MULTILINGUAL? MULTIDISCIPLINARY! TEACHERS' COLLABORATION TO
SUPPORT ENGLISH LANGUAGE LEARNERS WITH VISUAL IMPAIRMENTS

by

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Thesis

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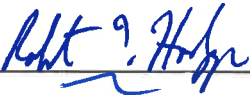
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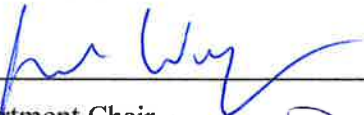Special Education

Visual Disabilities

April 2024

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MULTILINGUAL? MULTIDISCIPLINARY! TEACHERS' COLLABORATION TO SUPPORT ENGLISH LANGUAGE LEARNERS WITH VISUAL IMPAIRMENTS

By

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Peabody College of Vanderbilt University

April 2024

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The purpose of this paper was to determine the following research questions: (1A) What is the frequency and perception of collaboration between English as a second language (ESL) teachers and teachers of the visually impaired (TVIs)? (1B) Does the frequency and perception of collaboration differ for professionals based on their students' visual impairments (i.e., having low vision compared to blindness)? (2) Does the frequency and perception of collaboration vary for teachers based on individual demographics, such as their perceived preparedness from their teacher education programs or in-service training? Survey results from 81 ESL teachers and 72 TVIs were analyzed. Participants reported about their collaboration regarding 105 students, 61 of which had low vision and 44 of which were blind. The average total collaboration score was 71.95 out of a possible total score of 110. ESL teachers collaboration with a TVI was more frequent when the student was blind compared to when a student had low vision. TVI collaboration with ESL teachers collaborated at the same frequency regardless of if the student was low vision or blind. No statistically significant relationship was found between a participant's perception and frequency of collaboration and the student's visual impairment. These results have implications for both professional practice and teacher preparation programs.

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Multilingual? Multidisciplinary! Teachers' Collaboration to Support English Language

Learners with Visual Impairments

Federal education regulations define students as an English language learner (ELL) if their native language is a language other than English and the student experiences difficulties in speaking, writing, reading, or understanding English (Every Student Succeeds Act, 2015). In 2010, ELLs made up 9.2% of public school students in the United States (Irwin et. al, 2023). In 2020, the percentage of students who were identified as an ELL increased to 10.3% equating to 5 million students and among those students, 16.1% were identified as having a disability (Irwin et al., 2023). There are established interventions to support students with disabilities develop English language proficiency (e.g., explicit instruction, use of visuals and pictures, building on background knowledge; Durán & Durán, 2020). These strategies are extremely visual, reliant on a students' ability to see visuals or images and make connections between concepts presented and the spoken language. For students with low vision or blindness (referred to in this manuscript as visual impairments (VI)) who are an ELL, there are very few accessible researched based options to promote English language instruction (Schultz & Savaiano, 2022). English as a second language (ESL) teachers and teachers of the visually impaired (TVIs) must be able to closely collaborate to provide meaningful and accessible English language instruction for students who are an ELL with a VI.

English Language Acquisition for Students with Visual Impairments

Individuals gather information about the world around them through their five senses (vision, hearing, touch, taste, and smell) with sight and hearing being the primary senses used to develop understanding. Students who are blind cannot use the sense of sight. The communication input they receive during the language acquisition process comes through their sense of hearing,

taste, touch, and smell. For students with low vision, the visual input they receive may not be meaningful. If the input is not understandable to the individual, the language will not be successfully acquired (*Input Hypothesis*, Krashen, 1982; Mitchell, 2019). An important quality of comprehensible input is the pairing of non-linguistic supports including realia, or real objects, and pictures (Krashen, 1982). Students with low vision may have difficulty viewing realia, particularly if they are not provided access to interact, close viewing distance, or preferential visual field access. Students with low vision may also have difficulty with pictures if they are visually inaccessible. Input is likely to be less comprehensible if it is not paired with non-linguistic supports (e.g., visuals, models, physical activities) impacting second language acquisition.

Students with VI can face similar barriers in second language acquisition as they do in their first language. This may include the use of empty language, otherwise referred to as verbalism. Students with VI do not consistently have a sensory experience other than an auditory to connect with the language being used (Kastrup & Valente, 2018). Consequently, the language has limited to no meaning for the student (Kastrup & Valente, 2018; Civelli, 1983). For example, a student with a VI may have learned the word 'tree,' having heard it in books that were read to them. They don't have a visual sensory experience to connect to what a tree is. Without alternative sensory experiences (e.g., a tactile experience touching a branch, an olfactory experience smelling the bark, etc.), the language learned (tree) is empty of meaning. The concept of empty language acquisition during first language development can occur in second language acquisition as well, particularly if the student isn't provided opportunities for concrete experiences connected to the language being taught (Kastrup & Valente, 2018).

Collaboration to Promote English Language Acquisition

TVIs and ESL teachers need to have successful collaboration for the common purpose of providing accessible instruction to students who are ELLs+VI. Collaboration occurs when two individuals who have a common purpose work together equally and effectively to promote student success in the educational environment (Friend & Cook, 2007). There are several factors that are influential on the success of collaboration. One such factor is the view by collaborative members that collaboration is something that is in their self-interest (Mattessich & Johnson, 2018). Teachers may not view collaboration with each other as in their self-interest due to the 'specialization trap' (Kangas, 2017). The term 'specialization trap' describes the belief that collaboration is unnecessary as teachers and specialists should concentrate on their own professional role (Kangas, 2017). This leads to students being viewed only through the lens through which that teacher or service provider's role covers, preventing the student from being viewed as a whole person (Kangas, 2017). The focus on specialization only by educators can impact the effectiveness of the services provided to students who are ELLs+VI. The 'specialization trap' can prevent educators from meeting the comprehensive needs of the student. This leads to educators only viewing and addressing the needs within what they perceive their role covers (Kangas, 2017). For students who are ELLs+VI, this means that TVIs may only be meeting the student's vision needs, but not their language needs. For ESL teachers, this may mean only meeting the student's language needs, but not their vision needs.

Krashen's (1982) input hypothesis has been proposed as a teaching model for students who are ELLs+VI (Guinan, 1997). Following the concept of i + 1, i is the student's current language level, with the + 1 representing language input that is marginally more advanced than the student's current language level (Krashen, 1982). Instruction would be provided using the

concept of i + 1 to select appropriate linguistic input. For this model to be successful, TVIs &

ESL teachers need to engage in quality collaboration where they view each other as reliable and

competent (Guinan, 1997; Mattessich & Johnson, 2018). TVIs rely on an ESL teacher's

specialized knowledge and ability to recommend texts that are appropriate for the student to

grow linguistically following the i + 1 input model (Guinan, 1997). ESL teachers rely on a TVI's

specialized knowledge on the educational implications of a student's visual impairment as well

as information for adapting instruction and materials (Conroy et al., 2006).

Although there is an identified need for collaboration between ESL teachers and TVIs

(e.g., recommending linguistically appropriate texts, adapting instructional materials, etc.;

Guinan, 1997; Conroy et al., 2006), there is limited research on their collaboration. Research on

the perception of collaboration between ESL teachers and TVIs has concentrated on the ESL

teachers' perceived challenges in regards to collaborating with TVIs broadly (Conroy et al.,

2006). Results indicated that ESL teachers perceived TVIs as more available for collaboration

compared to classroom teachers (Conroy et al., 2006). There is no known research on TVIs'

perceptions of collaboration with ESL teachers. TVIs most frequently learned strategies of how

to work with students who are ELLs+VI through university courses, workshops, conferences, or

independent searching (Topor & Rosenblum, 2013). TVIs were least likely to have learned the

strategies they were implementing from an ESL teacher which may indicate an absence of

collaborative practice between TVIs and ESL teachers (Topor & Rosenblum, 2013).

Barriers to Meaningful Collaboration

Burnout

Burnout is a type of emotional exhaustion and skepticism caused by chronic stress

(Maslach & Jackson, 1981). Teachers may experience burnout due to a variety of factors (e.g.,

workload, role overload, work pressure; Ghanizadeh & Jahedizadeh, 2015). This can impact

mental health, turnover, psychosocial problems (e.g., irritability, frustration, anger, etc.), and

contribute towards early retirement (Ghanizadeh & Jahedizadeh, 2015). Feelings of burnout in

teachers has increased in prevalence, in part due to the COVID-19 pandemic and its aftermath

(Ozamiz-Extebarria et al., 2023). In a recent study, TVIs in particular were found to be

significantly more burnt out than other human service professions (e.g. social workers, police

officers, etc.; Agnes, 2022). Burnout poses a risk to the teaching profession at large as more

teachers prepare to leave the teaching field than enter it (Torpey, 2018). Although burnout has

been shown to impact teachers' practices, such as teacher attendance, there is no current research

on whether teacher burnout is a barrier to collaborative practices between teachers (Ghanizadeh

& Jahedizadeh, 2015).

Impact of Pre-Service Training

Traditionally, teachers are prepared to enter the field through teacher training programs.

Instruction in ELL pedagogy is needed for teachers to support the unique needs students who are

ELLs have (Baecher, 2012). Teacher effectiveness is increased through practice linked

instruction and opportunities during their training program (Boyd et al., 2008). To produce more

effective teachers, training in the pedagogy needed for the student populations a teacher might

encounter in practice is necessary (Boyd et al., 2008). This includes training in ELL pedagogy.

However, few TVIs receive instruction during their training program on working with students

who are ELLs (Topor & Rosenblum, 2013).

Just as the number of students who are ELLs in the school system has increased, so has

the number of students with disabilities who receive services under the Individuals with

Disabilities Education Act (IDEA). From 2010-11 to 2021-22 school year, there has been

between a 13-15% increase in students with disabilities (National Center for Education Statistics, 2023). Just as TVIs can anticipate working with students who are ELLs+VI, ESL teachers can anticipate working with students who are ELLs with disabilities (Irwin et. al, 2023). This can include students with VI. Similar to TVIs, ESL teacher receive minimal, if any, instruction on students who are ELLs+VI (Conroy et al., 2006). When training is provided, it is most frequently in the form of in-service training, not occurring during pre-service training (Conroy et al., 2006).

Addressing Gaps

To address the gaps in the frequency, perception, and barriers to TVI and ESL teacher collaboration in the US education system, the following research questions were asked:

(1A) What is the frequency and perception of collaboration between ESL teachers and TVIs?

(1B) Does the frequency and perception of collaboration differ for professionals based on their students' visual impairments (i.e., having low vision compared to blindness)?

(2) Does the frequency and perception of collaboration vary for teachers based on individual demographics, such as their perceived preparedness from their teacher education programs or in-service training?

Method

Eligibility

The survey was open to all individuals who were currently employed or were previously employed as a teacher of the visually impaired (TVI) or English as a second language (ESL) teacher during the 2020-21, 2021-22, or 2022-23 school year in the United States & territories. The research team defined a TVI as a teacher who provides specialized instruction in the expanded core curriculum to students with visual impairments. Other terms commonly used to refer to TVIs included: certified teacher of the visually impaired (CTVI), teachers of students

with visual impairments (TSVI), and teachers of the blind and visually impaired (TBVI). The

research team defined an ESL teacher as a teacher who provides instruction on the English

language to students who are non-native speakers. Other terms commonly used to refer to ESL

teachers included: English for speakers of other languages (ESOL) teacher, teacher of English to

speakers of other languages (TESOL) teacher, and English as a new language (ENL) teacher.

Recruitment

Multiple recruitment methods were used to reach participants. This included directly

emailing TVIs, ESL teachers, ESL service coordinators, and vision service coordinators as well

as social media posts by research team members in both public and private Facebook groups

composed of ESL teachers and TVIs. Additionally, researchers shared research opportunities

through professional networks including Association for Education and Rehabilitation of the

Blind and Visually Impaired (AER), TESOL Affiliate Chapters, National Association for

Multicultural Education (NAME), Association for Bilingual Education (ABE), Council for

Exceptional Children (CEC), and American Printing House (APH) for the Blind Trustees.

Researchers also used a snowball recruitment method by requesting individuals who received

emails during recruitment or viewed social media posts to share the study with others who may

be eligible.

Survey Tools

The study consisted of two survey tools. The first tool was a screener survey to evaluate

prospective participants eligibility and validity to participate. If found eligible and valid, the

participant was sent an individualized link to the second survey tool. The second tool was the

main survey consisted of specific questions regarding the participant's preparedness to teach

English language learners with a visual impairment (ELLs+VI) as well as their experience

working with a TVI or ESL teacher.

Tool #1: Screener Survey

      Prospective participants answered open-ended questions regarding their job title, years in

which they worked with ELLs, and their experience working. Two members of the research team

were trained to review the screeners. The team members independently reviewed responses to

determine if the response was valid and that the participant was eligible to complete the main

survey. The research team examined participant's write-in responses to check that responses

were logical, free from grammatical errors, and the answers met the eligibility criteria (e.g., the

written in job title and years having worked with ELLs fell within the eligibility criteria). Write-

in responses were also examined for duplicate responses from previous participants and that

there was no evidence of the write-in being a machine learning response (e.g., similar sentence

structure to other respondents, repeated partial language). The research team also determined

validity of the prospective participant's response by examining their response to the two consent

questions asked and the use of any foreign characters. The screener also included additional

elements that were unseen by participants to check for validity. This included hidden questions

that participants would only have access to only through fraudulent means as well as time stamps

that allowed the research team to examine how quickly the participant completed the screener.

      If the response was determined as eligible, the participant was sent an individualized link

to the main survey. If the response was determined as ineligible, the participant was not sent an

individualized link to the main survey. If the two team members could not reach consensus, the

team would consult with the principal investigator (PI) to make a final decision. If the two team

members and the PI were uncertain, to reduce the likelihood of researcher bias, the participant

was sent an individualized link. The team recorded the participant ID for further review should they complete the main survey to clarify that the participant was valid and eligible to complete the survey. Responses that were flagged for close review, but determined by the team upon closer review as valid and eligible were included in the final data set.

Tool #2: Main Survey

The main survey consisted of three sections. The first asked questions regarding participant demographics including their role, years of experience in their role, previous roles in education, ethnicity, languages spoken, urbanicity of the district they work in, and the year they graduated from their training program. This section also included the Copenhagen Burnout Inventory – Work Related Burnout Scale (Kristensen et al., 2005), to evaluate their current level of burnout. In the second section, participants were asked questions regarding their preparedness to teach students who are ELLs+VI, the inclusion of content about students who are ELLs+VI in their training program, and their access to professional development. The third section asked participants to share their experiences working with a specific student who was an ELL+VI. These questions included answering student demographic questions (e.g. additional disabilities, language spoken, communication modality, etc.) and the instructional methodologies, approaches, and informal strategies were used with the student. For each student they reported, a collaboration rating scale asked a series of 24 Likert questions for participants to report their experiences collaborating with the student's TVI or ESL teacher. The collaboration scale was adapted from the Teacher-Coach Alliance Scale (Domitrovich et al., 2008; Johnson et al., 2016). Participants could report their experiences and complete the collaboration scale for up to 15 different students.

 Demographic Variables

Participant Demographic Variables

Job Title. Participants reported if they were either a TVI or ESL teacher during the 2020-21, 2021-22, and/or 2022-23 school year.

Years in Current Job Title. Participants reported how many years they had been in their job title. Participants chose from a drop-down menu starting from less than 1 year, increasing in one year intervals until reaching 35 or more years.

Ethnicity. Participants were asked to report their race/ethnicity. The options included: American Indian or Alaska Native, Asian, Black or African American, Mexican American/Hispanic, Native Hawaiian or Other Pacific Islander, Caucasian or White, member of two or more racial groups, other, or prefer not to answer. If a participant selected member of two or more racial groups or other, they were directed to an optional write-in.

Additional Language(s) Spoken. Participants were asked a yes/no question to report if they spoke a language other than English.

Languages Spoken. Participants who reported that they spoke a language other than English were asked to share what language(s) they spoke. The options included: American Sign Language, Amharic, Arabic, Bengali, Chinese, Cushitic, English, French, German, Haitian, Hmong, Italian, Japanese, Korean, Marshallese, Navajo, Polish, Portuguese, Russian, Somali, Spanish, Swahili, Tagalog, Urdu, Vietnamese, Yupik Languages, and other. If a participant selected other, they were directed to a write-in.

Urbanicity. Participants reported the urbanicity of the district they worked in. Participants could choose from the following options: urban, suburban, town, or rural.

Student Demographic Variables

Participants were asked to think about a single student they had worked with who was an ELL+VI in the last three years. Participants reported student demographic information, their experience collaborating, and the teaching methods/approaches/strategies used with the student. Participants could do this for up to 15 individual students.

Grade. Participants reported what grade the student was in when they collaborated with either the student's TVI or ESL teacher. Response options included: pre-K3, pre-K4, kindergarten, 1st grade, 2nd grade, 3rd grade, 4th grade, 5th grade, 6th grade, 7th grade, 8th grade, 9th grade, 10th grade, 11th grade, or 12th grade.

Primary Language. Participants reported the student's primary language. The options included: Amharic, Arabic, Bengali, Chinese, Cushitic, English, French, German, Haitian, Hmong, Italian, Korean, Marshallese, Navajo, Polish, Portuguese, Russian, Somali, Spanish, Swahili, Tagalog, Urdu, Vietnamese, Yupik Languages, or other. If a participant selected other, they were directed to a write-in.

Research Question 1A: Perception and Frequency of Collaboration

Perception of Collaboration

Participants were asked to think about a single student they had worked with who was an ELL+VI and report their experience collaborating with either the student's ESL teacher or TVI. Participants rated a series of statements adapted from the Teacher-Coach Alliance Scale (Domitrovich et al., 2008; Johnson et al., 2016). The statements were grouped into 4 domains: working relationship, collaboration process, investment, and benefits of collaboration, with three to eight statements per domain. Each domain's statements were rated by the participants via a

Likert scale, rating each statement as either (1) never, (2) seldom, (3) sometimes, (4) often, or (5) always.

In the domain of working relationship, participants rated the following six statements, each starting with the phrase, "The student's [ESL teacher or TVI]…": (A) and I trust one another, (B) was approachable, (C) and I worked together collaboratively, (D) was easy to share concerns with, (E) showed a sincere desire to understand our [student's visual impairment student's second language acquisition stage], and (F) incorporated my suggestions into the services provided to the student. The Teacher-Coach Alliance Scale which this scale was adapted from also included the statement, "the coach and I agreed on what the most important goals for intervention were." This statement was not included in our adaptation of the scale. ESL and TVIs' goals for working together and supporting each other are defined by assessment and team data (e.g., individualized education plans; IEPs) rather than being mutually agreed upon.

In the domain of collaboration process, participants rated the following eight statements, each starting with the phrase, "The student's [ESL teacher or TVI]…": (G) was knowledgeable about second language acquisition, (H) was knowledgeable about teaching students with visual impairments, (I) communicated effectively, (J) delivered support, recommendations, and technical assistance in a clear and concise manner, (K) made suggestions that were appropriate for our student, (L) provided support that matched the needs of our student, (M) provided helpful information, and (N) was accessible for collaboration.

In the domain of investment, participants rated the following seven statements: (O) the time spent collaborating was effective and productive, (P) I had enough time available to participate in collaboration, (Q) the work I did during collaboration was important, (R) collaboration took too much of my time, (S) I was able to effectively implement recommended

strategies, (T) I would recommend collaborating with another teacher, and (U) my overall

experience collaborating was positive. Statement R was inverted to fit the collaboration rating

scale.

In the domain of benefits of collaboration, participants rated the following three

statements: (V) our student benefitted from our collaboration, (W) collaboration helped build my

capacity to implement evidence-based strategies and promising practices, and (X) collaboration

increased my knowledge of strategies to help our student. The Teacher-Coach Alliance Scale

which this scale was adapted from also included the statements, "the coach increased my

knowledge of classroom management strategies," and "the coach increased my knowledge of

cultural proficiency." These statements were not included in our adaptation of the scale as

classroom management strategies and cultural proficiency were topics outside of the scope of the

shared professional knowledge between TVIs and ESL teachers. The Teacher-Coach Alliance

Scale also included a fifth domain titled barriers to coaching. The statements in this domain were

not adapted for the collaboration rating scale used in this survey. The statements included in this

original domain were relevant to a coaching relationship rather than the collaborative

relationship of a TVI and ESL teacher.

A total score was calculated for each participant who completed all domains of the rating

scale. This score was a sum of their ratings for all of the statements in the entire scale. This total

score was used as the outcome variable for further analysis. Additional information on

participants' total scores are discussed in the section Perception of Collaboration below.

Frequency of Collaboration

Participants reported how frequently they collaborated with either the student's TVI or

ESL teacher. Participants could choose from a list of 9 options. These options were: (1) never,

(2) yearly, (3) semesterly, (4) quarterly, (5) monthly, (6) bi-weekly, (7) weekly, (8) 2-3 times per week, and (9) daily.

Research Question 1B: Correlation of Student's Visual Impairment with Perception and Frequency of Collaboration

Student's Visual Impairment

Participants reported which term best described the student's vision: (1) blind, or (2) low vision. The survey defined blindness as a student who was, "totally blind, had light perception (LP) only, or had cortical/cerebral visual impairment (CVI) with limited functional vision." The survey defined a student as having low vision if the student, "had a visual impairment, but their primary mode of accessing information was visual."

Research Question 2: Correlation of Teacher and Student Factors with Perception and Frequency of Collaboration

Number of ELLs+VI Taught Across Career.

Participants reported how many students who were ELLs+VI they had taught across their entire career in education. Answer options were 0, and five student increments ranging from 1-5 to 46-50 students (e.g., 1-5, 6-10, 11-15, etc.), ending with 51+ students.

Burnout

TVI and ESL teacher's burnout levels were determined using the Copenhagen Burnout Inventory – Work Related Burnout Scale (Kristensen et al., 2005). The inventory consists of a list of 7 feelings teachers may experience: (1) do you feel worn out at the end of the day? (2) are you exhausted in the morning at the thought of another day at work? (3) do you feel that every working hour was tiring for you? (4) do you have enough energy for family and friends during leisure time? (5) is your work emotionally exhausting? (6) does your work frustrate you? and (7)

do you feel burnt out because of your work? Each feeling was rated by the participants via a

Likert scale, rating each statement as either (1) never, (2) rarely, (3) sometimes, (4) often, or (5)

always (Likert, 1932). Question 4 was inverted to accurately fit the burnout scale. Participant

responses were then converted to a 0-100 scale with 1 = 0, 2 = 25, 3 = 50, 4 = 75, and 5 = 100

(Kristensen et al., 2005). An average burnout score for each participated was created by

averaging the scores from the scale. This score ranged from 0 to 100. Each participants' average

burnout score was used in further analysis.

Considering Leaving the Field

Participants were asked whether they were considering leaving the field. Response

options were: (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always.

Completion of Preparation Program

Participants were asked what year they graduated from their TVI or ESL preparation

program. Possible responses ranged from 1973 to 2023 in one-year increments.

Preparedness to Teach ELLs+VI Upon Completion of Training Program

Participants reported their preparedness to teach ELLs upon completion of their training

program. Participants rated the following statements: upon completing your teacher training

program, how prepared did you feel in teaching students who (1) are ELLs, (2) have low vision

and who are ELLs, and (3) are blind and who are ELLs. The response options were: (1) not

prepared, (2) minimally prepared, (3) moderately prepared, and (4) well prepared.

Inclusion of ELLs+VI Instruction in Training Program

Participants were asked a yes/no question to report if their training program included

instruction on teaching students who are ELLs+VI.

Current Preparedness to Teach ELLs+VI

Participants reported their current preparedness to teach students who are ELLs based on their existing professional skills. Participants rated the following statements: thinking about your professional skills right now, how prepared do you currently feel to teach students who (1) are ELLs, (2) have low vision and who are ELLs, and (3) are blind and who are ELLs. The response options were: (1) not prepared, (2) minimally prepared, (3) moderately prepared, and (4) well prepared.

Professional Development (PD) Opportunities

Participants reported what PD opportunities they have had regarding students who are ELLs+VI since becoming a teacher. The participants could select all that applied from a list of five PD formats and none. The answer options were: (1) workshop, (2) webinar, (3) conference, (4) in-service training offered by school district, (5) postgraduate education course, and (6) none.

Format of Contact

Participants reported the format of contact they used when collaborating with either the student's ESL teacher or TVI. The participants could select all that applied from a list of eleven contact formats and none of the above. The answer options were: (1) face-to-face contact, (2) email, (3) phone, (4) written feedback, (5) follow-up sessions, (6) stopping by the classroom, (7) modeling, (8) co-teaching, (9) conducting observations, (10) supporting implementation, and (11) follow-up observations.

Student's Visual Impairment

Participant reported which term best described the student's vision: (1) blind, or (2) low vision. The survey defined blindness as a student who was totally blind, had light perception (LP) only, or had cortical/cerebral visual impairment (CVI) with limited functional vision. The

survey defined a student as having low vision if the student had a visual impairment, but their

primary mode of accessing information was visual.

Student's Additional Disabilities

Participants reported if the student had additional disabilities. If yes, participants were

asked to name the additional disabilities. The research team coded write-in responses into the

following categories for analysis: (1) specific learning disability, (2) other health impairment, (3)

autism spectrum disorder, (4) emotional/behavioral disability, (5) speech or language

impairment, (6) visual impairment, including blindness, (7) deafness, (8) hearing impairment, (9)

deaf-blindness, (10) orthopedic impairment, (11) intellectual disability, (12) traumatic brain

injury, (13) multiple disabilities, and (14) developmental disability.

Student's Language Acquisition Stage

Participants reported what language acquisition stage the student was in at the time of

collaboration. The research team provided participants with the definitions for each of the

language acquisition stages from Hill & Miller (2013). The answer options were: (1)

preproduction, (2) early production, (3) speech emergence, (4) intermediate fluency, (5)

advanced fluency, and (6) I don't know.

Frequency of Student's Services from a TVI or ESL Teacher

Participants reported how frequently students received services from a TVI and ESL

teacher. The answer options were: (1) no services, (2) quarterly, (3) monthly, (4) bi-weekly, (5)

weekly, (6) 2-3 times per week, and (7) daily.

Student Setting

Participants reported what the student's primary education placement. The participants were provided the following response options: (1) inclusion setting (majority of classmates are peers without disabilities), (2) self-contained classroom, or (3) specialized school.

Student's Primary Communication Modality

Participants reported the student's primary communication modality. The answer options were: (1) oral/spoken language, (2) manual language (e.g., sign language, gestures, or cues), (3) visual or tactile symbols/augmentative or alternative communication (AAC) system), or (4) no functional communication system (neither spoken, signed, nor tactile/visual.

Data Analysis

The data was analyzed using Statistical Package for Social Sciences (SPSS) software. The data was expanded and analyzed across reported students rather than across participants. Each student reported about was treated as a separate data point even if the information reported was from the same participant (that is, each case was the student reported, rather than the teacher-participant, so that the experiences around each students' case could be examined). To analyze the perception and frequency of collaboration for the Research Question 1A, descriptive statistics were calculated. To analyze the relationship between the outcome variable to the student's visual impairment (e.g. low vision, blind) for the Research Question 1B, a chi-square matrices was performed. To analyze the relationship between perception and frequency of collaboration to teacher and student factors for Research Question 2, a correlation matrix was used. Additionally, for each teacher and student factor, descriptive statistics (e.g. frequency, mean, median, standard deviation, minimum, and maximum) were analyzed and reported. This comprises variables that were reported about by all participants, including participants who did not report on a student who was an ELL+VI.

Results

A total of 1,457 screeners were completed by prospective participants and reviewed by

the research team. One hundred eighty-one screeners were determined to be valid by the research

team and were sent an individualized link to the main survey. Two records were flagged for

further review and allowed to complete the main survey. The 2 flagged participants were further

evaluated upon completion of the main survey and were determined as valid and included in the

final data set. Out of the potential 183 total responses, 134 prospective participants completed the

main survey.

Participants reported about 105 students who were ELLs+VI. Sixty-one of the 105

students reported about had low vision (58.1%). Forty-four of the students reported about were

blind (41.9%). Forty-eight participants did not report about any ELLs+VI. Of the 153

participants, 81 participants (52.9%) reported that they were an ESL teacher. Seventy-two

participants (47.1%) reported that they were a TVI. See Table 1 for the number of students

reported about by participants.

Table 1.

Number of Students Reported By Participant

Participant's Job Title	Number of Students Reported Per Participant	Number of Participants	Total Number of Students Reported	Students with Low Vision	Students who are Blind
ESL Teachers	0 Students	44	0	0	0
	1 Student	28	28	19	9
	2 Students	4	8	4	4
	3 Students	0	0	0	0
TVIs	0 Students	3	0	0	0
	1 Student	40	40	23	17
	2 Students	13	26	13	13
	3 Students	1	3	2	1
Totals		133	105	61	44

The purpose of this study was primarily two different analyses. The first analysis involved descriptive statistics containing all respondents, (including respondents who did not report about any students who are ELLs+VI,) to summarize their demographic information and preparedness levels as a snapshot of TVIs and ESL teachers in general. The second analysis has two main components. The first component was descriptive statistics to summarize information reported only by participants who reported about a student who was an ELL+VI (e.g., the reported student's demographic information, the participant's collaborative experience, etc.). The second component was a multivariate analysis to explore the relationship between a participant's collaborative experience when working with a student who was an ELL+VI and their demographic information, preparedness level, and the demographic information of the student(s) they reported about.

Demographic Variables

Participant Demographic Variables

Years in Current Job Title. One hundred and fifty-three participants reported the number of years they have been in their current job title. Participants years in their current job title ranged from 0 to 35 years. The average number of years was about 10.5 years (SD = 8.177).

Ethnicity. One hundred and forty-eight participants reported their ethnicity. Five participants did not to report their ethnicity. The majority of participants ($n = 122$, 79.7%) were Caucasian. Other ethnicities written in by participants included Cuban, Italian-American, Eastern-European, Jewish, and Scandinavian. See Table 2 for the frequency counts and percentages of participant's ethnicity.

Table 2.

Frequency of Participant Ethnicity

Ethnicity	Frequency (*n*)	Percent of Responses (%)
American Indian or Alaska Native	0	0
Asian	5	3.3
Black or African American	6	3.9
Mexican American/Hispanic	11	7.2
Native Hawaiian or Other Pacific Islander	0	0
Caucasian or White	122	79.7
Member of two or more racial groups	1	0.7
Other (write-in response)	3	2.0
Did not report ethnicity	0	0

Note: write-in responses for other reported ethnicities included: Cuban, Italian-American,

Eastern-European, Jewish, and Scandinavian; write-in response for response option member of

two or more racial groups included: Caucasian and Japanese Hawaiian.

Additional Language(s) Spoken. One hundred and fifty-three participants reported

whether they spoke an additional language. The majority of participants (*n* = 89, 58.2%) did not

speak a language other than English. The remaining participants (*n* = 64, 41.8%) reported

speaking an additional language to English.

Languages Spoken. Of the 89 participants who spoke an additional language, the most

frequent additional language spoken by participants was Spanish (*n* = 47, 30.7%). Additional

languages spoken by participants included Italian (*n* = 6, 3.9%) and Arabic (*n* = 5, 3.3%). See

Table 3 for the frequency counts and percentages of the languages spoken by participants. Note:

languages listed as answer choices for participants but not spoken are not listed.

Table 3.

Languages Spoken By ESL Teachers and TVIs

Language	Frequency (*n*)	Percent of Responses (%)
Arabic	5	3.3
Chinese	3	2.0
English	5	3.3
French	2	1.3
German	4	2.6
Italian	6	3.9
Korean	1	0.7
Spanish	47	30.7
American Sign Language	3	2.0
Japanese	4	2.6
Other	6	3.9

Note: other responses included: Bosnian, Turkish, Mongolian, Latin, Uzbek, Uighur, and Pulaar.

Urbanicity. One hundred and fifty-three participants reported the urbanicity of the district they worked in. Most participants worked in either an urban (*n* = 64, 41.8%) or suburban district (*n* = 62, 40.5%). A small percentage of participants worked in a town (*n* = 16, 10.5%) or rural (*n* = 11, 7.2%) district.

Student Demographic Variables

Grade. Participants reported the grade of 105 students who are ELLs+VI. Students from every grade band from Pre-K3 to 12th grade were reported about. The students most frequently reported about were in Kindergarten (*n* = 14, 13.3%) or 9th grade (*n* = 12, 11.4%). See Table 4 for the frequency counts and percentages of the grade levels students were reported being in.

Table 4.

Frequency of Student's Grade

Grade	Frequency (n)	Percent of Responses (%)
Pre-K3	4	3.8
Pre-K4	8	7.6
Kindergarten	14	13.3
1st Grade	8	7.6
2nd Grade	6	5.7
3rd Grade	7	6.7
4th Grade	7	6.7
5th Grade	5	4.8
6th Grade	9	8.6
7th Grade	5	4.8
8th Grade	3	2.9
9th Grade	12	11.4
10th Grade	7	6.7
11th Grade	5	4.8
12th Grade	5	4.8

Primary Language. Participants reported the primary language of 105 students who are ELLs+VI. The majority of the students reported about spoke Spanish (n = 69, 65.71%) as their primary language. Other languages written in by participants as a student's language included Turkish, Ma'am, Lxil, Twi, Sindhi, Ukrainian, and Russian. See Table 5 for a listing of languages spoken. Note: Languages listed as answer choices for participants but not spoken are not listed.

Table 5.

Frequency of Student's Primary Language

Language	Frequency (*n*)	Percent of Responses (%)
Amharic	9	8.57
Chinese	7	6.66
French	2	1.90
Korean	1	0.95
Portuguese	2	1.90
Russian	1	0.95
Somali	3	2.86
Spanish	69	65.71
Swahili	1	0.95
Tagalog	1	0.95
Urdu	2	1.90
Other	7	6.67

Note: other responses included: Turkish, Ma'am, Lxil, Twi, Sindhi, Ukrainian, and Russian.

Research Question 1A: Perception and Frequency of Collaboration

Perception of Collaboration. A Cronbach's Alpha analysis was completed to determine the reliability of the collaborating rating scale for both TVIs and ESL teachers. Two statements within the collaboration process domain were not reliable for both TVIs and ESL teachers. These statements were: (1) the student's [ESL teacher/TVI] was knowledgeable about second language acquisition, and (2) the student's [ESL teacher/TVI] was knowledgeable about teaching students with visual impairments. With these two statements removed from the rating scale, the scale was reliable for both TVIs (22 items, $\alpha = 0.986$) and ESL teachers (22 items, $\alpha = 0.986$). The two statements were removed from the scale and were not used when calculating each participant's total score. Descriptive statistics of the perception of collaboration was first analyzed as a whole set with all of the participants who reported about a student who was an ELL+VI. Next, the perception of collaboration was analyzed descriptively by specific demographic information including by participant's role and the visual impairment of the student reported about.

The average total score for all participants was 71.95 out of a possible total score of 110

(SD = 27.624). Overall, participants averaged between *sometimes* (3) and *often* (4) for all four

domains of the collaboration rating scale with only a slight variance between domains. See Table

6. All statements within the domains averaged between *sometimes* (3) and *often* (4) with the

exception of the two statements within the investment domain. For the statement, "I had enough

time available to participate in collaboration," participants rated between *seldom* (2) and

sometimes (3). For the statement, "Collaboration took too much of my time," participants rated

between *never* and *seldom*. See Table 7 for the mean and standard deviation of the individual

statements within the collaboration rating scale for all participants.

Table 6.

Mean and Standard Deviation of Overall Domain within the Collaboration Rating Scale – All

Participants

Total Domain Average	TVIs and ESL Teachers
	M (SD)
Working Relationship	3.28 (1.501)
Collaboration Process	3.21 (1.467)
Investment	3.28 (1.322)
Benefits of Collaboration	3.23 (1.498)

Note: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always; One statement in the

investment domain was inverted and the inverted mean was used when calculating the total domain

average.

Table 7.

Mean and Standard Deviation of Individual Statements within the Collaboration Rating Scale –

All Participants

Response Options	TVIs and ESL Teachers
	M (SD)
Working Relationship	
A…trust one another.	3.41 (1.471)
B…approachable.	3.47 (1.527)
C…worked together collaboratively.	3.11 (1.503)
D…easy to share concerns with.	3.31 (1.529)
E…desire to understand student's VI.	3.20 (1.511)
F…incorporated suggestions…	3.20 (1.463)
Collaboration Process	
I…communicated effectively	3.27 (1.483)
J…delivered support, recommendations…	3.07 (1.445)
K…suggestions that were appropriate…	3.17 (1.450)
L…support that matched the needs…	3.20 (1.457)
M…provided helpful information.	3.29 (1.464)
N…accessible for collaboration.	3.26 (1.501)
Investment	
O…effective and production.	3.10 (1.358)
P…time available to participate…	2.71 (1.307)
Q…important.	3.38 (1.439)
R…too much of my time.*	4.18 (0.968)
S…implement recommended strategies.	3.06 (1.289)
T…recommend collaborating…	3.27 (1.418)
U…collaborating was positive.	3.26 (1.474)
Benefits of Collaboration	
V…benefitted from our collaboration.	3.37 (1.495)
W…build my capacity to implement…	3.08 (1.485)
X…increased my knowledge of strategies…	3.24 (1.514)

Note: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always; *Statement R was inverted to fit the

collaboration rating scale.

Collaborating about students who are blind. ESL teachers had a more positive

perception of collaboration than TVIs in the collaboration process and benefits of collaboration

domain when collaborating regarding a student who is blind. On average, TVI's rated the

statements within the collaboration process and benefits of collaboration domains between

seldom (2) and *sometimes* (3). On average, ESL teachers rated the statements within both domains between *sometimes* (3) and *often* (4). See Table 8 for the mean and standard deviation of the overall domains within the collaboration rating scale when collaborating regarding a student who is blind.

Table 8.

Mean and Standard Deviation of Overall Domain within the Collaboration Rating Scale

Total Domain Average	Students Who Are Blind			Students With Low Vision		
	TVIs	ESL teachers	TVIs and ESL Teachers	TVIs	ESL teachers	TVIs and ESL Teachers
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Working Relationship	3.12 (1.548)	3.54 (1.137)	3.23 (1.444)	3.45 (1.451)	3.06 (1.730)	3.32 (1.551)
Collaboration Process	2.80 (1.465)	3.52 (1.148)	3.01 (1.448)	3.35 (1.368)	3.33 (1.685)	3.36 (1.474)
Investment	3.03 (1.373)	3.33 (1.020)	3.16 (1.300)	3.46 (1.207)	3.21 (1.580)	3.37 (1.341)
Benefits of Collaboration	2.90 (1.622)	3.45 (1.064)	3.05 (1.502)	3.31 (1.330)	3.47 (1.785)	3.37 (1.493)

Note: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always; One statement in the investment domain was inverted and the inverted mean

was used when calculating the total domain average.

When looking at the individual statements within the collaboration process domain, TVIs on average rated all statements between *seldom* (2) and *sometimes* (3). ESL teachers on average rated all statements between *sometimes* (3) and *often* (4). When looking at the individual statements within the benefits of collaboration domain, both TVIs and ESL teachers rated that their student benefitted from collaboration *sometimes* (3) to *often* (4). The last two statements within the domain differed between ESL teachers and TVIs. The next two statements had participants rating whether collaboration (1) helped build their capacity to implement evidence-based strategies and promising practices and (2) increased their knowledge of strategies to help their student. For both statements, TVIs on average rated the statements between *seldom* (2) to *sometimes* (3). ESL teachers on average rated both statements between *sometimes* (3) to *often* (4). See Table 9 for the mean and standard deviation of the individual statements within the collaboration rating scale when collaborating regarding a student who is blind.

Collaborating about students with low vision. ESL teachers and TVIs had similar perceptions of collaboration across all domains when collaborating regarding a student with low vision. TVIs perceived collaboration only marginally more positive than ESL teachers in all but one domain, benefits of collaboration. On average, both TVIs and ESL teachers rated the statements within each domain between *sometimes* (3) and *often* (4). See Table 8 for the mean and standard deviation of the overall domains within the collaboration rating scale when collaborating regarding a student with low vision. Similarly to when looking at the overall domains, when looking at the individual statements within the different domains TVIs and ESL teachers rated individual items similarly with only marginal differences between the two. See Table 9 for the mean and standard deviation of the individual statements within the collaborating rating scale when collaborating regarding a student with low vision.

Table 9.

Mean and Standard Deviation of Individual Statements within the Collaboration Rating Scale

Response Options	Students Who Are Blind			Students With Low Vision		
	TVIs	ESL teachers	TVIs and ESL Teachers	TVIs	ESL teachers	TVIs and ESL Teachers
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Working Relationship						
A…trust one another.	3.17 (1.487)	3.75 (0.965)	3.33 (1.373)	3.61 (1.443)	3.20 (1.735)	3.47 (1.547)
B…approachable.	3.27 (1.552)	3.75 (1.055)	3.40 (1.432)	3.68 (1.509)	3.20 (1.765)	3.52 (1.603)
C…worked together collaboratively.	2.97 (1.520)	3.50 (1.243)	3.12 (1.452)	3.24 (1.478)	2.85 (1.694)	3.10 (1.552)
D…easy to share concerns with.	3.13 (1.592)	3.33 (1.231)	3.19 (1.486)	3.55 (1.446)	3.10 (1.774)	3.40 (1.567)
E…desire to understand student's VI.	3.07 (1.596)	3.42 (1.240)	3.17 (1.497)	3.34 (1.438)	3.00 (1.717)	3.22 (1.534)
F…incorporated suggestions…	3.10 (1.539)	3.50 (1.087)	3.21 (1.423)	3.29 (1.393)	3.00 (1.717)	3.19 (1.504)
Collaboration Process						
I…communicated effectively	2.90 (1.583)	3.58 (1.084)	3.10 (1.478)	3.41 (1.384)	3.40 (1.698)	3.40 (1.486)
J…delivered support, recommendations…	2.67 (1.539)	3.42 (1.240)	2.88 (1.485)	3.00 (1.290)	3.20 (1.642)	3.21 (1.411)
K…suggestions that were appropriate…	2.73 (1.165)	3.58 (1.165)	2.98 (1.440)	3.31 (1.327)	3.35 (1.694)	3.32 (1.454)
L…support that matched the needs…	2.73 (1.461)	3.42 (1.240)	2.93 (1.421)	3.47 (1.341)	3.30 (1.689)	3.41 (1.462)
M…provided helpful information.	2.87 (1.502)	3.67 (1.073)	3.10 (1.428)	3.47 (1.383)	3.35 (1.694)	3.43 (1.488)
N…accessible for collaboration.	2.90 (1.539)	3.50 (1.087)	3.07 (1.438)	3.42 (1.481)	3.35 (1.694)	3.39 (1.545)
Investment						
O…effective and production.	2.73 (1.437)	3.50 (1.193)	2.95 (1.361)	3.25 (1.228)	3.16 (1.608)	3.22 (1.357)
P…time available to participate…	2.33 (1.241)	3.17 (1.193)	2.57 (1.272)	2.89 (1.237)	2.68 (1.529)	2.82 (1.335)
Q…important.	3.13 (1.570)	3.83 (1.030)	3.33 (1.459)	3.56 (1.340)	3.16 (1.608)	3.42 (1.436)
R…too much of my time.*	4.30 (0.915)	3.83 (0.835)	4.17 (0.908)	4.25 (0.806)	4.05 (1.353)	4.18 (1.020)
S…implement recommended strategies.	2.70 (1.317)	3.50 (0.798)	2.93 (1.237)	3.22 (1.222)	3.05 (1.545)	3.16 (1.330)
T…recommend collaborating…	3.07 (1.596)	3.00 (0.778)	3.14 (1.407)	3.53 (1.276)	3.05 (1.682)	3.36 (1.432)
U…collaborating was positive.	3.00 (1.531)	2.50 (1.311)	3.02 (1.456)	3.50 (1.342)	3.32 (1.734)	3.44 (1.475)
Benefits of Collaboration						
V…benefitted from our collaboration.	3.03 (1.608)	3.55 (1.036)	3.17 (1.482)	3.54 (1.358)	3.47 (1.775)	3.52 (1.501)
W…build my capacity to implement…	2.77 (1.591)	3.45 (1.036)	2.95 (1.482)	3.06 (1.327)	3.42 (1.774)	3.19 (1.493)
X…increased my knowledge of strategies…	2.90 (1.668)	3.36 (1.120)	3.02 (1.541)	3.34 (1.305)	3.53 (1.806)	3.41 (1.486)

Note: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always; *Statement R was inverted to fit the collaboration rating scale

Frequency of Collaboration.

Collaborating with a TVI. On average, ESL teachers reported more frequent

collaboration with a TVI when the student was blind compared to when a student had low vision.

When ESL teachers collaborated with TVIs about a student who was blind the mean was

between bi-weekly and monthly (M = 4.50, SD = 2.541). When ESL teachers collaborated with

TVIs about a student with low vision the mean was a little more often than quarterly (M = 6.10,

SD = 3.093). See Table 10 for the frequency counts and percentages of the frequency of

collaboration between ESL teachers and TVIs.

Collaborating with an ESL Teacher. On average, TVIs frequency of collaboration was

very similar. TVIs collaborated regardless of if the student was low vision or blind. TVIs

collaborated with ESL teachers about a student who was blind the mean was between monthly

and quarterly (M = 5.47, SD = 2.849). Similarly, when TVIs collaborated with ESL teachers

about a student with low vision the mean was a little more often than monthly (M = 5.36, SD =

2.127). See Table 10 for the frequency counts and percentages of the frequency of collaboration

between TVIs and ESL teachers.

Table 10.

Frequency of Collaboration

Frequency*	Collaboration with TVI		Collaboration with ESL Teacher		Combined Collaboration	
	Low Vision n (%)	Blind n (%)	Low Vision n (%)	Blind n (%)	Low Vision n (%)	Blind n (%)
Daily (9)	1 (5)	0 (0)	0 (0)	0 (0)	1 (1.6)	0 (0)
2-3 times per week (8)	2 (10)	3 (25)	1 (2.8)	2 (6.7)	3 (4.9)	5 (11.9)
Weekly (7)	4 (20)	4 (33.3)	8 (22.2)	11 (36.7)	12 (19.7)	15 (35.7)
Bi-Weekly (6)	1 (5.0)	0 (0)	4 (11.1)	3 (10)	5 (8.2)	3 (7.1)
Monthly (5)	0 (0)	0 (0)	10 (27.8)	2 (6.7)	10 (16.4)	2 (4.8)
Quarterly (4)	2 (10)	2 (16.7)	3 (8.3)	1 (3.3)	5 (8.2)	3 (7.1)
Semesterly (3)	0 (0)	1 (8.3)	2 (5.6)	0 (0)	2 (3.3)	1 (2.4)
Yearly (2)	1 (5)	1 (8.3)	3 (8.3)	0 (0)	4 (6.6)	1 (2.4)
Never (1)	9 (45)	1 (8.3)	5 (13.9)	11 (36.7)	14 (23.0)	12 (28.6)

Note: Value in () indicates Likert scale value to aid in interpretation of M and SD values reported.

Research Question 1B: Correlation of Student's Visual Impairment with Perception and Frequency of Collaboration

A Chi Square Analysis was conducted to see if there was a statistically significant relationship between the perception and frequency of collaboration and a student's visual impairment.

Perception of Collaboration and Student's Visual Impairment

A statistically significant relationship was not found between a participant's perception of collaboration and the student's visual impairment χ^2 (47, N=96) = 47.774, p = .441. This means that TVI and ESL teachers' perception of collaboration was not correlated to whether a student is blind or has low vision.

Frequency of Collaboration and Student's Visual Impairment

A statistically significant relationship was not found between the frequency of collaboration and the student's visual impairment χ^2 (8, N=98) = 8.630, p = .374. This means that

TVI and ESL teachers' frequency of collaboration was not correlated to whether a student is

blind or has low vision.

Research Question 2: Correlation of Teacher and Student Factors with Perception and

Frequency of Collaboration

Descriptive Statistics

      Number of ELLs+VI Taught Across Career. One hundred and fifty-three participants

reported the number of ELLs+VI they taught across their career. This included both participants

who did and did not report about specific students in the survey. The mean number of students

who were ELLs+VI taught was between 6-15 students (SD = 3.363). The most common

participant experiences were never taught a student who was an ELL+VI ($n = 25$, 16.4%), had

taught 1-5 students who were ELLs+VI ($n = 60$, 39.2%), or had taught 6-10 students who were

ELLs+VI ($n = 22$, 14.4%). See Table 11 for the frequency counts and percentages of the number

of students who were ELLs+VI taught across a participant's career.

Table 11.

Frequency of Number of Students who were ELLs+VI Taught Across Career

Number of ELLs+VI Taught	Frequency (*n*)	Percent of Responses (%)
0	25	16.3
1-5	60	39.2
6-10	22	14.4
11-15	8	5.2
16-20	5	3.3
21-25	6	3.9
26-30	4	2.6
31-35	4	2.6
36-40	2	1.3
41-45	0	0
46-50	2	1.3
51 or more	15	9.8

Burnout. The Copenhagen Burnout Inventory was reliable for both TVIs (7 items; α = - 0.909) and ESL teachers (7 items; α = 0.821). As it was reliable for both TVIs and ESL teachers, the average score of the burnout scale was used for analysis, with 0 being a very low burnout score and 100 being very high. Seventy-one TVIs reported on their burnout level. TVIs had an average burnout score of 47.54 (SD = 22.08). Eighty-one ESL teachers reported on their burnout level. ESL teachers had an average burnout score of 51.85 (SD =18.74). Both TVIs and ESL teachers were more burnt out than the norming group from the Copenhagen Burnout Inventory – Work Related Burnout Scale.

Considering Leaving the Field. One hundred and fifty-two participants reported whether they were considering leaving the field. On average, participants *rarely* (2) to *sometimes* (3) considered leaving the field (M = 2.47, SD = 1.127).

Completion of Preparation Program. One hundred and fifty-one participants reported the year they completed either their TVI or ESL teacher preparation program. The mean year participants completed their training program in was 2011 (SD = 8.827). The majority of the participants (72.3%) completed their training program between 2008 and 2023.

Preparedness to Teach Students who are ELLs+VI Upon Completion of Training Program. ESL teachers perceived themselves as *moderately* to *well prepared* to teach students who were ELLs. In comparison, TVIs perceived themselves as *not* to *minimally* prepared. When asked on their preparedness to teach ELLs with low vision, both TVIs and ESL teachers perceived themselves as *not* to *minimally* prepared. TVIs only perceived themselves as marginally more prepared than ESL teachers to teach ELLs with low vision. Similarly, both TVIs and ESL teachers perceived themselves as *not* to *minimally* prepared to teach ELLs who were blind with TVIs perceiving themselves as marginally more prepared than ESL teachers.

Both TVIs and ESL teachers perceived themselves as less prepared to teach ELLs who are blind compared to teaching ELLs with low vision. See Table 12 for frequency and counts and percentages of participants' perceived preparedness to teach students who are ELLs+VI upon completion of their training program.

Current Preparedness to Teach Students who are ELLs+VI. ESL teachers perceived themselves as *moderately* to *well* prepared to teach students who were ELLs based on their current professional skills. ESL teachers only had a marginal increase in perceived preparedness from the completion of their teacher training program to their current preparedness. TVIs however perceived themselves to be more prepared to teach ELLs based on their current professional skills than they did upon completion of their training program. TVIs perceived themselves as *minimally* to *moderately* prepared to teach ELLs.

TVIs and ESL teachers perceived themselves to be more prepared to teach ELLs with low vision based on their current professional skills compared to when they completed their training program. Both TVIs and ESL teachers perceived themselves to be *minimally* to *moderately* prepared. While TVIs perceived themselves to be more prepared to teach ELLs who are blind, ESL teachers did not perceive a significant increase in their preparedness. TVIs perceived themselves to be minimally to moderately prepared to teach ELLs who are blind. ESL teachers however perceived themselves as *not* to *minimally* prepared to teach ELLs who are blind. This is not a significant increase in perceived preparedness compared to the perception of their preparedness after completing their training program. See Table 12 for frequency and counts and percentages of participants' perceived current preparedness to teach students who are ELLs+VI.

Table 12.

Mean and Standard Deviation of Teacher Preparedness

Preparedness Matrix Response Options	TVIs	ESL teachers	TVIs and ESL Teachers
	M (SD)	M (SD)	M (SD)
Teacher Preparedness Upon Completion of Training Program			
Upon completion of your teacher training program, how prepared did you feel in teaching students who are English language learners?	1.80 (0.894)	3.16 (0.831)	2.53 (1.088)
Upon completion of your teacher training program, how prepared did you feel in teaching students who have low vision and who are who are English language learners?	1.91 (0.913)	1.43 (0.631)	1.66 (0.809)
Upon completion of your teacher training program, how prepared did you feel in teaching students who are blind and who are English language learners?	1.70 (0.857)	1.16 (0.369)	1.41 (0.695)
Current Preparedness			
Thinking about your professional skills right now, how prepared did you feel in teaching students who are English language learners?	2.70 (0.768)	3.79 (0.493)	3.28 (0.836)
Thinking about your professional skills right now, how prepared did you feel in teaching students who have low vision and who are who are English language learners?	2.76 (0.770)	2.19 (0.792)	2.45 (0.830)
Thinking about your professional skills right now, how prepared did you feel in teaching students who are blind and who are English language learners?	2.53 (0.863)	1.49 (0.673)	1.97 (0.923)

Note. 1 = not prepared, 2 = minimally prepared, 3 = moderately prepared, 4 = well prepared

Inclusion of ELLs+VI Instruction in Training Program. One hundred and fifty-one

participants reported whether their training program included instruction on ELLs+VI. The

majority (*n* = 138, 91.4%) of participants did not receive instruction on ELLs+VI. A minority (*n*

= 13, 8.6%) of participants who received instruction were all TVIs. No ESL teachers reported

instruction on ELLs+VI in their training program.

Professional Development (PD) Opportunities. One hundred fifty-three participants

reported what PD opportunities they had related to ELLs+VI. A majority of participants (*n* =

102, 66.7%) had no PD. Of the participants who had the opportunity for PD related to ELLs+VI,

the most frequent formats were webinars (*n* = 33, 21.6%) or workshops (*n* = 25, 16.3%). The

least frequent formats for PD were in-service training offered by school districts (*n* = 18, 11.8%),

conferences (*n* = 13, 8.5%), and a postgraduate education course (*n* = 11, 7.2%).

Format of Contact. Both TVIs and ESL teachers most frequently used face-to-face

communication or email when contacting each other during the collaborative process. TVIs used

a more diverse range of formats of contact to collaborate with ESL teachers than ESL teachers

used to collaborate with TVIs. See Table 13 for frequency counts and percentages of the formats

of contact used by participants during collaboration.

Table 13.

Frequency of Format of Contact

Format of Contact	ESL Teachers Contact with TVIs	TVIs Contact with ESL Teachers
	n (%)	*n* (%)
Face-to-face contact	20 (13.1)	47 (30.7)
Email	12 (7.8)	40 (26.1)
Phone	2 (1.3)	12 (7.8)
Written feedback	1 (0.7)	3 (2.0)
Follow-up sessions	1 (0.7)	4 (2.6)
Stopping by the classroom	7 (4.6)	24 (15.7)
Modeling	0 (0)	9 (5.9)
Co-teaching	2 (1.3)	3 (2.0)
Conducting observations	1 (0.7)	16 (10.5)
Supporting implementation	1 (0.7)	14 (9.2)
Follow-up observations	0 (0)	8 (5.2)
None of the above	10 (6.5)	13 (8.5)

Student's Additional Disabilities. Forty students (38.1%) were reported as having

additional disability/ies. Sixty-five students (61.9%) were reported as not having an additional

disability. Out of the forty students with an additional disability, the most frequent additional

disability a student was reported having was other health impairment (*n* = 14, 9.2%) and specific

learning disability (*n* = 10, 8.5%). Four students (2.6%) were reported with a traumatic brain

injury. Five students (3.3%) were reported as having autism spectrum disorder. One student

(0.7%) was reported as having an orthopedic impairment. Four students (3.6%) were reported as

having a developmental disability. Three students (2.0%) were reported as having a speech or

language impairment. Three students (2.0%) were reported as deaf. Four students (2.6%) were

reported as having a hearing impairment. Six student (3.9%) were reported for having an

intellectual disability. One student (0.7%) was reported as having an emotional/behavioral

disability.

Student's Language Acquisition Stage. The majority of students were reported as being in either the early production ($n = 26$, 24.8%) or speech emergence ($n = 26$, 24.8%) stage. Fourteen (13.3%) students were reported as being in the pre-production stage. Twenty-one (20.0%) students were reported as being in the intermediate fluency stage. Fourteen (13.3%) students were reported as being in the advanced fluency stage. Four (3.8%) students' language acquisition stage was reported as unknown.

Student Setting. The majority ($n = 73$, 70.9%) of the students reported about were in an inclusion setting where a majority of their classmates are peers without disabilities. A small minority of students were in a self-contained classroom ($n = 18$, 17.5%) or a specialized school ($n = 12$, 11.7%).

Student's Primary Communication Modality. The majority ($n = 92$, 86.8%) of the students reported about used oral/spoken language as their primary communication modality. Six (5.7%) students were reported as having no functional communication system (neither spoken, signed, nor tactile/visual). Three (2.8%) students were reported as having manual language (e.g., sign language, gestures, or cues) as their primary communication modality. Three (2.8%) students were reported as having visual or tactile symbols/augmentative or alternative communication (AAC) system as their primary communication modality.

Frequency of Student's Services from a TVI or ESL Teacher.

The mean of the frequency of services received by a student who was an ELL+VI from a TVI was between 2-3 times per week and weekly (M = 5.32, SD = 2.133). Students most frequently received services from a TVI daily ($n = 47$, 44.8%). Fifteen students (14.3%) did not receive services from a TVI. The mean of the frequency of services received by a student who was an ELL+VI from an ESL teacher was a little less than weekly (M = 4.94, SD = 2.565).

Students most frequently received services from an ESL teacher daily ($n = 52$, 50%). Twenty-

seven students (26.0%) did not receive services from an ESL teacher. See Table 14 for the

frequency counts and percentages of the services from a TVI or ESL teacher received by

students.

Table 14.

Frequency of Student's Services

Frequency of Services	Services from a TVI n (%)	Services from an ESL Teacher n (%)
Daily (7)	47 (44.8)	52 (50.0)
2-3 times per week (6)	19 (18.1)	10 (9.6)
Weekly (5)	13 (12.4)	9 (8.7)
Bi-weekly (4)	4 (3.8)	2 (1.9)
Monthly (3)	6 (5.7)	2 (1.9)
Quarterly (2)	1 (1.0)	2 (1.0)
No services (1)	15 (14.3)	27 (26.0)

Note: Value in () indicates Likert scale value to aid in interpretation of M and SD values

reported.

Correlation

Three sets of correlations were calculated with the outcome variable being the perception

of collaboration and different variables of interest per set of correlation.

Correlation 1: Perception and Frequency of Collaboration and Student Factors. See

Table 15 for a full list of correlations between the variables of interest.

Perception of Collaboration. A positive correlation was found between perception of

collaboration and: frequency of collaboration r (96) 0.731, $p = <.001$ and frequency of services

from an ESL teacher r (96) 0.298, $p = 0.003$. A negative correlation was found between

perception of collaboration and: specific learning disability r (70) -0.282, $p = 0.018$; other health

impairment r (95) -0.284, $p = 0.005$; speech or language impairment r (96) -0.244, $p = 0.017$; and

setting r (96) -0.289, $p = 0.004$. There was no statistically significant correlation found between:

autism spectrum disorder, emotional/behavioral disorder, deafness, hearing impairment, orthopedic impairment, intellectual disability, traumatic brain injury, developmental disability, language acquisition stage, primary communication modality, and frequency of service from a TVI.

Frequency of Collaboration. A negative correlation was found between frequency of collaboration and: specific learning disability r (71) 0.241, p = 0.043; other health impairment r (97) 0.221, p = 0.030; frequency of services from a TVI r (98) -0.265, p = 0.008; and frequency of services from an ESL teacher r (98) -0.317, p = 0.001. There was no statistically significant correlation found between: autism spectrum disorder, emotional/behavioral disorder, speech or language impairment, deafness, hearing impairment, orthopedic impairment, intellectual disability, traumatic brain injury, developmental disability, language acquisition stage, setting, and primary communication modality.

Table 15.

Correlation Matrix of Perception and Frequency of Collaboration and Student Information

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1: Perception of Collaboration																		
2: Frequency of Collaboration	0.731***																	
3: Specific Learning Disability	-0.282*	-0.241*																
4: Other Health Impairment	-0.284**	-0.221*	0.256**															
5: Autism Spectrum Disorder	-0.011	0.003	-0.050	0.069														
6: Emotional/ Behavioral Disorder	0.037	0.094	c	-0.026	-0.015													
7: Speech or Language Impairment	-0.244*	-0.197	0.144	-0.045	-0.026	-0.012												
8: Deafness	0.048	0.030	-0.050	0.282***	0.239***	-0.012	-0.020											
9: Hearing Impairment	-0.053	0.035	-0.040	0.232**	-0.030	-0.013	-0.023	-0.023										
10: Orthopedic Impairment	-0.142	-0.139	-0.028	0.255**	-0.015	-0.007	-0.011	-0.011	-0.013									
11: Intellectual Disability	-0.032	0.027	0.111	0.169*	0.152	-0.016	-0.029	-0.029	-0.033	0.401***								
12: Traumatic Brain Injury	-0.038	-0.005	-0.040	-0.052	-0.030	-0.013	-0.023	-0.023	-0.027	-0.013	-0.033							
13: Developmental Disability	0.133	0.173	c	-0.052	0.200*	-0.013	-0.023	-0.023	-0.027	-0.013	0.178*	-0.027						
14: Language Acquisition Stage	-0.037	-0.121	-0.043	-0.035	-0.175	0.067	-0.008	0.034	-0.010	0.211*	0.139	-0.083	-0.193*					
15: Setting	-0.289**	-0.180	0.049	0.257**	0.129	0.229*	-0.019	0.065	0.173	0.085	0.033	-0.046	0.027	0.076				
16: Primary Communication Modality	-0.110	-0.118	-0.110	0.308**	0.331***	-0.030	0.021	0.166	0.256***	0.344***	0.239*	-0.060	0.130	0.011	0.294**			
17: Frequency of Services from a TVI	0.102	-0.265**	-0.294**	-0.163	0.071	0.077	-0.349***	-0.026	0.017	-0.015	-0.134	0.110	0.063	-0.001	0.171	-0.089		
18: Frequency of Services from an ESL Teacher	0.298**	-0.317**	0.119	-0.157	-0.136	0.080	0.139	0.004	-0.113	-0.152	-0.091	0.083	-0.054	-0.112	-0.399***	-0.354***	-0.154	

Note: ***Statistical Significance at the 0.001 level, **Statistical Significance at the 0.01 level *Statistical Significance at the 0.05 level, c Could not be computed because at least one of the variables is constant.

Correlation 2: Perception and Frequency of Collaboration and Teacher Factors. See Table 16 for a full list of correlations between the variables of interest.

Perception of Collaboration. A positive correlation was found between perception of collaboration and: preparedness to teach students who are ELLs upon completion of training program r (96) 0.204, p = 0.046; preparedness to teach students who are ELLs with low vision upon completion of training program r (96) 0.206, p = 0.044; current preparedness to teach students who are ELLs r (96) 0.345, p = <0.001; and current preparedness to teach students who are ELLs that are blind r (96) 0.204, p = 0.046.

There was no statistically significant correlation found between: the number of ELLs+VI taught across career, burnout, year of completion of preparation program, preparedness to teach ELLs who are blind upon completion of training program, current preparedness to teach ELLs with low vision, and inclusion of ELLs+VI instruction in training program. There was no statistically significant correlation found between forms of professional development.

Frequency of Collaboration. There were no statistically significant correlations found between frequency of collaboration and the other covariates.

Additional Correlations. A positive correlation was found between the burnout experienced by participants and the participant considering leaving the field r (152) 0.739, p = <0.001. A positive correlation was found between a participant's current preparedness to teach students who are an ELL who are blind and: participating in workshops r (151) 0.206, p = 0.011; webinars r (151) 0.363, p = <0.001; conferences r (151) 0.163, p = 0.046; and postgraduate education courses r (151) 0.202, p = 0.013 as part of their professional development. A positive correlation was found between a participant's current preparedness to teach students who are an

ELL with low vision and webinars r (151) 0.235 p = 0.004 as part of their professional

development.

Table 16.

Correlation Matrix of Perception and Frequency of Collaboration, Teacher Factors, and Perceived Preparedness

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1: Perception of Collaboration																			
2: Frequency of Collaboration	0.731***																		
3: Inclusion of ELLs+VI Instruction	0.076	0.123																	
4: Year of Completion of Preparation Program	-0.065	-0.100	0.126																
5: Preparedness to Teach Students who are ELLs – Completion of Training Program	0.204*	0.096	-0.019	0.096															
6: Preparedness to Teach Students who are ELLs with Low Vision – Completion of Training Program	0.206*	0.019	0.395***	0.094	0.194*														
7: Preparedness to Teach Students who are ELLs who are Blind – Completion of Training Programs	0.181	0.053	0.533***	0.063	0.178*	0.763***													
8: PD - Workshop	0.115	0.080	0.117	-0.164	-0.103	0.146	0.173*												
9: PD - Webinar	0.037	0.095	0.066	0.019	-0.214**	0.047	0.149	0.456***											
10: PD - Conference	-0.115	-0.190	0.158	-0.110	-0.041	-0.045	0.023	0.499***	0.353***										
11: PD – In-Service Training Offered by School District	0.128	0.097	0.251**	-0.034	-0.067	-0.020	0.018	0.497***	0.252**	0.325**									
12: PD – Postgraduate Education Course	0.087	0.043	0.368***	0.009	0.098	0.183*	0.238**	0.356***	0.100	0.278***	0.448***								
13: PD - None	-0.097	-0.129	-0.342***	0.096	0.156	-0.208*	-0.344***	-0.625***	-0.742***	-0.431***	-0.516***	-0.394***							
14: Current Preparedness to Teach Students who are ELLs	0.345***	0.181	-0.190*	-0.056	0.617***	-0.061	-0.122	-0.067	-0.162*	-0.048	-0.101	-0.004	0.186*						
15: Current Preparedness to Teach Students who are ELLs with Low Vision	0.182	0.126	0.232**	-0.180*	-0.074	0.481***	0.370***	0.124	0.235**	0.061	0.022	0.094	-0.272***	0.112					
16: Current Preparedness to Teach Students who are ELLs who are Blind	0.204*	0.151	0.317***	-0.081	-0.158	0.425***	0.578***	0.206*	0.363***	0.163*	0.122	0.202*	-0.420***	-0.068	0.668***				
17: Number of Students who are ELL+VI Taught Across Career	-0.029	0.024	0.140	-0.224**	-0.268**	0.123	0.137	0.283***	0.342***	0.233**	0.171*	0.113	-0.303***	-0.156	0.302***	0.354***			
18: Burnout	-0.050	-0.006	-0.091	0.087	0.040	-0.117	-0.161*	-0.011	0.009	0.033	-0.014	0.030	0.065	0.025	-0.171*	-0.136	-0.006		
19: Considering Leaving the Field	0.015	-0.013	-0.148	-0.013	0.081	-0.036	-0.066	-0.013	-0.009	0.039	-0.064	-0.050	0.058	0.064	-0.125	-0.001	-0.011	0.739***	

Note: ***Statistical Significance at the 0.001 level, **Statistical Significance at the 0.01 level *Statistical Significance at the 0.05 level.

Correlation 3: Perception and Frequency of Collaboration and Format of Contact During Collaboration. See Table 17 for a full list of correlations between the variables of interest.

Perception of Collaboration. A positive correlation was found between perception of collaboration and: face-to-face contact r (96) 0.582, p = <0.001; email r (96) 0.468, p = <0.001; stopping by the classroom r (96) 0.285, p = 0.005; modeling r (96) 0.205, p = 0.045; co-teaching r (96) 0.222, p = 0.030; and supporting implementation r (96) 0.217, p = 0.034. A negative correlation was found between perception of collaboration and no form of contact r (96) -0.709, p = <.001. There was no statistically significant correlation found between: phone, written feedback, follow-up sessions, conducting observations, and follow-up observations.

Frequency of Collaboration. A positive correlation was found between frequency of collaboration and: face-to-face contact r (98) 0.727, p = <0.001; email r (98) 0.453, p = <0.001; stopping by the classroom r (98) 0.308, p = 0.002; modeling r (98) 0.230, p = 0.023; and co-teaching r (98) 0.270, p = 0.007. A negative correlation was found between frequency of collaboration and no form of contact r (98) -0.747, p = <.001. There was no statistically significant correlation found between: phone, written feedback, follow-up sessions, conducting observations, supporting implementation, and follow-up observations.

Table 17.

Correlation Matrix of Perception and Frequency of Collaboration and Format of Contact During Collaboration

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1: Perception of Collaboration														
2: Frequency of Collaboration	0.731***													
3: Face-to-Face Contact	0.582***	0.727***												
4: Email	0.468***	0.453***	0.618***											
5: Phone	0.180	0.192	0.314***	0.299*										
6: Written Feedback	0.080	0.015	0.103	0.142	0.090									
7: Follow-Up Sessions	0.113	0.039	0.134	0.256**	0.197*	0.431***								
8: Stopping by the Classroom	0.285**	0.308**	0.506***	0.668***	0.348***	0.223**	0.273***							
9: Modeling	0.205*	0.230*	0.283***	0.290***	0.113	0.133	0.110	0.289***						
10: Co-Teaching	0.222*	0.270**	0.208***	0.256**	0.197*	-0.030	0.173	0.365***	0.267***					
11: Conducting Observations	0.167	0.149	0.359***	0.493***	0.321***	0.203*	0.169*	0.650***	0.354***	0.286***				
12: Supporting Implementation	0.217*	0.191	0.329***	0.367***	0.277***	-0.054	0.063	0.435***	0.478***	0.434***	0.373***			
13: Follow-Up Observations	0.099	0.064	0.266***	0.327***	0.333***	0.146	0.287***	0.466***	0.316***	0.287***	0.571***	0.416***		
14: No Form of Contact	-0.709***	-0.747***	-0.371***	-0.302***	-0.133	-0.069	-0.077	-0.212**	-0.105	-0.077	-0.149	-0.139	-0.099	

Note: ***Statistical Significance at the 0.001 level, **Statistical Significance at the 0.01 level *Statistical Significance at the 0.05 level.

Discussion

Collaboration between ESL teachers and TVIs has been identified as a need when working with students who are ELLs+VI (Guinan, 1997; Conroy et al., 2006). This collaboration is crucial as it can help TVIs and ESL teachers identify and address the needs of students who are ELLs+VI more effectively. By identifying and addressing student needs through collaboration, educators can improve student success (Darling-Hammond & Cook-Harvey, 2018). For collaboration to be successful a variety of factors need to be present. This includes respect, trust, and understanding between collaborators as well as the perception of collaborative members as reliable and competent (Mattessich & Johnson, 2018). With this in mind, the perception of collaboration can be influential on the success of said collaboration (Mattessich & Johnson, 2018). Although there is an identified need for collaboration, there has been very little research on the collaboration process between TVIs and ESL teachers.

This study's purpose was to answer three research questions. Findings indicate that, on average, ESL teachers and TVIs are collaborating between monthly and quarterly. ESL teachers and TVIs had a neutral perception of collaboration often rating aspects of collaboration between *sometimes* and *often*. Furthermore, findings indicate that a student's visual impairment (e.g., low vision, blind) did not influence the perception nor the frequency of collaboration between teachers. The more teachers collaborated with each other the more positively they perceived their collaborative partnership. Moreover, the more prepared TVIs and ESL teachers perceived themselves to teach students who are ELL and students who are ELL+VI the more positively they perceived their collaborative partnership. Based on the results of this study, there are several implications for teacher preparation programs who are preparing future TVIs and ESL teachers and implications for the professional practice of TVIs and ESL teachers.

Implications for Teacher Preparation Programs

Inclusion of ELL+VI Instruction in Training Program

This study found that there were statistically significant correlations between perception of collaboration and the following teacher factors: preparedness to teach students who are ELLs and ELLs with low vision upon completion of training program and current preparedness to teach students who are ELLs and ELLs who are blind. All four of these factors were positively correlated to participants receiving instruction on students who are ELL+VI during a teacher's training program. By including instruction in students who are ELL+VI in both TVI and ESL teacher training programs, a teacher's perceived preparedness and current preparedness to teach students who are ELL+VI may be increased. This in turn would allow for a more positive perception of collaboration. Although there is limited literature to draw from, training programs should incorporate this content in their programs.

Preparing Teachers to Teach English Language Learners (ELLs)

One factor in successful collaboration is the perception of the collaborative partner as competent (Mattessich & Johnson, 2018). When both the TVI and ESL teacher have a strong, shared professional knowledge on teaching students who are ELLs, each party may perceive each other as more competent. This positive view of each other's competencies can improve the overall perception of collaboration. By preparing teacher candidates to teach students who are ELLs, preparation programs are also creating candidates who may be perceived as more competent during the collaborative process. This may create more positive collaborative experiences when collaborating about a student who is an ELL+VI.

This study also found a positive correlation between teacher's perceived preparedness to teach students who are ELLs and students who are ELLs+VI upon completion of their training

program. There is little literature on teaching students who are ELLs+VI that can be used to train teachers to work with them (Price, 2022; Correa-Torres & Durando, 2011). However, teacher preparation programs may be able to improve teacher candidates' preparedness to teach students who are ELLs+VI by teaching ELL pedagogy. The literature used to prepare teachers, particularly TVIs, does not have be specific to students who are ELLs+VI. Preparing teacher candidates to teach ELLs in general may improve their preparedness to teach students who are ELLs+VI.

Preparing Teachers to Collaborate Regarding ELLs+VI with Additional Disabilities

Both TVIs and ESL teachers need to be prepared to collaborate regarding students who are ELLs+VI with additional disabilities. TVIs and ESL teachers may have a student who is an ELL+VI with an additional disability on their caseload or in their classroom. The majority of students with a VI have an additional disability and are being served under a different primary disability label (Schles, 2021; Schles et al., 2021). The findings of this study indicate that the presence of additional disabilities negatively impacts the perception and frequency of collaboration. This may be due to a lack of training. A lack of training has previously been identified as a barrier when teaching students with VI with additional disabilities (Grenier et al., 2023). Teacher preparation programs need to train both TVIs and ESL teachers to work with and collaborate regarding students with additional disabilities who may also be an ELL. This may include training teacher candidates on how to co-create individualized education plans and using consultations as a form of collaboration (Kangas, 2018).

Implications for Professional Practice

Administrator Support of Teacher Collaboration

The more frequently teachers were able to collaborate, the more positively they perceived the collaboration that occurred. In order for TVIs and ESL teachers to collaborate frequently, there needs to be enough time set aside for them to do so. Earlier studies found that teachers identified extra time for planning and collaboration as a support needed when working with students who are ELLs+VI (Conroy et al., 2006). The results of our study indicate that TVIs and ESL teachers are still in need of dedicated time for collaboration. Both TVIs and ESL teachers reported that they *seldom* to *sometimes* had time for collaboration. Administrators play a key role when it comes to creating time for teachers to collaborate. Teachers may have limited control over their schedule requiring them to look for administrator support in creating the time needed to collaborate (Conroy et al., 2006; Santoli et al., 2008; Barnett & Monda-Amaya, 1998). Both district and school administrators' support is needed to create dedicated time for collaboration between TVIs and ESL teachers.

Administrators also play a key role in fostering an environment that supports collaboration between teachers (Khasawneh et al., 2023). A favorable environment for collaboration can be an influential factor in the success of collaboration (Mattessich & Johnson, 2018). Administrators may achieve this by: providing consistent opportunities for collaboration to occur, involving educators in the process of making decisions, participating in moderating collaboration, and participating in setting goals for collaboration (Meyer et al., 2022). Administrators can support collaboration between TVIs and ESL teachers by actively shaping an environment that is supportive of their collaboration.

Reducing Burnout

This study found that both ESL teachers and TVIs were more burnt out than other human service professionals. A 2022 study of burnout in TVIs found a similar level of burnout (Agnes,

2022). Although increasing attention has been brought to the burnout crisis in teachers within the past two years (e.g. Rizvic, 2023; Bedir, 2023), the results of our study aligned with prior results. Although burnout was not found to be statistically significant to the perception and frequency of collaboration, the level of burnout experienced by both types of educators is cause for concern. Burnout is a contributing factor to teachers leaving the field (Madigan & Kim, 2021). The education system is currently facing a shortage of both TVIs and ESL teachers (Summers & Arnold, 2006; Delarosa, 2022). The burnout experienced by TVIs and ESL teachers may be a contributing factor to this. Steps need to be taken to reduce the burnout experienced by these educators.

Implications for Both Professional Practice and Teacher Preparation Programs

Preparing Current Teachers and Teacher Candidates to Collaborate

The use of formal and informal communication as well as frequent and open communication may influence the success of collaboration and thus its perception (Mattessich & Johnson, 2018). This is reflected in the results of this study. When teachers used a variety of forms of contact to communicate during collaboration, the more positively they perceived the collaboration and the more frequently they collaborated. Communication has been identified as a need when building strong collaborative relationships between educators (Gee & Zebehazy, 2020).

Teacher preparation programs can prepare teachers to collaborate by teaching them different forms of contact they can use to communicate and work with their collaborative partners. Current teachers are often provided very few professional development opportunities related to collaborative practices (Vintan & Gallagher, 2019). School districts can support current teachers by providing professional development opportunities centered around how to

successfully collaborate. This may include teaching both current teachers and teacher candidates how to implement collaborative practices like stopping by the classroom, modeling, co-teaching, and supporting implementation (e.g., setting and understanding shared objectives, open and frequent communication, etc.; Khasawneh et al., 2023).

Limitations

Several limitations should be considered with the findings of this study. This study was the first of its kind and consisted of a relatively small sample of 153 participants who represented 72 TVIs and 81 ESL teachers. Generalizing the results of this study to be representative of all collaborative experiences of TVIs and ESL teachers should be done with caution. Additionally, the reported information was one-sided as TVIs and ESL teachers were not matched pairs. This means that collaborative partnerships could not be examined as a whole as only one half of the relationship was reported on. An additional limitation was not asking what state a respondent worked in. Different states have different requirements related to certification. For example, Florida requires exceptional student education teachers (e.g., TVIs, special education teachers, etc.) whose instructional load involves teaching reading (e.g., braille instruction) are required to have an ESL endorsement. This means that respondent TVIs in Florida would also have an ESL endorsement. This requirement may be influential on variables in a way that is not representative of nationwide norms. Participants were recruited for this study from every state, however the study did not ask what state the participant served in and as such cannot say definitively that the results are representative of the entire United States.

Implications for Future Research

To ensure that both populations are being accurately represented across the country, a replication of this study would be beneficial. Additionally, the findings from this study about the

perception of collaboration by TVIs and ESL teachers could be enriched through the completion of additional studies. Conducting a dyadic data analysis pairing up ESL teachers and TVIs would allow for the collaborative relationship between the two to be directly analyzed and understood. This could provide further insight into how one of the collaborative partner's responses and/or actions impact the other collaborative partner and the collaborative partnership as a whole.

Implications for Practice

Collaboration between ESL teachers and TVIs is needed when educating students who are ELL+VI. Teacher preparation programs play an important role in shaping educators that will practice quality and frequent collaboration with others. To achieve this, preparation programs can incorporate instruction on how to collaborate including the different formats of collaborative practices (e.g., face-to-face contact, co-teaching, modeling, etc.). Preparation programs should also include instruction on students who are ELL+VI in their program as well as how to support students who are ELL+VI with additional disabilities. To supplement the limited literature on teaching students who are ELLs+VI, preparation programs can prepare candidates on the evidence-based practices for teaching students who are ELLs. Just as teacher candidates may benefit from instruction on how to collaborate with other teachers and specialist, current teachers may also benefit from professional development opportunities related to collaboration. In addition to providing professional development opportunities, administrators can support collaborative practices between TVIs and ESL teachers by creating time for them to collaborate. Lastly, TVIs and ESL teachers are being impacted by burnout that may be contributing to both the TVI and ESL teacher shortages in the United States. Districts need to work towards reducing the burnout experienced by both TVIs and ESL teachers.

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