaging learning environment for both in person and virtual attendees. During year 5, we continued the use of this system for several offered trainings: BrailleNote with Google, BrailleNote with KeyMath, Converting Math to Braille, Basic Braille, Basic Nemeth, and Advanced Braille. Throughout the project years, participants continued to have access to training recordings and resources using Microsoft Teams and upon request after trainings are concluded.

Through our continued partnership with Shawnee State University and The Ohio State University, we aimed to collect information on BEST grant participants who have obtained positions working as TVIs. This information was requested however an established reporting system was not implemented; therefore, accurate data is not available.

Our BEST website was not designed to collect individual user data by county or otherwise identifying individual user information, therefore we were unable to determine how many participants of the 1,501 active users were from rural or Appalachian counties. The TA Portal was accessed 313 times, but due to data collection restraints, we cannot confirm whether any of these users were from those counties. On-Demand Tips and Tricks videos received 559 plays for a total of 24.85 hours from June 2023 through September 30, 2024. Moving forward, the team discussed implementing a user login to access resources, which would allow gathering additional data points about our users.

Finally, On May 10, 2023, we were notified that Ohio Penal Industries (OPI) made the decision to close the Grafton Braille Services Center (GBSC) located at Grafton Prison in northern Ohio. At that time, the AT&AEM Center drafted a letter to OPI. The letter was sent on May 15, highlighting the benefits and accomplishments of the GBSC, which included the unique certifications and qualifications within the GBSC, the investment and financial commitment that the BEST Grant has provided, professional development and technical assistance the BEST Grant provided, the excellent reputation and high quality braille and tactile graphics produced by the GBSC, and the impact on Ohio's student achievement. After continued conversation through email and phone calls with the Chief of OPI, official notification of the cancellation of the Memorandum of Understanding (MOU) between Grafton and the AT&AEM Center was received on May 23, 2023 and the GBSC officially closed. In June, equipment purchased by the BEST Grant and provided to the GBSC was retrieved by the AT&AEM Center at OCALI. Equipment retrieved from GBSC is available for use to support braille needs throughout the state as needed.

Section B. Work Plan

Provide an analysis of the goals and objectives submitted in the grant application. Indicate whether any goals, objectives, or activities in the work plan were adjusted and approved by the project officer, particularly those that represented a change in the scope or objectives of the project. If so, please include the original goal, objective or activity (reference the page numbers in the application), the specific change, and the justification.

There were no changes in any goals, objectives or activities in the work plan that resulted in a change in the scope or objectives of the project. The three goals outlined in the grant focused on braille, with each goal targeting a focused and identified need in the areas of knowledge, practice, and equitable access to braille and related technologies. Although each goal had a specific focus, we have universally targeted Appalachian/rural areas within every goal of the grant to, again, support access to underserved populations.

Goal 1, Enhance the competency of preservice and in-service educators, paraprofessionals, and others to provide braille literacy instruction and support across all academic areas including Science, Technology, Engineering, and Math (STEM), had a strong focus on braille literacy and includes all academic areas, with a specific intention to include STEM. The goal was intended to teach professionals about best practices in braille literacy and supporting students in accessing the curriculum across all content areas. Activities to meet this goal were composed entirely of PD opportunities. There were no changes to the original goals or objectives.

Goal 2, Enhance the competency of preservice and in-service educators, paraprofessionals, and others to efficiently and effectively acquire and create braille materials, shifted the focus to increase educators' capacity to both obtain and produce braille for their students. The goal intended to broaden knowledge in areas such as braille transcription and related hardware/software, supported the establishment and operation of braille production centers, and provided TA for certifications related to the production of braille. To meet this goal, a variety of grant activities were provided through TA and PD. There were no changes to the original goals or objectives.

Goal 3, Educators and others will be able to apply strategies learned in the BEST project trainings and other activities to more effectively manage the braille needs of their students through the support of follow-up technical assistance or resources, was focused on increasing the longevity of the success of the grant and extending attendee knowledge and support. This goal utilized TA and online resources such as webinars, peer-to-peer support networks, and an online repository for related

materials to continue the engagement of attendees and provided continued access to grant materials and information.

In summary, there were no changes to the original goals or objectives; however, due to the pandemic and state restrictions on in-person gatherings, all training activities post COVID-19 were delivered virtually. Additionally, some activities were delivered over the course of multiple days to accommodate learners' needs in the virtual learning environments.

Section C. Budget

Budget information will be reflected in two places: 1) 524 B and 2) Section B of the Performance Report. Section B should contain responses to the following questions.

1. Provide a cumulative budget and budget narrative for the reporting period (October 1, 2019 to September 30, 2024). Please separate expenditures into the Federal Grant Funds column and the Non-Federal Funds (Match/Cost Share), if appropriate. This should reflect the program's match requirement, if appropriate.

Summary of expenditures obligated from October 1, 2019 to September 30, 2024.

Expenditure	Funds
Personnel	$0.00
Fringe Benefits	$0.00
Travel/Mail	$16,189.64
Equipment	$30,627.34
Supplies	$192,789.38
Contractual	$270,106.65
Construction	$0.00
Other	$783.72
Total Direct Costs	**$510,496.73**
Indirect Costs	$33,513.59
Training Stipends	$6,592.06
Carryover Funds Expended	$4,360.51
Total Expenditures	**$554,962.89**

Budget Narrative for 2019-2024

Personnel and Fringe

No personnel and fringe costs were requested for this grant, therefore a personnel loading chart is not provided.

Mail/Travel

Expended Mail/Travel Budget: $16,189.64

Expenses for mail and travel were budgeted for the shipping of BEST computer labs and materials to participants of BEST software trainings, materials for LBPC's, and other instances in which shipping may be required to support grant activities.

Equipment

Expended equipment budget: $30,627.34

Explanation – Due to a change in our fiscal agents' Guidelines for Property Inventory, after Year 1 of the project, the Equipment budget was requested to be moved to supplies for the remaining years of the grant. The request was approved by our project officer on April 21, 2022. These funds were still used as originally specified to purchase braille embossers for local school districts/agencies who were approved to receive a local braille production centers. The Property Inventory Guidelines states:

> "For the purpose of this policy, "equipment" shall mean a unit of furniture or furnishings, or instrument, a machine, an apparatus, or a set of articles which retains its shape and appearance with use, is nonexpendable, costs greater than $5,000 (effective July 1, 2020). to replace and does not lose it identity when incorporated into a more complex unit except computers or related technology."

Supplies

Expended Supply Budget: $192,789.38

Funds were budgeted to purchase the following: Software for training participants, supplies and braille embossers for LBPC's, and other materials and resources to support BEST trainings and TA.

Contractual

Expended Contractual Budget $270,106.65

Funds were budgeted to implement the following activities: TA provided by our BEST TA consultants, video series development costs, instructor costs for PD events, external evaluator costs, and college credit for participants.

Construction

No construction costs were requested in this grant.

Other

Expended Other Budget: $783.72

Funds were budgeted to repair BEST lab computers for their continued use to support trainings.

Indirect Costs

Expended IDC Budget: $33,513.59

Funds were expended to cover indirect costs associated with the grant expenses.

Training Stipends

Expended Training Stipends Budget: $4,360.51

Funds were expended to cover the cost of training stipends for a number of braille trainings provided.

2. Describe any deviations from the original grant application that required prior approval from the Department (see EDGAR 34 CFR 74.25 and 80.30), if applicable, including changes in key personnel, level of effort, or line-item modifications exceeding the allowable 10 percent administrative flexibility, or any budged modifications resulting from project objectives or scope changes discussed above.

Key Personnel Changes/Level of Effort

There have been changes in key grant personnel. Julie Pashovich retired from the AT&AEM Center in June 2022. Augusta Fisher stepped into her role after 2 years of working with Julie. Augusta handled all grant tasks that Julie managed for many years. Augusta has a B.A. in Writing and Adolescent to Young Adult Education and had prior experience working with the AT&AEM Center as an office intern from 2017 – 2020. In addition, Jan Rogers retired from the AT&AEM Center in July 2023. Stacy Springer stepped into the role of Program Director for the AT&AEM Center and Co-Project Director for the BEST Grant. Stacy has a M.S. in Occupational Therapy and a B.S. in Psychology and Special Education. There were no changes in the level of effort among key personnel.

Line-Item Modification

Deviations from the original Year 1 budget include:

a. Due to a change in our fiscal agents' Guidelines for Property Inventory, the original equipment budget was requested to be moved to supplies for the remaining years of the grant. The request was approved by our project officer on April 21, 2022. These funds were still used as originally specified to purchase braille embossers for local school districts who were approved to receive a local braille production center. The new Property Inventory Guidelines states:

“For the purpose of this policy, "equipment" shall mean a unit of furniture or furnishings, or instrument, a machine, an apparatus, or a set of articles which retains its shape and appearance with use, is nonexpendable, costs greater than $5,000 (effective July 1, 2020). to replace and does not lose it identity when incorporated into a more complex unit except computers or related technology.”

b. The amount needed in the Contractual budget changed due to moving from in person trainings to virtual and hybrid training formats. We submitted budget amendments for following grant years accordingly. The funds were used to support BEST trainings and training participants, which included on demand tips and tricks videos, maintaining current resources, and additions to the OCALI Lending Library that support BEST grant activities. There were no anticipated changes to project objectives or scope.
c. Yearly Indirect Cost adjustments, which in turn change the amount in the Supply budget.

Budget Modifications Resulting from Project Objectives or Scope Changes
There were no changes to project objectives or scope.

3. Provide an explanation if you did not expend funds at the expected rate during the reporting period, if applicable.

N/A. Budget amendments were submitted when necessary to move funds so that funds were drawn down and expended by the end of each project year to the best of our ability.

4. Describe any significant changes to your budget resulting from modification of project activities during the grant period of performance, if applicable.

N/A

5. Describe any changes to your budget that affected your ability to achieve your approved project activities and/or project objectives, if applicable.

N/A

U.S. Department of Education
Grant Performance Report (ED 524B)
Project Status Chart

PR/Award #: H235E190004

SECTION A - Project Objectives Information and Related Performance Measures Data (See Instructions. Use as many pages as necessary.)

1 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 1.1: Improve state-wide equity in the distribution of high-quality training to preservice and in-service educators, paraprofessionals, and transcribers to support student proficiency in using braille for scientific and mathematical notation, to access STEM.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
1.a Number of participants in training sessions	GPRA	175	/		198	/	
1.b Number of participants who complete the training	GPRA	175	/		192	/	
1.c Number of participants in training sessions from Appalachian and rural regions	GPRA	25	/		21	/	
1.d Number of braille STEM sessions completed	PROGRAM	15	/		30	/	
1.e Percent of trainings that equal or exceed a 6 on a measure of quality with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100
1.f Percent of trainings that equal or exceed a 6 on a measure of relevance with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100
1.g ercent of trainings that equal or exceed a 6 on a measure of usefulness with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100

Explanation of Progress (Include Qualitative Data and Data Collection Information)

198 STEM training sessions were completed for this objective. For project measures of quality, relevance, and usefulness, 100% of trainings have equaled or exceeded a measure of 6 on a scale from 2-8 per participant evaluation (1.1.e, 1.1.f, 1.1.g).

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2 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 1.2: Improve statewide equity in the distribution of high-quality training to preservice and in-service educators, paraprofessionals, and transcribers to support student proficiency in braille literacy for reading and writing.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
1.2a Number of participants in training sessions	GPRA	225	/		292	/	
1.2b Number of participants who complete the training	GPRA	225	/		272	/	
1.2c Number of participants in training sessions from Appalachian and rural regions	GPRA	50	/		21	/	
1.2d Number of braille reading and writing sessions completed	PROGRAM	15	/		46	/	
1.2e Percent of trainings that equal or exceed a 6 on a measure of quality with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100
1.2f Percent of trainings that equal or exceed a 6 on a measure of relevance with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100
1.2g Percent of trainings that equal or exceed a 6 on a measure of usefulness with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100

Explanation of Progress (Include Qualitative Data and Data Collection Information)

46 training sessions were completed for this objective. We marketed aggressively to and engaged participants from rural and Appalachian regions of the state (1.2.c). For project measures of quality, relevance, and usefulness, 100% of the trainings have equaled or exceeded a measure of 6 on a scale from 2-8 per participant evaluation (1.2.e, 1.2.f, 1.2.g).

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3 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 2.1: Provide high-quality training to preservice and in-service educators, paraprofessionals, and transcribers to understand the value of, and develop competencies in, producing accessible source documents for the purpose of creating braille.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2.1a Number of participants in training sessions	GPRA	75	/		164	/	
2.1b Number of participants who complete the training	GPRA	75	/		137	/	
2.1c Number of participants in training sessions from Appalachian and rural regions	GPRA	25	/		20	/	
2.1d Number of sessions completed	PROGRAM	10	/		27	/	
2.1e Percent of participants who can meet a mastery level post-test measure	PROJECT		85 / 100	85		92 / 100	92
2.1f Percent of trainings that equal or exceed a 6 on a measure of quality with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		93 / 100	93
2.1g Percent of trainings that equal or exceed a 6 on a measure of relevance with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		100 / 100	100
2.1h Percent of trainings that equal or exceed a 6 on a measure of usefulness with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		93 / 100	93

Explanation of Progress (Include Qualitative Data and Data Collection Information)

Twenty-seven sessions were completed for this objective. While the target of Appalachian participants was not met, overall participant targets were exceeded during the five-year project cycle. Participants who met mastery level (85%) on a post test (2.1.e) was 92% of those tested. For project measures of quality, 92% of trainings equaled or exceeded a measure of 6, for relevance 100%, and for usefulness, 92% of the trainings have equaled or exceeded a measure of 6 on a scale from 2-8 per participant evaluation (2.1.f, 2.1.g, 2.1.h).

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4 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 2.2: Increase ability of educators and others who support braille users to efficiently and effectively locate ready-made braille and/or use non-visual technologies to provide for the braille needs of persons with blindness.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2.2a Number of participants in training sessions	GPRA	500	/		2455	/	
2.2b Number of participants who complete the training	GPRA	500	/		2440	/	
2.2c Number of participants in training sessions from Appalachian and rural regions	GPRA	100	/		109	/	
2.2d Number of sessions completed	PROGRAM	15	/		44	/	
2.2e Percent of trainings that equal or exceed a 6 on a measure of quality with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2f Percent of trainings that equal or exceed a 6 on a measure of relevance with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2g Percent of trainings that equal or exceed a 6 on a measure of usefulness with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2h Number of participants who obtained positions where braille skills are needed	GPRA	10	/		0	/	

Explanation of Progress (Include Qualitative Data and Data Collection Information)

For this objective, 44 training sessions were completed. The number of participants who attended and completed these sessions (2,440) far exceeded the target of 500. (2.2.a, 2.2.b). We marketed aggressively and engaged participants from rural and Appalachian regions of the state. We are able to track rural and Appalachian participants for all BEST activities with the exception of the OCALICON event (2.2.c). Currently there is no data on the number of participants who have obtained positions after completing BEST trainings. As for the participant base, many who attended training sessions were

already in positions where braille skills were needed while completing BEST trainings. For project measures of quality, relevance, and usefulness, 97% of completed trainings have equaled or exceeded a measure of 6 on a scale from 2-8 per participant evaluation, exceeding the target of 90% at target closure (2.1.e, 2.1.f, 2.1.g).

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4 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 2.2: Increase ability of educators and others who support braille users to efficiently and effectively locate ready-made braille and/or use non-visual technologies to provide for the braille needs of persons with blindness.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2.2a Number of participants in training sessions	GPRA	500	/		2455	/	
2.2b Number of participants who complete the training	GPRA	500	/		2440	/	
2.2c Number of participants in training sessions from Appalachian and rural regions	GPRA	100	/		109	/	
2.2d Number of sessions completed	PROGRAM	15	/		44	/	
2.2e Percent of trainings that equal or exceed a 6 on a measure of quality with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2f Percent of trainings that equal or exceed a 6 on a measure of relevance with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2g Percent of trainings that equal or exceed a 6 on a measure of usefulness with a range from 2 (low) to 8 (high)	PROJECT		90 / 100	90		97 / 100	97
2.2h Number of participants who obtained positions where braille skills are needed	GPRA	10	/		0	/	

Explanation of Progress (Include Qualitative Data and Data Collection Information)

For this objective, 44 training sessions were completed. The number of participants who attended and completed these sessions (2,440) far exceeded the target of 500. (2.2.a, 2.2.b). We marketed aggressively and engaged participants from rural and Appalachian regions of the state. We are able to track rural and Appalachian participants for all BEST activities with the exception of the OCALICON event (2.2.c). Currently there is no data on the number of participants who have obtained positions after completing BEST trainings. As for the participant base, many who attended training sessions were

already in positions where braille skills were needed while completing BEST trainings. For project measures of quality, relevance, and usefulness, 97% of completed trainings have equaled or exceeded a measure of 6 on a scale from 2-8 per participant evaluation, exceeding the target of 90% at target closure (2.1.e, 2.1.f, 2.1.g).

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5 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 2.3: Increase the pool of braille transcribers available to provide braille to Ohio school districts, businesses, and other agencies that support students and adults with braille needs.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2.3a Number of participants engaged in technical assistance (TA) sessions	GPRA	75	/		356	/	
2.3b Number of participants from rural and Appalachian areas engaged in TA sessions	GPRA	15	/		38	/	
2.3c Number of participants who complete the NLS course	GPRA	10	/		4	/	
2.3d Number of participants who obtain positions where braille skills are needed	GPRA	5	/		0	/	
2.3e Number of TA hours provided	PROJECT	375	/		760	/	

Explanation of Progress (Include Qualitative Data and Data Collection Information)

BEST collects data in 3 categories of TA, with 356 participants involved in sessions for a total of 760.79 hours (2.3.e). Many participants were involved in more than a single TA session over the five-year, therefore unique participants were less than the 356 reported participants. TA is reported in the following categories (2.3.a): 1) TA to school districts/agencies producing braille were provided for 600.04 TA hours. 2) TA to Grafton Braille Service Center (GBSC) for 71.25 hours. And, 3) TA to braille transcriber candidates: 89.5 TA hours have been provided to participants for their NLS certification (2.3.c). Of the 356 participants, 38 were from rural/Appalachian counties of Ohio. (2.3.b) To date, we are unaware of anyone who has obtained a position as a transcriber this grant year as a result receiving general TA or TA for NLS certification. Often participants are already in transcribing positions but have been trained on the job and now desire to pursue formal certification for the braille transcribing work they are already doing. (2.3.d).

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6 . **Project Objective** [ ] Check if this is a status update for the previous budget period.

Objective 2.4: Expand braille production capacities within local school districts and/or vocational and technical education centers.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2.4a Number of Local Braille Production Centers (LBPCs) set up	PROJECT	15	/		17	/	

Explanation of Progress (Include Qualitative Data and Data Collection Information)

An established application process was used to select a target of three high-need school districts/agencies for Local Braille Production Centers (LBPC) on a yearly basis. The 17 established LBPC's for this five-year cycle were: Pickaway County ESC, South Central Ohio ESC, Findlay City Schools, Ashtabula ESC, Midview ESC, Ohio Valley ESC, Orrville City Schools, Troy School District, Canton School District, Kettering Local Schools, Lima City Schools, Jackson Milton Local SD, South Point Local SD, Clark Shawnee SD, Ironton Local SD, Three Rivers Local SD, and EJ Therapy. Additional LBPC's were placed with equipment that had been returned to the AT&AEM Center.