

2021

## Supporting the Teaching of Executive Functioning Skills Using Social Cognitive Theory in Arts Classrooms

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# Walden University

College of Education

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Kathleen Adolt-Silva

has been found to be complete and satisfactory in all respects,  
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the review committee have been made.

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Walden University

2021

Abstract

Supporting the Teaching of Executive Functioning Skills

Using Social Cognitive Theory in Arts Classrooms

by

Kathleen Adolt-Silva

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

February 202

## Abstract

Many arts educators in Pennsylvania public charter schools do not teach executive functioning (EF) skills to students with learning disabilities (LDs) and attention deficit hyperactivity disorder (ADHD). The purpose of this study was to investigate how these art teachers describe their own EF instructional practices and what support they need to improve those practices. The conceptual framework that grounded this study was Bandura's social cognitive theory, which asserts that learning occurs in a social context with a reciprocal relationship between students, their teachers, and the environment. Research questions were used to explore art teachers' perceptions of teaching EF skills and what is needed to support EF skills instruction for students with LD or ADHD in the arts classroom. A basic qualitative research design was used to collect semistructured interview data from eight arts educators from Pennsylvanian arts-based public charter schools. Each participant held a bachelor's degree in arts education and taught at various grade levels, elementary through secondary. Data were analyzed using open and a priori coding as well as thematic analysis. Findings indicated that arts teachers wanted no additional special education training. Rather, they desired training in relational methods to merge academic pedagogy with individually motivated artistic pedagogy to teach EF skills within the arts classroom. Guided by the findings, a 3-day practice-based professional development program was created. This study contributes to positive social change by improving arts educators' instructional practice. This may result in improved student EF skills and increased access to learning for students with LD and ADHD in arts classrooms as a part of their well-rounded education.

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## Dedication

I dedicate this work to my mother-in-law, Dr. Willetta Wyatt Silva, who by her tireless advocacy and research, introduced legislature in Pennsylvania in 1969 that permitted students with learning disabilities to be educated and included in the general education classroom, and to provide funding for teachers to learn more about learning disabilities.

## Acknowledgments

Thanks to Dr. Shoemaker, Dr. Desoto, and Dr. Wells for all their support and expertise. Thanks go out to my parents for being my eternally supportive cheerleaders and for never second-guessing my goals. Thanks also to my loving husband John, who became chief cook and bottle washer as I labored over the laptop, and who pretended to be interested when I regaled him with my latest findings. I want to thank Shannon for reminding me that I always have someone there to support me when I need it most, and for showing that you can't love someone else until you love yourself. Thank you to Ryan, who reminds me not to take life so seriously, and who gives me unconditional love. To Erin, thank you for listening to me when I needed to rant, for pushing me when I was procrastinating, and for reminding me daily the importance of the work we do. Thanks also go out to my fur-babies, Abbott and Costello, who sat with me for 4 years on the sofa and gave me their warmth and support through this journey.

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## Section 1: The Problem

Educational institutions in the United States face challenges involved with the Every Student Succeeds Act (ESSA), the 2015 reauthorization of the Elementary and Secondary Education Act, wherein a high quality well-rounded education for all students is emphasized rather than the historical focus on only math, English language Arts, and science. Regulations in the ESSA are written to encourage schools to use classes in the arts as part of the Title 1 plans for schoolwide improvement and targeted assistance programs and emphasized flexibility to include arts learning as part of a well-rounded education. Regulations in the ESSA encourage schools to look beyond which classes are traditionally considered essential to increase achievement of all students, including those students with special needs. Arts classes in public schools are now a part of a high-quality well-rounded education for all students.

Many states are earmarking Title II funds to be used to support improvements in teacher clinical experiences, coursework that encompasses pedagogy for the inclusion of all students, and ongoing high quality professional development to maintain the high quality education available to all students .When schools and districts are determining where to best use the funds set aside for educator training to meet the goals of ESSA, the focus should be on methods and trainings that will produce effective results for greater achievement for all students. A focus on the acquisition and improvement of executive functioning (EF) skills for all students would create positive changes in both the short and long term educational experience of the student, and would be an effective use of ESSA

funds for training and professional development for all educators in all grade levels.

### **The Local Problem**

This project study addressed the problem that many visual arts, music, theatre, and dance educators in arts-based charter schools in Pennsylvania are not teaching EF skills to students with LD and ADHD while in the arts classes. In school years 2017-2018 and 2018-2019 in an arts-based charter school in Pennsylvania, visual arts, music, theatre, and dance educators reported to their administrators and special education teachers that they were routinely and continuously experiencing difficulty teaching EF to students with LD and ADHD in the classroom. The difficulties reported in the arts classrooms involved the demonstration of deficits in EF skills particularly with students with LD and ADHD. These deficits affected the progress students and their peers in the arts curriculum. EF skills are a set of higher-order cognitive processes involved in goal-directed behavior, flexibility and adaptive behavior, and the regulation of cognition and behavior and are often grouped with the larger descriptor of social emotional learning (SEL) (Jones, Bailey, Brush, & Kahn, 2018; Roebbers, 2017; Stockall, 2017). Some EF skills that specifically impact the arts classroom are planning, inhibition, working memory, attention, self-monitoring, initiation, and self-regulation. (Elliott, Davies, Frey, Gresham, & Cooper, 2018; Zelazo, 2015; Zelazo, Blair, & Willoughby, 2017).

### **Gap in Practice**

The gap in practice addressed in this study is that EF skills are often not taught to students with LD and ADHD within the arts classroom. Education administrators in the

state of Pennsylvania determined that instruction of EF skills in schools is lacking (Pennsylvania Department of Education, 2020a) and developed the Career Ready Program to address this problem. The Social Emotional Learning in the Arts Toolkit was released as a set of SEL training resources directed to teachers of math, English language arts, science, and history (Pennsylvania Department of Education, 2020a) However, there is a lack of embedded SEL training within public school music and arts classrooms (Varner, 2020).

In August 2020, the Pennsylvania Department of Education along with the PA Arts Ed Leadership Coalition, Pennsylvania Music Educators Association (PMEA), Pennsylvania Arts Education Association (PAEA), Pennsylvania Thespians Educational Theatre Association, Pennsylvania Dance Education Organization (PADEO), and the Media Arts Coalition of Educators (MACE) recognized that the responsibility for the instruction of EF skills falls on all educators, not just the academic subject teachers. With the creation of the Social Emotional Learning in the Music Classroom Toolkit, Pennsylvania educational leaders showed efforts to start to close this gap in practice but did not provide or explicitly explain how arts educators should initiate these changes or make them workable in their arts classrooms across Pennsylvania.

### **Problem in the Broader Profession**

In the broader arts education profession potential arts educators are not routinely required to take courses that delve further into the specific methodologies of teaching students with LD and ADHD in the arts classroom. Kent and Giles (2016) found that

both potential general and arts educators in teacher preparation programs across the United States are commonly required to take only one introductory special education course during the undergraduate course requirements for licensure, which was not enough to develop skills needed to work effectively with students with special needs in the general education or arts classroom. Blackwell, Sheppard, Lehr, and Huang (2017) said that most teacher preparation programs in the United States require preservice teachers to complete one course about students with disabilities, but these are usually survey courses that explain disability categories, a short history of education of students with special needs, and a review of recent laws. Arts educators are graduating into the work force without having been taught or modelled the specific methodologies and pedagogy targeted towards working with students with LD and ADHD.

In New Jersey, the groups Arts Ed NJ and SEL4NJ recognized that arts educators and school administrators need to work together to bring the instruction of EF skills into the arts classroom and arts curriculum in a formal structured basis. By integrating instruction of EF skills into the arts curriculum, educators in New Jersey changed the traditional practice of adding the arts to an EF instruction program and instead added EF instruction to the arts classroom. A gap exists in many schools between current research findings and recommendations about how children learn and the reality of occurs in the teaching of EF skills specific to the arts classrooms. Cantor, Osher, Berg, Steyer, and Rose (2019) in their study of multiple theories of how children develop, found that a common idea in the theories to be that if children are to learn best, learning must involve



environmental models and relationship supports in multiple modalities that are adaptable to the individual child especially in the learning of the skills of “self-regulation, self-control, perspective taking, communication, problem solving, making connections, and taking on challenges” (p 314). The authors also found another common finding in learning theories to be an emphasis on the whole child and the ideas of immersive learning from the environment and from the modeling of others in the environment, especially as related to EF skills and behaviors that are activity- or environment-specific (Cantor et al., 2019).

Richerme (2020), in her recent review of the ESSA and the influence on SEL in public schools, recommended that arts educators should be vocal in educating their school administration about how they are already naturally teaching SEL skills through dance, drawing, and playing instruments together, and noted that arts educators are historically not included in the funded professional development opportunities and programs that support school-wide SEL growth indicators. Richerme (2020) indicated that there are very few arts-specific PD opportunities for SEL or EF skills and the funds from the ESSA should be used to develop PD of this type.

### **Rationale**

One rationale for the problem choice was that teaching EF skills is integral to the achievement and success of students with LD and ADHD and must be taught to them explicitly. Khazanchi and Khazanchi(2020) in their review of effective practices for students with learning disabilities, stressed that explicit instruction is a required method

for students with LD and ADHD and more specifically for the instruction of social-emotional behavior skills. Explicit instruction of skills is one of the 22 High Leverage Practices (HLP), or effective research-based methods and procedures, recognized by the Council for Exceptional Children (CEC) (Roberts, Scandrett, & Washington, 2020) to support the learning and independence of students with LD and ADHD. Secondly, the arts are recognized as a natural tool in the teaching and learning of EF skills when integrated into the academic classroom, yet there is little EF skills training integrated into the arts classroom. This problem can be addressed at the school and district level by the inclusion of arts educators into school-based EF skills programming, or by the specific arts-focused trainings to teach arts educators how to embed EF skills instruction into their curriculum.

Although arts curriculum and EF skills training outcomes naturally overlap, intentional training for arts educators in terms of how to incorporate ways to teach EF skills within their classrooms is lacking. Arts educators need information and training to embed EF skills instruction into their curricula to practice them during their day-to-day lessons. Therefore, the purpose of this study was to investigate perceptions of arts educators in arts-based public charter schools in Pennsylvania regarding teaching EF skills to students with LD and ADHD and what they may need to accomplish this.

### **Definition of Terms**

The following special terms and definitions from the literature and in the field were used in this study:

*Agency*: The ability to exert influence over their own actions, and therefore what happens as a result of their actions (Bandura, 1991).

*Cognitive flexibility*: the ability to think about something in a different way, or to switch from one task to another (Zelazo, Forston, Masten, & Carlson, 2018).

*Executive Functioning (EF) Skills*: attention regulation skills that a child must possess to demonstrate academic and social success. EF skills are described as working memory, flexible thinking, organization, task initiation, impulse control, emotional control, self-monitoring, and planning and prioritization (Graham, 2017; Watson, Gable, & Morin, 2016). The term EF skills is used in this study to refer to three overlapping groups of skills: cognitive flexibility, working memory, and inhibitory control.

*Inhibitory control*: the ability to deliberately suppress attention or reactions to something, which can be illustrated by being able to ignore a distraction, stop calling out something impulsively, or doing something in a different way than how the action is done regularly.

*Scaffolding*: the collaborative interaction and dialogue between students and teachers that helps the student learn beyond what they would have on their own. Researchers in scaffolding strategies indicated that scaffolding strategies can be both cognitive and motivational aspects of (Black & Allen, 2018).

*Self-Efficacy*: how a person feels about their ability to complete something. It is important for success in life and can be used to predict academic and community achievement (Villavicencio & Bernardo, 2016).

*Social Emotional Learning (SEL)*: skills such as caring or empathizing with other people, understanding and managing emotions, developing relationships positively while choosing to avoid negative behaviors and influences, self-awareness, and decision-making (Burroughs & Barkauskas, 2017).

*Well-rounded education*: According to The Education Commission of the States (ECS) (Jones & Workman, 2016) the ESSA, defines a well-rounded education as one that provides an opportunity for all students “access to an enriched curriculum and educational experience” (p. 4) This includes access to the traditional core academic subjects of English, reading, and language arts, science, civics and government, foreign languages, mathematics, economics, history, and geography as well as the newly added subjects of writing, engineering, technology, computer science, music, career and technical education, health, and physical education (Jones & Workman, 2016).

*Working memory*: Working memory is the retaining information for a short time, manipulating that information in some useful way, and then letting it go (Raver & Blair, 2016).

### **Significance of the Study**

This study is significant because the collected data detailing the perspectives of arts educators working in the arts classroom are a first-person account of their experiences and their needs, which is needed to identify the reasons why research-based practice is not being implemented in the arts classroom and to determine real solutions to the problem. A gap in practice occurs in the field of special education when research-

based methods are not incorporated into the everyday classroom. Langberg et al., (2016) studied how to bring programs developed from research on ADHD into the classroom and identified that the most important way to bridge the gap from research to practice was to involve the stakeholders in the development of the intervention and in the intervention evaluation. One of the stakeholder groups of this study is that of the arts educators. This study is significant because of the direct interaction with these stakeholders in the development of the product through identification of the stakeholder's perception and input regarding the problem.

### **Research Questions**

The problem is that many visual arts, music, theatre, and dance educators in arts-based charter schools in Pennsylvania are not teaching EF skills to students with LD and ADHD while in arts classes. The purpose of the study was to investigate perceptions of arts educators in arts-based public charter schools in Pennsylvania about teaching EF skills to students with LD/ADHD and what they may need to accomplish this. The two research questions are:

*RQ1:* What perceptions do arts teachers have about teaching students with LD or ADHD in the arts classroom in the areas of EF skills (memory skills, cognitive flexibility, and inhibitory control)?

*RQ2:* What are arts teachers' perceptions of what they need in order to effectively support students with LD or ADHD in the arts classroom in the area of EF skills?

## **Review of the Literature**

### **Conceptual Framework**

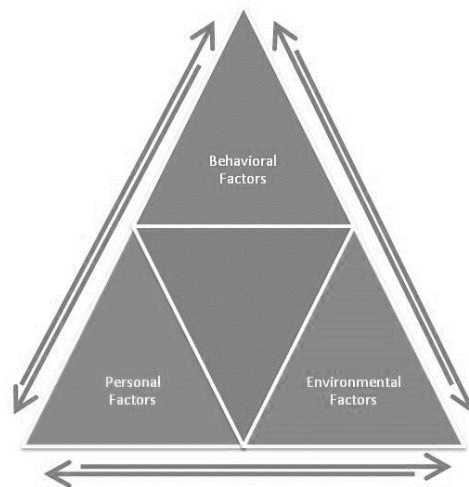
The conceptual framework for this study is Bandura's social cognitive theory (SCT) which involves reciprocal interactions between the teacher and the students in personal, behavioral, and environmental areas in order to teach and to support learning. Bandura originally coined his theory as the social learning theory (SLT) in 1971 (Bandura, 1971). Bandura later changed the name to SCT in 1989 because of his recognition that learning only occurs through the cognitive decision-making and awareness of the choices that we make as learners (Bandura, 1991). Behaviors are learned from the environment through the process of modeling and observational learning, but the learner makes their own decision to act upon the behaviors modeled or to not incorporate those behaviors (Bandura, 1989, 1991; McLeod, 2016). Bandura used his SCT to describe the way that a child learns behavior by observing how the people around them behave and then choosing to adopt or reject these behaviors as their own.

### **Triadic Reciprocal Determinism (TRD)**

Albert Bandura's SCT was based around several important constructs of learning with one of the most important being the dynamic reciprocal determinism concept. Reciprocal determinism is a triadic model involving a person's individual set of learned characteristics, their behavior in response to stimuli, and the social environment working together reciprocally to influence how that person acts (Bandura, 1999). Bandura (1999) said that not all behavior can grow from actual experiences, but that the learner creates

ideas and learns vicariously from watching other's experiences. The learner takes the information in, processes it, and then decides how to use it or to synthesize it into a novel concept. Triadic Reciprocal Determinism (TRD) is how Bandura (1971) described the interdependence between past experiences, the environment, and the reciprocal reactions between people (see Figure 1) in learning. Each of the three parts affects the other parts of the triangle in a reciprocal fashion with none being more important than the other.

### Bandura's Triadic Reciprocal Determinism



*Figure 1:* A triangular design that shows how behavioral factors, personal characteristics, and environmental factors interact with each other in a reciprocal manner when learning occurs.

Cognitive ability and personality are interconnected with the culture and setting of the environment which is also interconnected to behavior which is interconnected to cognitive ability and personality (Plate, Richards, & Ernst, 2016). The effects of one event on another in the triangle is seen in a learner's behavior after the exposure to the

event. Jenkins, Hall, and Raeside, (2018) found that events in the classroom such as social interactions with peers, imitation of behaviors, and encouragement from others can change how the learner answers a teacher's question in class (Jenkins et al., 2018). Interactions with peers within the classroom have also been found to impact the length of a written response passage (Joseph & Padmanabhan, 2019). A student's biological makeup and display of characteristics such as persistence and risk-taking can either encourage the learner to try harder when work becomes difficult if they had experienced success in the past, or making them shut down and give up when they are unable to grasp a new concept if they had difficulty with a similar concept in the past (Golsteyn, Non, & Zölitz, 2017).

A student's reaction to and internalization of positive experiences in the classroom has been found to positively increase student's belief that they can set goals and accomplish those goals through their own actions as measured through self-rated self-efficacy assessment results (Villavicencio & Bernardo, 2016). Villavicencio and Bernardo (2016) found that positive emotions associated with previous achievement in math such as enjoyment and pride contributes positively to motivation to learning new math concepts. Bandura (2013) posited that feelings of self-efficacy lead to motivation which leads to learning. Self-efficacy is what starts the learning process and the foundation of motivation (Bandura, 1989; Bandura, 2001).

EF skills are best taught to students with LD and ADHD through modeling and feedback, which are hallmarks of the SCT. Takacs and Kassai (2019) found that students



with LD and ADHD were better able to acquire new strategies of self-regulation through feedback, relaxation, and explicit strategy teaching programs than simply reading about these strategies or viewing social stories. When modeling and feedback of EF skills were included into the student's daily schedule and interactions with the teachers around them, the students developed new EF skills more effectively than with only a computer program or by watching social stories (Takacs & Kassai, 2019). Specific to the arts, Webster (2016) reviewed 25 years of music education methods and noted that the use of sociocultural approaches, modeling and feedback, and the emphasis on process and creativity rather than product techniques are prevalent in music teaching methods in college programs for music teachers. An arts student with LD or ADHD develops self-efficacy and motivation from interpersonal reciprocal relationships with arts teachers and relies on positive interactions and reinforcement of these relationships to help them continue to develop effective EF skills.

The SCT framework relates to the qualitative study approach and the use of semistructured interviews in this study because ideas of the SCT revolve around perception and communication through feedback, which also describes the semistructured interview format. The semi structured interview questions in this study are the tools to unlock the personal perspectives of the participants through the reciprocal interaction between participant and interviewer. Although the interview was framed by specific questions in this study, participants' answers are used to partially guide responses and interactions in a reciprocal manner.

## **Review of the Broader Problem**

The literature review revealed several topics related to this study. Among these topics were teacher preparation programs, teacher perceptions of students with LD and ADHD, SCT, EF skills, implications and EF skills in relation to academic success, the effects of EF deficits on the academic success of students with LD and ADHD, school-based interventions to teach EF skills, teaching concepts through modeling and reinforcement, the influence of the arts in terms of education of students with LD and ADHD, and best practices involving teaching and learning methods in arts classrooms with students with LD and ADHD. The search for articles involved the Walden University Library database, Google scholar, ERIC, Sage, and was limited to peer-reviewed journals, and involved using Boolean operators with the key phrases: *learning disabilities, ADHD, EF skills, arts teachers, social cognitive theory, best practices, working memory, cognitive flexibility, inhibitory control,*

## **EF Skills**

EF skills are a set of higher-order cognitive processes that are used to develop goal-directed behaviors, demonstrate flexibility in thinking and actions, enable individual adaptations and changes to situations, and self-regulate thoughts and actions (Roebbers, 2017; Stockall, 2017). Some of the skills that make up the greater category of EF skills are planning, inhibition, working memory, attention, self-monitoring, initiation, and self-regulation (Zelazo, 2015; Zelazo et al., 2017). EF skills in early childhood are skills that allow for simple planning and problem solving while EF skills in adolescence consist of

the more complex skills of reflection, resilience, grit, and self-discipline (Jones et al., 2018). For this study, the three major EF skills in the research questions were working memory skills, cognitive flexibility, and inhibitory control.

**Working memory skills.** Working memory is a complex skill that involves keeping information in mind and then manipulating the information in some way to use it again. (Zelazo et al., 2017). People with weak working memories have difficulty remembering and applying crucial information in order to move to the next step of a task and generate new ideas in response to the directions (Newton, Sperling, & Martin, 2017). Working memory is predictive of academic difficulties in both math and reading and emerges within the first 10 years in a child's development (Zelazo, 2015). Working memory skills are important to the development of the basic skills of fluent letter and word writing and reading activities because working memory is used when a reader translates the written letter or word into the sound-based representative of that letter or word (Fisher, Barton-Hulsey, Walters, Sevcik, & Morris, 2019).

Cragg, Keeble, Richardson, Roome, and Gilmore (2017) determined that working memory is used in math for counting and simple calculation activities and deficits in working memory skills may be contributing factor to a student's difficulty in math starting with the basics of counting learning in preschool and Kindergarten. Pappas and Drigas (2019) reviewed popular digital cognitive computer games and apps such as Minecraft, Vismory, and Fit Brains Trainer that claim to increase working memory skills for both adults and for children. These computer games and apps were Pappas and Drigas

(2019) found that these computer games and apps only improved working memory skills for the activities in the game but that there was no generalization of improved working memory in other environments (Pappas & Drigas, 2019).

**Cognitive flexibility.** The EF skill of cognitive flexibility, also known as creativity, set shifting, attention shifting, or mental flexibility involves thinking about something in multiple ways or taking another's perspective (Zabelina, Friedman, & Andrews-Hanna, 2019; Zelazo et al., 2017). Children who have deficits in cognitive flexibility struggle to cope with unexpected changes in their schedules, routines, and homework (Jacob & Parkinson, 2015), and are often seen by their teachers as stubborn or rigid in their thinking (Whitham, 2017). These difficulties are also evident when studying, taking tests, determining what information is relevant and what is irrelevant, and sifting and sorting information (Jones & Workman, 2016; Zelazo et al., 2017). Morgan et al., (2017) found that cognitive flexibility skills are less important for early school success than working memory and inhibitory control. Cognitive flexibility skills improvement strategies are not often found in intervention programs designed for preschool and kindergarten age children (Morgan et al., 2017).

Students who are considered at risk for academic and learning difficulties may require more interventions regarding cognitive flexibility skills than those students who have not experienced early life stress such as living in an abusive household (Harms, Shannon Bowen, Hanson, & Pollak, 2018). Students who display deficits in cognitive flexibility by first grade are already more likely than their peers without cognitive

flexibility deficits to experience learning difficulties in both reading and mathematics (Morgan et al., 2017).

**Inhibitory control.** Inhibitory control is the process of deliberately controlling attention towards something, such as ignoring a distraction or refraining from calling out of turn in the classroom (Morgan et al., 2017). Inhibitory control develops during school age (5-8 years) and can often be noted in experimental delay/wait tasks which are designed to provide a choice of a lesser immediate reward or of a greater long-term reward received only after directions are followed to wait and inhibit the temptation of the immediate reward (Jones & Workman, 2016). Hernandez et al., (2018) found that math skills and inhibitory control skills develop together in the same part of the brain at about the Kindergarten to 1<sup>st</sup> grade time frame. A low score on the Head Shoulders Knees and Toes test (HSKT) of inhibitory control successfully predicts future academic math difficulty (Cantin et al., 2016) whereas a high score on the HSKT test reliably predicts high reading skills ability (Hernandez et al., 2018). This indicated that those children in K and 1<sup>st</sup> grade who had strong inhibitory control were able to learn the decoding skills needed for reading and were able to better focus on the important information and ignore the irrelevant (Hernandez et al., 2018). Children who are highly impulsive and have deficits in terms of their inhibitory control may have a harder time regulating their emotions compared to children who can manage their inhibitions well (Zelazo, 2015).

The participants in this study described emotionality, impulsivity, organization, and prioritization as the greatest issues that students with LD and ADHD face in the arts

classroom. These concepts can be divided into hot and cool EF skills. Hot EF skills are those skills that are the motivator for action and involve emotions more than cognition (Roebbers, 2017; Zelazo, 2015; Zelazo et al., 2018). Hot EF skills require flexible decision-making in terms of whether to approach or avoid a stimulus and are the behaviors deficits that shown in disruptive behavior in the classroom (Woltering, Lishak, Hodgson, Granic, & Zelazo, 2016; Zelazo et al., 2017). Cool EF skills are cognitive-based higher level skills that involve thoughtful choices

### **Importance of EF Skills Development**

The participants in this study reported that the successful use of EF skills are a part of art student successful progress through the curriculum in public school art classrooms, but the effective development of EF skills contributes to other aspects of educational and community achievement and success. Downes, Bathelt, and De Haan (2017) studied the physiological changes in the brain associated with EF skills and found that the development of EF skills parallels the development of specific parts of the brain. Studying children with ADHD and deficits in the development of EF Skills. Downes et al., (2017) found that there were physical differences in the students brains as compared to students without ADHD and who had no EF skills deficits. Mulder (2020) determined that successful EF skills development was an indicator of readiness for school by evaluating the results of 5 teacher rating composites that indicate school readiness and found that only the scales that evaluated the student's EF skills were able to predict the student's readiness for school as determined by later standardized performance measures.

Diamond and Ling (2016) found that the examination of a student's early EF skills can be more predictive of academic achievement than IQ scores (Diamond & Ling, 2016).

Tamm, Loren, Peugh, and Ciesielski, (2020) found that poor EF skills performance was a predictor of greater impairment in reading, written expression in the overall school performance

### **Children with LD**

Children with LD are routinely included in arts classrooms and make up the largest category of students with disabilities in American public schools. Lee (2018) found that arts educators work with these students in inclusion arts classrooms without additional support staff and often without the in-depth training on methods and pedagogy needed. Koch and Thompson (2017) studied arts educators' feelings of confidence and preparedness when working with students with LD in the arts classrooms and found that these educators noted that the arts were beneficial for those students with LD who struggled to understand academic concepts in a different way.

Conversely, the teachers reported that typical lessons in the arts classrooms proved very difficult for students with LD and EF skills deficits and very challenging for the arts educators to use (Koch & Thompson, 2017). Morgan et al., (2017). determined that Kindergarteners with EF deficits were more likely than their peers without such deficits at this age to develop learning disabilities in reading and in math by the end of 1<sup>st</sup> grade. Gupta and Sharma (2017) reviewed multiple studies regarding working memory and determined several conclusions about the interconnection between EF skills and LD.

Reviewed studies indicated that students with reading learning disabilities have a deficit in phonological working memory as well as those students who have deficits in written expression (Gupta & Sharma, 2017). Further conclusions were that working memory deficits were a characteristic part of a student's mathematics learning disability and that students with LD also struggle to apply strategies to increase their working memory which then results in more learning failures (Gupta & Sharma, 2017). Koch and Thompson (2017) noted that even a little bit of arts-focused professional development in EF skills, and in methods to work with students with LD and ADHD resulted in positive changes towards the teacher's confidence to teach students with LD and ADHD more effectively.

### **Children with ADHD**

Arts educators report that the lack of impulse control and the lack of organizational skills impact the success of students with ADHD in the arts classroom. Children who have a diagnosis of ADHD often have significant problems with EF skills in the areas of attention, impulse control (Graham, 2017), and in organization and academic motivation (Fried, Haggard, He, & Schurger, 2017; Martin, Burns, & Collie, 2017). In addition, children with ADHD can experience difficulties with EF skills in task-irrelevant responses (Martin et al., 2017) and in executing goal-directed behavior (Fried et al., 2017), and have problems re-engaging in tasks after being disrupted (Eklund et al., 2016; Zelazo et al., 2017). Steenbergen-Hu, Olszewski-Kubilius, and Calvert (2017) described ADHD as purely an EF-deficit disability. Children with a diagnosis of ADHD



most often display problems with working memory, an EF skill linked to academic and social achievement (Zelazo, 2015).

### **Supporting EF Skills Learning in Students with LD or ADHD**

Arts educators need to understand and use best practices and interventions for students with LD and ADHD. Hughes, Morris, Therrien, and Benson (2017) identified 5 components of explicit instruction that was proven to be best practices for teaching students with LD and ADHD. These methods included the chunking of information, modeling of concepts, giving systematically fading prompts, giving and receiving feedback, and providing real-life practice of concepts (Hughes et al., 2017). McLeskey,

Billingsley, and Ziegler (2018) agreed with explicit instruction methods but determined that the methods are not always used in inclusive classrooms, which is where the students need to receive them. Ciullo, Falcomata, and Vaughn, (2015) specified that frequent and direct feedback is an important part of methods used to teach students with LD and ADHD and should give the student information about the areas that need improvement or about ways to improve performance to better attain goals. McKleskey et al., (2018) found that in addition to constructive feedback, students with LD and ADHD require positive praise and feedback regularly given as a part of a clear, consistent and structured learning environment. McKleskey et al. (2018) also determined that best practices for social skills instruction is to teach the social skills in authentic situations so that this immediate feedback can occur and where teachers can encourage generalization of these skills.

Langberg et al. (2016) worked with students with LD and ADHD in an effort to improve and teach the EF skills associated with planning for homework completion, organization of academic items associated with homework, prioritizing work at home, and efficient completion of the work. Two specific methods of explicit teaching, breaking down tasks into smaller chunks, modeling organization strategies, and positive rewards tied to goal completion were used and found to both be successful in increasing the levels of parent rated approval of success and the levels from teacher ratings of improvements in these homework skills (Langberg et al., 2016). Langberg et al., (2016) concluded additionally that a common factor in the success of both of the methods used was the involvement of all of the stakeholders, including the student. With training and experience, just as in the math or reading classroom, arts educators can provide these supports within the arts classroom.

### **Arts Educator Training**

Arts educators who do not receive training in best practices and pedagogy specifically for teaching students with LD and ADHD in the arts classroom may not realize the importance of their role in the development of EF skills for these students and how EF skills are integral to a student's success. Zhang and Zeller (2016) studied the retention of teachers in the education profession and stated that teacher certification programs need to prepare student teachers to become effective and well-informed professionals who have a level of success that will encourage them to remain in the profession and be effective in teaching all students. Teacher certification programs help

novice teachers increase their self-efficacy (Scheeler, Budin, & Markelz, 2016). Corcoran and O’Flaherty (2017) found that many new arts educators are placed into a sink-or-swim situation with insufficient training in special education and pedagogy and limited pre-teaching experience with students with LD and ADHD. Coady, Harper, and De Jong (2016) identified that new arts educators need more structured field experiences particularly in specialized assignments that can help them learn and practice inclusive practices for students with LD and ADHD.

### **Personal Characteristics**

A teacher’s personal perceptions, beliefs, and efficacy are connected to the effective instruction of EF skills within the arts classroom. Kim, Jörg, and Klassen (2019) reviewed 25 teacher effectiveness studies and looked at the effect of a teacher’s personal perceptions on the effectiveness of their teaching as measured through the viewpoints of students and of the teachers themselves. Some of the studies reviewed indicated that teacher personality was found to be associated with student learning and teacher effectiveness and referred to the highly social nature of the job as an indicator that the teacher personality will affect the students (Kim et al., 2019).

Angelkoska, Stankovska, and Dimitrovski (2016) determined that a student’s personality and personal characteristics as measured through the Big Five Inventory of Personality can help determine the general success of a university student as measured by their performance in their last year of college. The act of learning a behavior or skill takes place within reciprocal interactions between teacher and student (Rubenstein, Ridgley,

Callan, Karami, & Ehlinger, 2018). Zee and Koomen (2017) studied teacher and elementary school student relationships as an indicator of the academic success of students who were at risk of academic failure and found that the perceptions of both groups about each other played a part in the self-efficacy of the students and of the teachers. Teacher personal perceptions, beliefs, and motivations help to represent their belief that what they are teaching will work, and that it matters (Martin et al., 2017).

Cumming, Bettini, Pham, and Park (2020) further found in their review of 20 studies that these teacher-student positive relationships and the levels of teacher-student conflict was consistently able to predict the student EF skill development levels with positive emotional relationships related to more effective EF skill development and conflict related to a lower student EF skills ability. Neuroscience researchers Godwin, Eng, Todaro, Murray, and Fisher (2018) and Jaeggi and Shah (2018) as well as educational researchers Zelazo et al. (2017) independently concluded that EF skills are acquired mostly by observation, experience, or practice, and that the repeated use and modeling of EF skills in problem solving situations results in a strengthening of these skills.

**Interpersonal and personal agency.** Bandura (1971) emphasized the importance of the interpersonal agency between the teacher and the student as it impacts the student's own personal agency, motivation, engagement, and achievement. The student should want and believe that they can learn, and the teacher must feel this way as well (Kay & Kibble, 2019; Martin et al., 2017) Learning between a model and a student occurs in SCT

if the student can identify with the teacher by internalizing and adopting the model behavior using both personal and interpersonal agency (McLeod, 2016).

### **Behavioral Factors**

According to Bandura (1991), behaviors and actions are affected either by direct experience or by observing the behavior of others. The more basic behaviors grown from experience include a natural reward or punishment consequence, or reinforcement, when the person achieves or not achieves their intended goal (Kay & Kibble, 2019). When we add the human aspect of cognition to the situation, and the learner is aware of the behaviors and the consequences resulting from one choice or another (Bandura, 1991), there is a significant increase in the information gained from the reinforcement and in the motivation level of the learner (Martin et al., 2017).

**Importance of feedback.** In order to encourage new behavior patterns feedback must be given to the learner. Some feedback comes from within the learner (Louick, Leider, Daley, Proctor, & Gardner, 2016), but the most effective feedback comes from the person with whom the learner interacts and from the relationship with that individual (Bandura, 1971; Rubenstein et al., 2018). How the teacher behaves or reacts to a student's actions is a major determining factor for the growth or reduction of that behavior in the student for the future (Bandura, 1971; Maher & Zusho, 2015; Stutz, Schaffner, & Schiefele, 2016).

### **Environmental Factors**

Environmental factors in learning are teachers' perceptions of administrative support and curricular constraints at both their classroom (micro) level and of the district or community (macro) level (Rubenstein et al., 2018). For teachers, these feelings are involved in their self-efficacy: how enabled they feel about their ability to control their environment in order to accomplish what they set out to do (Maher & Zusho, 2015). Macro-environmental constraints in public schools could be required curriculum and standards, specific timing of assessments and grades, or the limited time available in the school day and year (Di Lieto et al., 2019; Newton et al., 2017). Arts educators may feel that these constraints cause them to not have enough time to teach EF skills specifically, since they are limited in teaching their subject requirements.

### **The Arts and Research**

Traditionally, quantitative research involving the arts and education has been conducted with reservation because of feelings that the arts should not be quantified and limited through numbers in quantitative methods. Ajimuda and Aminu (2020) in their student of the concept of "art for art's sake" (p 70) described how some artists believe that the act of researching art is ethically and philosophically unsound since art should not have to exist for any particular purpose. Rocha (2018) expressed the dichotomy of art education is that the arts curriculum provides an opportunity to understand our human need for explanations about the world, while at the same time developing in us the abilities to live without those explanations. Wan, Ludwig, and Boyle (2018) studied the impact of the arts in education through the ESSA and found that the trend of newer

research in the arts and in arts education has shifted focus from measuring how the arts impacts other areas of achievement to measuring the impact of the arts alone.

Many studies involving the arts and non-academic situations and outcomes have been conducted. Researchers Boydell, Hodgins, Gladstone, and Stasiulis (2017) and Richards et al. (2019) found in their studies that participation in the arts by people diagnosed with dementia resulted in participant self-reports of a greater sense of joy and happiness. Rehabilitation researchers López-Ortiz, Egan, and Gaebler-Spira (2016) concluded that dance and music activities with child participants who had cerebral palsy were effective in improving the participants results on the Pediatric Balance Scale. Round, Baker, and Rayner (2017) found that participation in art making activities resulted in improved speech, communication, and social interaction in the participants who had been diagnosed with severe autism.

Researchers of the arts in psychotherapy, Dieterich-Hartwell (2017), concluded that dance and movement therapy was a recommended portion of a therapy program for those who were diagnosed with Post Traumatic Stress Disorder (PTSD) post traumatic brain injury (TBI) and Post Traumatic Stress Disorder (PTSD) Ward and Parkes (2017) and Basting (2018) determined that a programs of music and singing promoted improved communication of participants with severe communication deficits and memory deficits as reported by their caregivers who interacted with the participants daily. and people with severe intellectual disabilities or who have difficulty with communication (Alter-Muri, 2017; Basting, 2018; Theatre programs have been found to impact the social skills and

communication of students with autism or severe intellectual disabilities (Zyga, Russ, Meeker, & Kirk, 2018).

The arts are used in non-academic environments as an effective therapeutic mechanism to attain therapy goals. The use of the arts as therapy is different from the use of the arts in the academic environment to learn and create art. Art as therapy is also different from the use of the arts as a vehicle to increase achievement because the goal of art therapy is to be actively involved in the activity of an art in such a way as to open the student's willingness and ability to address therapy goals, whether consciously, or subconsciously (Alter-Muri, 2017). Cohen-Yatziv and Regev (2019) reviewed multiple qualitative studies about art therapies and stated both that the process of creating art in art therapy is more important than the product and that the art therapist is focused only on the individual therapy goals of the students.

Participation and training in music has been recognized in medical and psychology professions to increase heart rate by listening to faster paced music while exercising (Thakare, Mehrotra, & Singh, 2017), and to decrease pulse rate and blood pressure when participants listened to slower paced music (Bora, Krishna, & Phukan, 2017). Dance participation has been found to increase the balance, core strength, flexibility, mobility and stamina of people who were at-risk for falls and then to reduce the participants visits to their medical practitioner for fall-related needs (Vella-Burrows, Pickard, Wilson, & Clift (2017), to reduce systolic blood pressure (SBP)/diastolic blood pressure (DBP) in people with hypertension (Conceicao, Neto, do Amaral, M. Martins-



Filho, & Carvalho, 2016), and to improve walking gait in people with Parkinson's disease (Kalyani et al., 2019).

Lastly, artistic painting and drawing has been demonstrated to lessen depression in children receiving chemotherapy (Tahmasebi, Maghsoudi, & Talakoub, 2017) and to increase the use of relaxation and coping skills use in treatment of people with PTSD (Lee, 2018). The arts continue to be used in therapeutic ways in psychoanalysis circles and in clinical areas while presented by certified art or music therapists. Art or music therapies are often presented along with medication intervention and have shown to be effective in increasing behavioral compliance and social interactions with families and peers when measured by self-reports (Porter et al., 2017), in helping to heal adolescents who have experiences traumatic events (Cohen-Yatziv & Regev, 2019), and in increasing physical strength, coordination, socialization, and the general quality of life in people with Down's Syndrome (Snyder, 2018).

The arts have been involved in EF skills improvement programs and have been included into the general education classroom to help EF skills development. Music training has been shown to improve the clinical display of EF skills and communication skills in students 3 – 17 years old with Autism (Suzuki, Kenmochi, Miyamoto, Hayashi, & Matsumoto, 2017) and to increase the amount and quality of interpersonal contact and communication skills as measured by the observations of participants in music therapy who have severe and profound intellectual disabilities (Swaney, 2017). Barrientos-Fernandez et al.(2019) studied 28 secondary students in a music-integrated program and

28 secondary students who were enrolled in a program of general studies without music courses in Spain. The researchers used the results of standardized questionnaires and assessments to compare the two groups of students and found that the students who were enrolled in music-integrated programs scored significantly better in general intelligence, non-verbal intelligence, and in study habits and planning.

Osborne, McPherson, Faulkner, Davidson, and Barrett (2016) studied two groups of primary school students from two schools in Australia that were rated as low socio-economic and high poverty schools. The participants in the study attended instrumental learning programs both during and after school and were given cognitive and achievement assessments as well as an assessment designed to measure student well-being and adjustment prior to beginning the programs and again after two years of the instrumental programs (Osborne et al., 2016). When analyzed, statistically significant changes were observed in an increase in non-verbal reasoning skills, on scores of total well-being and psychosocial subtests such as feeling happier, having more purpose in life, feeling a sense of belonging, and social interactions with peers (Osborne et al., 2016). Norazah et al. (2017) conducted a review of 3 studies regarding music and students with ADHD specifically concerning the effects on cognitive skills measurements and found that when students with diagnosed ADHD were exposed to music while engaged in an academic task, significant positive effects on math scores in both elementary and high school students were realized, as well as also significantly increasing positive changes in emotional states.

Diamond and Ling (2016) reviewed 84 studies about programs or interventions claiming to increase EF skills and found that programs that combined both physical activity and cognitive challenges such as training in theatre produced more benefits to EF improvement than programs that involved more sedentary activities such as photography, visual arts, and quilting. Losardo, Davidson, and McCullough (2019) focused their research on college-age students with cognitive and speech and language disabilities by creating a program using college speech and language students and theatre students paired with the students with developmental disabilities for theatre activities. Progress on the goals for the developmentally disabled students was measured every semester and the clinicians found measurable improvement in speech and language goals in the areas of pragmatics, socialization, semantics, syntax and grammar, fluency, reading comprehension, and tone of voice for all participants in the program across three years (Losardo et al., 2019).

Miramontez and Schwartz (2017) found that dance instruction has been found to impact the improvement of EF skills in students with Autism students with Down's Syndrome (Snyder, 2018), and in children and adults with Cerebral Palsy (Cherriere et al., 2019). Narimani, Abolghasemi, and Ilbeigy Ghalenei (2018) determined that the act of artistic painting increased EF skills in students with dyslexia while Alamdarloo, Shojae, Shalani, and Hossein (2016) stated that students showed increased inhibitory control after in small groups to create murals and drawings. The intentional inclusion of EF skills training into arts classrooms may amplify the influence of the arts on the

improvement of EF skills in students with LD and ADHD.

### **School-Based Programs Teaching EF Skills**

Educational institutions have implemented Intervention programs and systemic whole school programs in order to teach and improve EF skills while in the educational setting. Because of the importance of EF skills to a student's success in school and in life, educators and researchers have been investigating ways to teach and improve these skills in children as young as preschool age. Cantin et al.,(2016) investigated EF skills measurements in preschool and found that they can be used to predict reading and math performance in elementary grades. Jacob and Parkinson (2015) reviewed the results of multiple studies which demonstrated that different EF skills develop at different developmental ages throughout childhood and adolescence.

Owens and Garcia (2019) determined that many academic-based programs designed to improve EF skills focus on preschool and kindergarten-age students in early education situations. There are several school-based intervention programs that are designed to aid in the development of EF skills and bring substantial results in school achievement. Most EF intervention programs target results in math and reading in order to show improvements and focus more often on the EF skill of memory, than on other skills. Steenbergen-Hu et al. (2017) studied seven popular school-based EF skills instruction and intervention programs and found that positive improvements stemming from increased EF skills as a result of EF school intervention programs were seen both in direct and indirect outcomes of achievement.

There are several EF skills intervention programs that are used successfully within schools to teach, improve, and support EF skills development in students. Diamond and Ling (2016) conducted an analysis of these successful programs and found that they have shared characteristics that support the development of EF skills in a low stress individual level while still provide challenges to accommodate children who progress at differing rates. Diamond and Ling (2016) also found that these programs emphasized character development through oral language skills while encouraged children to work with one another to increase social skills and bonding within a common activity. Direct outcomes from these programs involved actual development or improvement of the EF skills, and indirect outcomes were noted in improved academic successes and in improved behavior and school conduct (Steenbergen-Hu et al., 2017).

Some of the EF intervention programs target the students and some target the teachers for intervention. Bandura (1991) recommended that EF intervention programs should help teachers promote students' learning and to help teachers to create learning environments that are predictable and supportive for students to maintain motivation levels. Graziano, Garb, Ros, Hart, and Garcia, (2015) evaluated the impact of the teacher/student relationships on the effectiveness of these programs and found that even more important to the success of the school-based programs than a good student/teacher relationship was a training program to teach these teachers how to interact effectively with the students to model and teach these skills.

### **Non-Academic Programs**

Educators and families continue to search for novel methods to improve EF skills not only in the educational environment, but in unique ways and using unique techniques. Greco and de Ronzi (2020) studied 28 students with Autism between the ages of 8 to 11 years who were provided with karate training for 24 weeks and found a significant improvement in the participant's social skills and EF skills as rated using pre- and post-intervention parent ratings using the Behavior Rating Inventory of Executive Function (BRIEF).), Flynn and Richert (2018) studied the results playing physically-active video games such as those played using the Wii console, regular video games, and exercising without the video games had on EF skills of 155 children 7 to 13. The authors found that when compared to children who participated in 20 minutes of exercise, children who played regular video games for 20 minutes showed improvements of complex EF skills tasks as determined by their pre-and post- activity results in three flanker tasks (Flynn & Richert, 2018).

Di Lieto et al. (2019) researched robotics programming with 187 first graders who had robotics programming training sessions twice a week for 10 weeks using a Bee-Bot robot. The children were tested in working memory, inhibitory skills both prior to the interventions, during, and again after the intervention with results indicating that enjoyable and challenging cognitive robot programming activities can improve working memory and inhibition processes in young children. Equine therapy effect on EF skills was studied by Anderson and Meints (2016) who documented the results of a weekly equine therapy program for 15 students between the ages of 5 and 16 years old. The

authors found, through analysis of the results of pre- and post-intervention parent questionnaires and the results of a pre- and post-intervention adaptive behavior scale, that equine therapy may improve some social functioning skills in children with ASD, but that it did not show significant improvement in communication or socialization skills (Anderson & Meints, (2016).

Chou and Huang,(2017) monitored 50 children with ADHD who participated in 40 minutes of yoga twice weekly for 8 weeks and found that there was a significant improvement in sustained attention, lack of distractibility, and attention shifting in these students. . Parong et al. (2017) report that non-educational home-based intervention programs for the improvement of EF skills such as dietary restrictions and computer programs and apps have questionable scientific effects but are becoming more and more popular. Steenbergen-Hu et al. (2017) continue to report concerns about the longevity of any improvements through short-term interventions or non-academic programs as well as about the impact of these programs on the whole child's overall performance in school or in society.

### **EF Skills Programs and the Arts Classroom**

It can be posited that when creating an activity or program to develop or improve EF skills that it is the motivation, interest in, and the practice of the activity that produce the most benefits. Lichtinger and Kaplan (2015) conducted a case study which identified that n EF program developer should identify and use something that the children love to do or be involved in so they will be willing to spend intensive time and effort doing it.

Perry and Edwards (2019) studied virtual arts-based learning strategies and found that educators should be involved in modeling and supporting character development, supporting peer interactions, and in facilitating feedback while children practice these skills in the arts classroom both virtually and in person. These are SCT practices that lend themselves to the arts classroom where the practice and discipline of the art is paramount for improvement while increasing motivation to persevere.

Park et al. (2015) tested 15 students before and after they attended a music or arts program in standardized assessments of EF skills and determined that the participant's performance on the EF assessments were significantly improved. Park et al., (2015) also conducted imaging of the participant's brains before and after the arts program and found that areas of the brain increased in thickness after the arts program participation, indicating that there was a positive effect on EF skills connected to brain changes after the arts program intervention and attributed the differences to the motivating and fun aspect of the arts program itself. The arts also provide a built-in scenario of the SCT methods of demonstration/practice/feedback and critique/improvement and praise. Frydman (2016) reviewed multiple studies on drama therapy, music therapy and art therapy and the effect of demonstration, feedback, critique, and praise impeded in these art therapies on the learning of EF skills. Although Frydman (2016) determined that there was only a theoretical connection between these platforms, the conclusion was drawn that social interactions and reciprocity were the connections between the arts therapies and the neurological processes of EF skills.



Participation or engagement in the arts affects the learning of EF skills.

Goldstein, Lerner, and Winner (2017) found that when theatre and dramatic play was integrated into the curriculum with 4-year old's who had EF deficits the participants demonstrated increased emotional control and inhibitory skills. Hardiman, John Bull, Carran, and Shelton (2019) found that including arts-based activities into the science curriculum in a randomized control trial using 16 5<sup>th</sup> grade classrooms resulted in the students who used the arts-based curriculum scoring higher in non-arts-related memory assessments as compared to the control groups.

Jaschke, Honing, and Scherder (2018) conducted a study into the effects of long-term full arts instruction programs on EF skills and found that students who had two years of full curricular music or visual arts classes demonstrated significant improvements in verbal IQ, planning, inhibitory control, and working memory as measured through the administration of pre- and post-intervention standardized IQ assessments and EF skills assessments. Despite research that indicated benefits of the arts across the curriculum when infused into the general education classroom, and the demonstrated improvement in EF skills through interaction with the arts, there is little to no research on the inclusion of specific EF skills development programs in the arts classroom and little to no protocol that instructs arts educators in the methods used to teach EF skills in the arts classroom.

### **Importance of the Arts in the Arts-based Public Charter School Curriculum**

In arts-based public charter schools, the opportunity to learn in the arts classroom is an important part of the curriculum for all students, Lackey (2016) reviewed three studies based on the same inner-city school which described how arts classes became a part of school reform for underserved socio-economic populations of students. The author provided the demographics that described the school's population as 92% of families that qualify for free or reduced lunch, and 60% children of color (Lackey, 2016). The school implemented a new curriculum that was arts-infused which made the entire school curriculum accessible to at-risk children of poverty by integrating multiple methods of literacy and engagement and by increasing the students' motivation resulting in increased school achievement (Lackey, 2016).

Ingraham and Nuttall (2016) found that non-native English speakers often had their language acquisition support classes during the arts time in order to allow the student to attend core classes and therefore these students were unable to benefit from the arts classes offered in their schools. Gooden (2017) found the same course substitution occurred with students who required supports based on a disability and who did not have the time in their schedule to attend the arts classes. Inequities in the arts in United States public schools indicated that students were more likely to receive quality arts classes and exposure in schools if they lived in wealthier districts, were high-achieving students, or spoke English as their native language.

Students who attend arts-based public schools or are involved in an arts-infused public-school program benefit from a deliberate cross-curricular approach with the arts

and the academic courses. The arts-infused curriculum approach is found to improve divergent thinking abilities (Li & Cheng, 2018), helps to combine perspectives from multiple disciplines (Bautista, Tan, Ponnusamy, & Yau, 2016), is often more engaging (Hardiman, 2016), and produces students who are more likely to score proficient or higher in literacy and in retention of content taught (Hardiman, 2016). In non-arts-based public schools, the concept of adding the arts into the curriculum in an equal footing as math and science can be found through the new Science, Technology, Engineering, Arts, and Mathematics (STEAM) instruction techniques. Conradty and Bogner (2019) described how STEAM methods of inquiry-based learning were used with 160 participants who then demonstrated a significant increase in short term knowledge and motivation and in long-term retention of information. Learning using the Science, Technology, Engineering, and Mathematics (STEM) methods now include the arts as a part of the well-rounded education, combining analytical methods and creativity to address the educational needs of our changing world (Ludwig, Marklein, & Song, 2016)

### **Implications**

Upon completion of the interviews, the collected data were used to create a professional development training that would provide arts educators with professional knowledge and experiences they required to teach EF skills to students in their art classroom. The benefits of the open-ended interview design emerged as the data gathered reflected thoughts, ideas, and perspectives from the participants regarding this topic. The unique findings of this study drove the deliverable project in a unique direction with the

deliverable project consisting of artistic and EF skills best practice pedagogy coupled with specific training in methodology, presented to arts educators in a hybrid format. This study may affect social change by providing a richer and fuller description of the needs of arts educators in arts-based charter public schools, and by creating a training that will bring the arts classrooms in arts-based public charter schools closer to an equitable level to the academic classrooms in the teaching of EF skills.

### **Summary**

This literature review revealed that arts educators require training in the pedagogical content required to become a teacher, and training in the specific subject matter that they will teach. Additionally, prospective teachers require clinical experiences in which to practice what they are learning and to receive reinforcement in the use of best practices for students with LD and ADHD. This results in teachers who are better prepared, who understand the importance of not only what they teach but also how they teach it, and who know how to support all students within the arts classroom in order to provide a well-rounded high-quality public education.

In the literature review there was insight into the SCT and how it was developed, refined, and used. Common themes in the literature were that the reciprocal interactions between the environment and people, personal experiences and characteristics, and behaviors was a method of learning that was well-suited to the acquisition and improvement of EF skills. Another common theme in the literature was that self-efficacy of both the teacher and the student was the impetus for learning, motivation,

perseverance, and the willingness to try new or challenging things. Learning using the SCT involves personal characteristics of the learner and the model, behaviors of all involved, and constraints and supports in the environment in which participants interact.

The three groups of EF skills most commonly categorized in the literature were working memory, cognitive flexibility, and inhibitory controls. The methods of modeling, feedback, and reciprocity were used to teach EF skills to all students.

Information from the literature review also revealed that students with LD or ADHD are particularly in need of support and help with EF skills, require explicit instruction and modelling of the behaviors, and require immediate and appropriate feedback and reinforcement to learn. Additional themes in the literature referenced how the arts could be used for rehabilitation and improvement of quality of life issues or how the arts could be integrated into the general education classroom and curriculum to improve EF skills in that educational environment, there is a gap in research regarding students with LD and ADHD with little to no studies about how to integrate EF instruction into the arts classroom to best support these students

Section 3 focuses on the proposed study's methodology, method of recruitment for participants, data collection methods, and plans to analyze data collected from semistructured interviews with arts teachers. Information from interviews was used to drive the creation of training to assist teachers in arts-based public charter schools to teach EF skills to their students with LD or ADHD in arts classrooms.

## Section 2: The Methodology

The purpose of this study was to investigate perceptions of arts educators in arts-based public charter schools in Pennsylvania regarding the teaching of EF skills to students with LD and ADHD and about what they may need to accomplish this. The RQ's of this study involved finding out the perceptions of the participants which necessitated the use of a qualitative rather than quantitative study design to reflect the non-numerical data. RQ's were answered by collecting and analyzing information from the participants through semistructured interview methods. Rider, van Bakergem, Park, Wang, and Hipp (2018) while studying the public health field, used semistructured interviews in order to obtain rich and detailed data and to allow the participants to fully and clearly express themselves and their perspectives. Hitchings and Latham (2019) emphasized in their review of the use of interviews in qualitative research that research questions that were developed around obtaining another's perspective were best answered through the use of interviews. In this study the voices and perspectives of the participants are represented as recommended by Hitchings and Latham (2020) authentically through direct quotes that provide instant proof of the participant perspective. Lastly, Twining, Heller, Nussbaum, and Tsai (2017) in their guidance on collecting and reporting data from qualitative studies, recommend using inductive reasoning in order to collect and analyze the data in a manner that was more than superficial, and not just at face value.

### **Participants**

After approval was granted from Walden University's Institutional Review Board (IRB (approval # 01-13-20-0574354), initial invitations for participation were emailed to

55 elementary, middle, and high school arts educators in local arts charter public schools in Pennsylvania, inviting them to participate in semistructured interviews. The only requirement for participation was that the person held the role of an arts educator at an arts-based charter public school in Pennsylvania.

For this study participants were not differentiated by grade level experience, type of certification, or years of teaching. Requirements to become an arts educator in public schools in Pennsylvania include the completion of a Bachelor's degree in arts education along with teaching clinical practicum for visual art, instrumental music and for vocal music while for theatre and dance teachers, there is no teaching certification option in Pennsylvania. (Pennsylvania Department of Education, 2020b). Generalization to other types of schools or areas of the country must be made with caution since requirements for an arts educator certification may vary state to state or between private and public schools within the same state. Since this study only involved participants from arts-based charter public schools in Pennsylvania, it was therefore assumed that due to their roles as arts educators in this type of school and within the same state that the participants perspectives would be representative of the arts educators targeted as one group of stakeholders of this study.

This study involved eight participants who were purposefully invited and represented the visual arts, dance, theatre, vocal music, and instrumental music with experience teaching various grade levels. Creswell (2007) recommended that five to 10 participants could be a sufficient number of participants for a qualitative study as long as

the resulting data collected were a thick and rich description that fully represented the answers to the RQs. Boddy (2016) stated that a sufficient sample size in a qualitative study does not require redundancy of similar people representing similar participant groups or that there be a large number of participants in order to be a good representation of the participant pool. In this study participants were able to provide thick and rich descriptions of their experiences in the arts classrooms even though the sample size was small because they represented several grade levels and art forms. Semistructured interviews were used in this study to create a depth of understanding by prompting the participant with a prepared question while the interviewer listened to the participant's answer and then asked related questions prompted by the initial answers.

I purposefully invited arts educators from several arts-based charter public schools within Pennsylvania to participate in this study. I sent email requests to all arts teachers in two arts-based public charter elementary schools, an arts-based public charter middle school, and two arts-based public charter high schools, which totaled 97 potential participants. Prospective participants' emails were listed on school web sites, which allowed for purposeful sampling to send invitations to all arts educators in the arts-based charter schools who would be able to provide depth and rich information regarding their unique experiences. My experience as a musician as well that of being a special education teacher allowed me to draw upon this dual role and use educational, technical, and artistic terms in order to create rapport. This allowed me to develop working relationships quickly and promote a relaxed atmosphere for more honest answers. This



rapport was established through interviews in person and over the phone. Drabble, Trocki, Salcedo, Walker, and Korcha (2016) found that using the telephone for interviews reduced bias and led to more honest and realistic answers from participants because the sense of equality between the interviewer and participants.

Email invitations contained a paragraph inviting recipients to participate in a study based on their roles as arts educators in arts-based charter public schools. Informed consent forms were provided in an attachment that described all relevant information from the IRB, background information about the study, study procedures, sample questions, and a description of the voluntary nature of their participation. I further described any potential risks or benefits to participation and offered a payment incentive of a \$5 Dunkin' Donuts gift card. I then described methods that would be used to protect the privacy of their personal information, interviews, and transcripts such as keeping recordings on a password-protected drive, using random 5-digit pseudonyms for participants instead of a name, and removing identifying descriptions in the study such as name, years of teaching, subjects taught, and schools in which they were employed. This method required a reply to the original email stating that they gave consent to participate in the study. After initial consent was received, I communicated with participants through email to determine preferred times, dates, and methods of conducting interviews, with all choosing to interview by telephone.

In addition to standard measures of confidentiality, I focused on confidentiality needs of this group of professionals specific to this study. Because this study consisted of

a small sample size of educators in a unique profession and specific type of environment, the protection of participant identities was especially challenging and necessary. Initially, study results included a description of each participant's art form and levels of school in which they had experience teaching, but this was removed to minimize risk of identification.

### **Data Collection**

Data required to address the RQs of this qualitative study came from semi-structured interviews to learn more about participants' perceptions. These semi-structured interview questions were open-ended and developed prior to interviews and asked in the same order for each participant. Following the findings of Weller et al. (2018) in their student of open-ended questions in qualitative studies, I then asked follow-up or clarifying questions based on how participants answered initial questions. The instrument of data collection was the Otter app which is a conversational transcription app. The Otter app is a free app created in 2018 and described by AISense (2018) as specifically designed to record the challenging person-to-person conversational format of interviews and turn them into searchable documents. The Otter app was simple to use and able to keep up with interviews over the phone. Collection of data in this manner was justified for this study because I needed to collect data in real time without disturbing the interactive interview process and rapport by writing and asking the participants to repeat their statements throughout. Using the Otter app, a document was created from the conversation that was used to review the interview in its entirety and which Adhabi and

Blash Anozie (2017) in their study of interview methods for research recommended as a good way to develop a good connection with the participant and to collect the correct type of data from the participants. This uninterrupted exchange served to engage the participants in the interview and make their perspectives known more effectively to answer the RQs of this study (Adhabi & Blash Anozie, 2017)

**Researcher-developed interview questions.** I developed the protocol for my semistructured interviews (Appendix C) based on my need for a reciprocal conversational format that would elicit the participant's individual description of their experiences in the arts classroom and to reveal more details of the arts educator's perceptions. There were no historical or legal documents used as a source of data. The questions were constructed using the themes of SCT and the descriptions of EF skills taken from the literature.

**Sufficiency of instruments.** Data were generated during one-hour individual interviews either conducted over the phone or face to face with each participant while simultaneously being recorded by the Otter App on a smart phone. The data were changed from speech to text in real time during the interviews. The Otter app automatically created a word document which was saved and stored in a secure location and designated by a randomly generated 5-digit number. The systems for keeping track of the data and emerging understandings involved the use of a research log and reflexive journal to collect narrative thoughts and process notes, and a color-coded sorting of themes while analysis occurred. Access to the participants was gained through an initial invitation email, generated by publicly-accessed demographic data drawn from the

websites of arts charter schools in Pennsylvania. Upon receipt of the participant's email agreeing to participate in the study, arrangements were made via email correspondence for interview times and methods that were acceptable to the participant.

The focus of this study was on the arts classroom experience of arts teachers, not on the charter school's mission and vision or curricular choices, which limited my potential bias as a charter school supporter. The participants may have a bias and be defensive of their art form and methods, therefore Oltmann (2016) recommended that I avoid reacting with any judgmental language while responding to the arts educator's answers because that might shift the bias towards their potential internal agenda. One method I employed to reduce this bias was to ask follow up questions in response to the arts educator's answers and asked questions that directed the educator back to the description of their perspective. Lastly, I was able to draw upon my reflective thinking training as a teacher and as a school administrator to reduce my knee-jerk responses to participants' statements, which reduced my bias similarly to the findings of Poos, van den Bosch, and Janssen (2017) who found that previous training in reflexive thinking was effective in reducing biased responses.

### **Data Analysis**

Analysis was based on the data collected, the purpose, and framework of the study. As recommended in Saldana's (2015) coding manual, data analysis began with the simple organization of the interview transcripts in first cycle coding, reading and rereading all the information and organizing all of the transcriptions. I then moved into a

priori coding using electronic program assistance, color coding, and visual mapping of the data. A priori coding involves separating the data prior to reviewing based on a previously determined category. In this analysis, I separated the questions and responses data using the research questions as identified by a review of the interview questions matrix, and then into information regarding the three EF skills and SCT. As Onwuegbuzie, Frels, and Hwang (2016) recommended in their review of coding methods, the literature review, research questions, and interview questions (see Appendix D) were used to provide concepts for coding to represent information in the data.

The second cycle review of the data followed Saldana (2015) steps of open coding which involved identifying words, phrases, thoughts and ideas that might indicate potential patterns. Onwuegbuzie et al. (2016) identified that such open coding is often used in the beginning phases of research where information is organized in a way that appears to represent a presumptive theme or common idea.

Next, I implemented a cross-case analysis as described by Onwuegbuzie et al. (2016), where the electronic data collection program assisted in the graphic comparison and contrast of one participant's response with another participant's response to the same question. This resulted in coding that represented words and phrases for each question across the eight participant cases. For the third arrangement, I compared and contrasted the data for each SCT category on the question protocol matrix, and then similarly for the fourth arrangement I compared and contrasted the data filtered by each EF skills question category from the matrix and fifth and finally, I compared the data through the filter of

each RQ.

Analysis of the initial codebook, which was created through in vivo categories in the data indicated that for RQ 1, the initial broad analysis resulted in several category codes which were; (a) classes, (b) arts form specifics, (c) personal characteristic, (d) students, and (e) emotions. For RQ 2, the initial broad analysis resulted in the category codes of (a) scaffolding and (b) a sense of choice. The line by line coding then split the data which enabled me to really see the depth and breadth of the interviews and begin to look for common ideas, as recommended by Onwuegbuzie et al. (2016). Each of these categories were made up of multiple codes that indicated common ideas, allowing me to reflect more deeply on the contents of the data and to begin to get a feel for the description of the arts educator's experiences in the classroom.

Additionally, I explored the data further using graphs and word clouds at this stage as well as hand drawn mind maps and notes in the research journal. These tools provided me with the direction to better identify concepts and gave me a way to see the relationship between these ideas. I reviewed relationships between derived codes to form categories.

After a second reading of the transcripts, several common responses were discovered. For RQ1, participants responses reflected their perspectives that students with LD and ADHD are supported in arts classes by other students and by the interaction with the art form, but that these students must be able to prioritize and to be flexible in order to be successful in the art. The participants also reflected that students with LD and ADHD

must persevere and follow their interest in the art form. Finally, the participants commonly compared themselves to their students, indicating that they saw themselves as children being just like the students that they now teach. Reactions to working with students with LD and ADHD in the arts were described through statements that indicated the participants recognized that these students needed more time to work and that the students are often very hard on themselves, especially in the light that they cannot help their actions that are affected by their learning or focus deficits. The participants described transformations that they had witnessed in students with LD and ADHD in the arts classroom, as the students became more confident and successful as they progressed through the art curriculum.

The participants' responses to RQ2 indicated their perspectives that arts educators need to have support of the arts from their administration within the school in order to best support the instruction of students with LD and ADHD in the arts. When reflecting on the needs of arts educators, the participants identified that these teachers needed to have good assessment skills, classroom management skills, scaffolding skills, lesson planning skills, and to be well versed in data quantification methods. The participants described the effective techniques needed to work with students with LD or ADHD in the arts classroom. Techniques identified by the participants were to focus on their interests, to spend time with them individually getting to know them as a person and building a relationship and rapport, to give feedback often, and to increase the student's confidence. The participants also emphasized the important of working in groups in the art classroom

to gain support from peers and to give support to others. Participants commonly discussed talking through problems with the students and using student self-evaluation and student self-reflection as a learning tool, along with modeling of skills by others and scaffolding needed skills when they are identified as a deficit.

The use of the SCT framework in the planning and development of the study as well as in the analysis of the data was an indicator of quality and rigor as indicated by Johnson, Adkins, and Chauvin (2020) who described how the use of a framework in the planning of research was a an indicator of rigor Finally, I chose to use a latent analysis method, where I used many of the educator's own words to try stay closer to what the educator described, and was able to insert these into the findings in order to demonstrate the process and maintain rigor and credibility.

To ensure quality and credibility in this study Noble and Smith (2015) emphasized that I must acknowledge the many different perspectives and viewpoints available of the same experience. Additionally, Forero, et al., (2018) stated that it is my duty as the researcher to establish confidence that data presented “are true, credible and believable” (p 3) and recommended several ways to accomplish this. Several methods that Forero et al. (2018) recommended were used in this study to increase the credibility of the findings including the use of the IPR framework step by step, standardizing the order and wording of the questions, and spending about an hour interacting with each participant. I restated the participants' answers during the interviews to reflect my understanding of their statements and to be an active listener who provides participant



validation, as emphasized by the findings of McGrath, Palmgren, and Liljedah (2019). Morse (2015) rejected the idea of member checking in the traditional sense of the participant reviewing the transcript or analysis of the interview and this method was rejected for this study. Instead, like Simpson and Quigley (2016), I provided a real time analysis of the statements and answers given to me and discussed these with the participant during the interview.

### **Data Analysis Results**

Data analysis from qualitative data is intended to summarize the information gathered during the interviews and to answer the RQs. According to Bengtsson (2016), qualitative data analysis is organizing and deriving meaning from the collected data to create conclusions that are realistic. I interviewed 8 arts educators from arts-based public charter schools and asked them questions in a semistructured interview format. Each interview took place either on the telephone or face to face and lasted about 1 hour. Interviews were recorded and then transcribed into electronic form. Data were then drawn from the interview transcripts and created 8 cases that were subjected to cross-case analysis, open coding, a priori coding and then latent analysis to address the research questions and to develop answers for each RQ.

The problem that many arts educators in arts-based public charter schools were not teaching EF skills to students with LD and ADHD in the arts classrooms initiated the development of two RQs, designed to collect data from the participants regarding their perceptions of teaching EF skills in the arts classroom, and their perceptions of what they

need to teach these skills. After analysis of the data, several themes and ideas emerged for each RQ which helped to describe the perceptions of the participants. Results are listed by RQ in order. All salient data were evaluated in the data analysis for this study, including discrepant cases and unexpected answers.

I dealt with discrepant cases and answers not by eliminating them, but by examining and including them in the description of the experience. Phoenix and Orr (2017) indicated that these differences do not invalidate the cases but help to describe more fully the experience, and the identification of them increases the evidence of quality in the study. When given the same interview questions, one participant described scenarios in a manner that was more reflective of how that educator used classroom management techniques proactively and reactively, often concentrating on describing in detail their own handling of the situations posed by the questions. By analyzing this participant's tone and responses it was noted that they were different from the other participant's reported perceptions of the problem and stood out as discrepant while coding the interview data.

The evidence of quality in this study was promoted by the incorporation of methods to ensure quality in each area. Roller (2019) described how the integration of indicators of quality through every step of the process would increase the total quality of this study. Indicators of quality were included through the diversity of the art forms represented by the participants in this study and through the careful planning of data requirements and methods needed to collect the appropriate information to answer the

RQs. Evidence of organizational quality was noted in this study by the transparency in the choice of a semistructured interview method, the development of the interview protocol, and in the mindfulness of potential bias, all of which Johnson et al. (2020) described as transparent methods and honest communication needed for the unique rigor required of a qualitative study such as this.

Quality is also reflected in this study through the emphasis of multiple analysis and organization of the data, the creation of the codebook, and in the consistency of the procedures used (Roller, 2019). Attia and Edge (2017) in their review of reflexive methods in quality research, indicated that the use of a reflexive journal in this study provided further evidence of quality by providing a self-monitor of the coding and by linking the raw data to the analysis. Computer analysis software supported quality by enabling the visual representation of the data and helping to identify connections which became themes (Woods, Paulus, Atkins, & Macklin, 2016). Lastly, quality was evidenced by the detailed descriptions of the methods for the collection, the analysis and interpretation of the results, and the decisions being made throughout the process (Roller, 2019).

***RQ1 - Perception that scaffolding must be ongoing.*** Participants described the shared perception that scaffolding of smaller skills leading towards a larger goal is common throughout all art classrooms. Black and Allen (2018) described scaffolding as types of teaching strategies that help students to achieve more than they could on their own and included such methods as modeling and active listening. Scaffolding support

strategies help fill in gaps in students' abilities and knowledge which allows them to complete the task (Belland, 2017). Every participant related some experiences of scaffolding strategies in the arts classroom

The participants in this study clearly planned for and utilized scaffolding strategies in order to help their students improve and grow in their skills and to persevere to a goal. The educational methods described by the participants exemplified all of the aspects of Black and Allen's (2018) scaffolding levels and demonstrated that the use of scaffolding strategies was a significant part of how they taught their art. Students with LD and ADHD needed scaffolding to focus them on the tasks that lead to a goal (Owens & Garcia, 2019). The participants were then able to provide prompts and hints to guide them in the right direction, while providing choices that were meaningful and reflected the most important parts. One of the most noted scaffolding strategies was modeling of the skills within the art form.

We want them to move forward, you know, we want them to go to the next step.

We want them to, you know, keep going to get to the end goal (#90241)

In improv instances where students try out different dance moves, that I've given to them, and I've scaffolded it, I've showed it, And I've modeled it, and I've had them, try it out, and we've talked about it, And then they just make the kinesthetic decision about what ones to use and what ones to not use, that don't fit them or work for them. (#45623)

I use a lot of coaxing, Come on, let's try it together, you know, going back up the

scaffold, because what I've done is I've shown them, We've probably tried it together, now they're on their own. So I go back up the ladder, I kind of win it back. Okay, well, watch me do it again. Okay, now with you. And I do it again. So I'm doing like a one on one scaffold. (#87610)

...when they would get up to perform, I would do these like coaching sessions And what we would do, we would actually use study hall time, where, after the rehearsal process, other people are working, she would come and sit with me on my desk. And we would mark her script in ways that when we put a slash here, that means you're going to take a one second breath, or one second, you know, just kind of, it's like a stop sign which helped the student to slow her speech and create a higher quality production. (54354)

So I would revisit the skills that I taught, specifically with coloring like so I would give you an example of coloring that is appropriate for their age, or how to be better like this is staying in the lines, you want to take your time, use the same pressure with your crayon or your pencil, I would show how to evenly color something. And an example of what not to do. So of what to do and what not to do. ((#37315)

When it's a really well-planned class, in the beginning you will have smaller increments of what you'll be doing towards the end in a larger way. So, you're scaffolding your student's skills. And helping them build on what they know. (#70092)

SCT in the arts classroom was demonstrated through the extensive use of scaffolding in arts learning. Scaffolding strategies require a great deal of interaction between teacher, student, and the environment, sometimes also including peers in the classroom, for both interactive and observational learning (Belland, 2017). In order to scaffold in the most effective way, a teacher must provide the temporary supports necessary for the student to master a task, while being careful not to give too much support or too little support (Mazursky-Horowitz et al., 2018). The participants in this study indicated that this planned scaffolding was regularly used for all students in the arts classroom, not only those students with ADHD and LD.

When the participants talked about the use of these strategies, they often used language that painted a picture of the close relationships developed between the participants and their arts students. These close relationships allowed the participants to get to know the students better and to be able to anticipate and plan for the scaffolding strategies that would work best with each student (Black & Allen, 2018). Participants expressed the perception that in order to teach their art in the classroom they developed close relationships with students which then enabled them to appropriately scaffold skills for the student's success.

When you know your students really well, and you've given something that might be a little bit difficult for them, then usually I say, all right, everybody take about two minutes to try it out on your own. First thing I do is to fly to that student. Because I know, you know, when I'm trying to be a little bit preemptive, I know

that they're going to struggle, so they're going to be my target, they're going to be the first one I go to. (#54354)

***RQ1 - Perception of student need for choice.*** The participants stated that they understood that some students have disabilities and that the students can't help it ut still make statements indicating that the students made choices to behave in certain ways. The participants made statements that indicated that they do not connect the EF skills of inhibitory control, cognitive flexibility, and memory skills to the student's disability.

And there's sometimes there's just some students who they just really wanted to do not do this week's project that they've been working on, or they just really wanted to practice what they want to do. And it's like, well, that's not what we're doing right now, but they keep insisting. (#37315)

But you know, they would just become adamant that this is the way it's got to be. And I noticed that to going back to multiple mentors and multiple teachers. There are some students who get very inflexible in like, Mrs. B. set it this way, or I do it this way. And I'm saying, I'm asking you to try it this way. (#45623)

The participants mentioned that choice is something that they offered to the students regularly but when the students demonstrated that they wanted to create their own choices and reject the choices offered, that became more problematic. The participants were normalized these behaviors as artist characteristics, and did not recognize that they could potentially be a demonstration of a deficit in EF skills.

There's a lot of students that want a lot of control, and they just can't take it when

they don't have it. They're perfectionists. There are a lot of perfectionists in arts.  
(#87610)

The theme of choice was also reiterated by how the participants approached their class time and classroom management. All but one participant reported that they routinely had a variety of options from which a student could choose. Participant #87610 recognized that the aspect of choice can also create problems when the students are too overwhelmed with having to decide. This participant remarked that choices are “freeing for some students, but other students, that actually causes a ton of anxiety of that I can choose anything...”(# 87610)

I usually have several projects going on at one time so that they can have other things to work on. And also, if the students are just getting frustrated, and breaking down and having outbursts because they're frustrated with that project, right? I'm just like, all right, we're just going to take a break on this project, and you're going to work on something else right now. (#87610)

The idea of decision-making and choice is often associated negatively with inhibitory control deficits (Jelihovschi, Cardoso, & Linhares, 2018). Students with ADHD are often considered to be impulsive, making decisions and choices quickly to the detriment of their performance (Wiklund, Yu, Tucker, & Marino, 2017). The participants referred to students as making the choice to be inflexible or unwilling to change what they are doing or how they are doing it. The inability to change or be flexible is a common characteristic of students with ADHD and is not their intentional choice



(Ziegler, Pedersen, Mowinckel, & Biele, 2016). Through their statements, the participants were demonstrating the perspective that inflexibility behaviors experienced in the arts classrooms were chosen consciously by the students, despite the disability diagnosis.

***RQ1 - Perception of the need for students to be interested in the art.*** All participants emphasized that the students were interested in the art form and that is was a motivator to them, especially in the arts-based charter public school. For learning to occur, a student must attend to a model, remember what the model did, be able to produce the modeled behavior, and be motivated to do so. Schunk and DiBenedetto (2020) also described motivation in SCT as the feeling that starts and sustains goal-directed actions. Participant #37315 stated “The only reason why people continue art is because they want to do art. Because there's a lot of failure with art.” Participant #45623 posited that “Maybe that's why things like the arts are so successful with students with disabilities, because, you know, they're really making those relationships with people who have the same interests. Both teacher and peers.” Participant #70092 explained that it was more difficult in the arts classroom when the student wasn't interested in the art itself. Commonly the participants described the perception of the students having a driving interest in the art forms and that this interest was important as a motivator for students with LD and ADHD in the arts classroom. According to participant #45623 stated “They have to be self-motivated to make their art. So that was challenging, when there would be students that really didn't really didn't want to want to do it.”

There is a mindset and a certain type of student that's going to come to an art

school, then what you're going to get in a public school or a charter school that is not arts focused, you know, So right off the bat, you've got students who are for the most part, interested in art form in some way. ((#70092)

The interest in the art form is wrapped up in the ability to be self-disciplined. It was a matter of whether I like this or want to do it. And that kind of goes into the self-discipline, and even the prioritizing, like, well, we gotta have this done first, before you can go do that. So.... nobody's forcing them, they have to have that. Inside that's kind of like that inside thing. Yeah, they have to be self-motivated. (#87610).

The participants described a perception that students with LD and ADHD need to be interested in the art form in order to progress, especially when encountering difficulties or setbacks. Foster and Marcus Jenkins (2017) described how children who had a passion for an interest or skill were able to participate and enjoy an activity that is related to their interest and will display more continued engagement and perseverance in the activity. There is a connection between the EF skill of self-regulation and motivation.

***RQ1 - Perception of the group mentality.*** The theme of a group mentality was indicated with every participant in this study and involved the larger group, strategic smaller groups, and student/student and student/teacher pairs. Belland (2017) defined cultural knowledge as knowledge, tendencies, and skills that are shared by a group of people. A group of students and teachers participating, learning, and communicating in the arts classroom can effectively be considered a group with a cultural knowledge. This

cultural or group mentality can be used to develop long-term behaviors and skills within the cultural knowledge of the art form (Gooden, Creque, & Chin-Loy, 2017). Three of the participants mentioned that it is important to have a good classroom climate to make this successful.

I say, Hey, let's all work in small group, right, where I have a go-to student that can go to them. Those are the kinds of skills that you end up teaching as a group. (#20239)

If I know a student is probably going to have a little bit of trouble, let me split them up in groups. And I'll strategically do it where she's with student B who I know is going to catch on to this really quickly. So that would kind of would that kind of be your response to it (#45623).

I'm gonna pair you up with somebody else. And you're going to help each other with the transitions. So, I would give the whole class A 20 minutes to analyze their transitions. So, If I had two kids that weren't struggling, they would just be identifying, Oh, you transitioned by doing this, I think you could make it better by doing this. This is another option. But then that was 20 minutes, that I could have that student that was struggling with their transitions, work with another student on creating transitions and some like a peer coaching them through (#45623)

Yeah, I think it's only really successful when you have a good classroom climate though. If you have a studio, you have more competitiveness, and more, just a less supportive group of kids. And a climate that's not you know, community based,

that doesn't, that's not so successful. But if you can really establish peer to peer relationships and peer to peer support, that's when they can access, you know, their experts. (#37315)

Several participants described using the group for initial idea generation in the art. #37315 stated, “We have a lot of open discussions before we even make art.” while others discussed their perception of the group as a flexible number of students, sometimes the whole class, sometimes small groups, and sometimes pairs of peers who work together. Participant ##48891 stated, “That was that whole dynamic of the other students in that classroom and how they all kind of felt supported by each other as well, because of that group dynamic.”

What I usually do, we spend a lot of time on idea generation, because that is so challenging for students. The harder part is coming up with the idea so we do a lot of word webs and brainstorming as a class, okay, actually have them get started as a class. And we'll come up with ideas as a group. And then I'll have them work independently, and then share their ideas and small groups to talk it out. (#87610)

The use of the group is described as helping to establish growth in skills and ideas in the arts through providing and accepting group-centered critiques as well as to encourage preferred behaviors. Participant #90241 stated “It’s about giving feedback, and not being negative towards somebody too. And I think that helped everybody build confidence in themselves and speaking”. Participant #54354 reported “...they then saw everybody else trying it a different way. They're like, Oh, well, that's not so bad.

Everybody else is doing it. You know, and sometimes that works, too. Yeah, the peer influence is always great.” Finally, the perception of the importance of the group mentality was best demonstrated through the statement of the participant #87610 who said, “The world does not exist in silos, you know, the world is all interwoven, you know, we all affect other and things in our lives, etc. So, you can't just isolate things.”

Collaboration and group creativity have been a hallmark of teaching and learning in the creative arts classrooms and studios (Rousell & Fell, 2018). Similarly, the perception of the participants is that the group mentality is an important part of working with students with LD and ADHD in the arts classroom, and the relationships established within the arts culture are used to teach and support each other in the art.

***RQ1 - Perception of no special education help in the arts classroom.*** A consistent theme in the interview responses was that there was a lack of any special education staff support in the arts classroom to help teach EF skills to students with LD and ADHD. None of the participants included a description of any partnerships with or support from the special education staff in the school although coteaching between special education staff and general education staff has been noted to help teachers differentiate instruction, scaffold learning activities, and monitor the student’s comprehension (Ricci, Persiani, & Williams, 2019). General education teachers in English, Math, and Science often have additional support staff in their classroom (Ricci et al., 2019). ESSA firmly requires inclusion for all students into the general education curriculum, including music and arts curriculum and experiences (Arts Education

Collaborative) and guidelines and recommended best practices for students with LD and ADHD included into the general education classroom describe the importance of cooperation and specialized supports and services to allow all students to access their FAPE (Calhoun, Berkeley, & Scanlon, 2019).

There are several suggested best practices specifically addressing the inclusion of students with learning disabilities into arts classes including music (Merck, & Johnson, 2017; Zdzinski, 2018), theatre (Parrish, Sherman, & Fletcher, 2017), visual arts (Wexler, 2016), and dance (Zitomer, 2017). A commonality with all the recommendations is for cooperation and collaboration between the arts educators and the special education teachers and support staff. It is important to note, then, that these participants are handling inclusion without extra support from special education staff within the classroom, and that often the supports in EF skills are provided independently of any special education collaboration or cooperation.

***RQ2 - Need to be trained similarly to teachers in general education classes.***

When questioned about what the participants needed in order to best support the EF needs of students with LD and ADHD in the arts classroom the teachers indicated that they wanted to be held to the same standards as teachers of academic subjects and courses. The participants suggested more training in classroom management skills, scaffolding skills, and lesson planning skills. Only participant # #45623 recommended further training in special education topics.

Specific to the arts classroom, stated several statements were made indicating that

arts educators needed training in the area of how to quantify their art form in order to create goal and steps towards these goals. Participant # 87610 felt that many artists find the assessment of their art form to be very difficult, since their perspective of their own art form was more qualitative. This made creating grades for the arts classes difficult for some arts educators. This insight provided a deeper perspective of the participant experience in the arts-based public charter school. Artists in the role of educators are expected to quantify something that is difficult for the artist/educator to quantify by a grade. Most educators tend to measure how well a student has mastered a set of skills by providing a grade that represents this standard, yet the participants reflected that they had difficulty giving a grade based on a subjective assessment of someone else's art. Participant #90241 viewed the tracking of success by grading and assessment to be more of a way to track the teacher's success, rather than the student's success, reflecting a much more data driven view of the art form

You've got administration that has got the arts at the forefront of everything. Even though we still have general curriculum, what can we do to also infuse the arts, which is very different than public schools, it's just seen as a special. Here we are supposed to develop the whole, you know, the whole child. ((# 90241)

Yeah, making your art form data driven, in the respect of how are you tracking student success? But how are you tracking your success as a teacher in a, you know, qualitative and quantitative way. It's really important with kids with disabilities, you know, the tracking part. (#37315)

I'm successful, because my students do well in a performance. But I only know that they do well, in a performance because I think they do well, or somebody told me they do well, right. What is well, like, what how do I know? I think most artists are hard on themselves, they're going to look into Oh, well, this person made this mistake of this. But you know, and that doesn't mean they didn't do well. ((#45623))

I'm not saying that all of your final product has to be put in number some way. But there's got to be some skills along the way that you can quantify, you know, in a proficiency rubric, or, you know, in in some way. For visual art teachers, that's the final portrait is quantified in some way, Therefore, helping you quantify your success. But there's got to be a way that the skills that went into producing your final product, There's got to be a way that you can take it even down to paint, you know, how the hand is placed in paint strokes? And that's what we want to quantify is what are the skills that they're going to need going forward. ((#54354))

As a group the participants looked for a way to better assess the art process and not the art product. Assessments that are authentic and formative are more representative of the SCT, as opposed to classroom assessments that are in time-limited response formats with prompts in the form of specific questions that the student is required to interpret. Authentic, formative assessments can be such things as teacher reflection journals, rubrics, student notebooks, and portfolios. Participants expressed their perspective that they require more training and development on assessments, planning,



and scaffolding, similar to the expectations held for teachers of academic subjects.

### **Summary of Findings**

Participants from arts-based public charter schools described their perspectives regarding experiences teaching EF skills to students with LD and ADHD in the arts classroom. These participants discussed how students with LD and ADHD are in the arts classroom without special education staff help or support, and how they make up the greatest number of students with IEPs in their classrooms. Participants also expressed that there were several methods and ideas that were common while teaching these students in the arts classroom, with the common themes scaffolding, choice, interest in the art form, and group mentality. All of the participants interviewed were able to recall and describe situations that involved teaching students with LD and ADHD in the areas of EF skills in the arts classrooms. Many of the student behaviors that involve EF skills were attributed not to any disability, but to the personality and mindset of an artist even though the arts educators were aware of the LD or ADHD diagnosis of the students described.

Participants consistently described their frustrations when experiencing EF-related difficulties, and described ways that they helped students through these situations by scaffolding and offering choices, and by using the student's interest in the art form as well as the group or community mentality. Participants described what trainings would help them to teach EF skills in the arts classroom. Notably, participants did not request more special education training, or even more special education support. The arts

educators unanimously desired to be held to the same standards as the teachers of academic subjects in the arts-based charter school and requested more training on how to create assessments and how to manage the arts classroom.

A specific difficulty for participants was how to quantify art, music, dance, or theatre skills in order to give all students grades as required by the school, while at the same time teaching the art form and emphasizing creativity and personal ownership. The use of methods such as having students turn in logs of their practice times, giving written tests of relevant vocabulary, grading students on how accurately theatre script lines were memorized, and grading of a finished art product in comparison to a model in order to quantify the art often resulted in lower grades and frustrations for the students with EF deficits. Statements made by the participants indicated that they felt great pressure to encourage and progress the students through the art and to grade and quantify the progress in the classroom to result in a grade, while simultaneously educating not just the artistic child, but the whole child.

Participants described their awareness of the triadic interrelationships between the environment, the teacher, and students as it applies to their art form. They also discussed aspects of self-efficacy, motivation, perseverance, and self-agency as influential in the teaching and learning of their art form. Participants were aware of and understood EF skills deficits and the importance of helping students with LD and ADHD to acquire these skills, but also that they felt that they needed to be held to the same educational standards to educate the whole child, and not just the artistic part of the child.

Arts educators required a practical method to provide direction, tools, and guidelines for the merger of the academic pedagogy of the classroom teacher and the creative and individually-motivated artistic pedagogy of the arts educator in terms of instruction of EF skills within the arts classroom. The deliverable project must allow both instruction and progress and the instruction of EF skills for students with LD and ADHD through SCT methods in the arts classroom.

### **Proposed Project**

Based on the findings of this study, the proposed project was the creation of a hybrid Professional Development (PD) geared to arts educators to increase their professional knowledge of SCT, EF Skills, and formative assessment methods, and to provide a hands-on training to bring EF skills teaching into the arts classroom. This PD would have asynchronous modules in an online virtual classroom and a face-to-face synchronous portion where the arts educators will meet and establish a community of professionals. Lastly, there will be a follow up with the arts educators later in the school year to evaluate their own progress, and to focus on their self-efficacy and new goal-setting.

A practical template will be created and taught which that combines the SCT-based ideas of the Assessment as Learning (AaL) methods used in Canada, the United Kingdom (UK), and Australia, and used in various states in the United States with the curricular requirements of the arts classroom. With this template, arts educators will help individual students develop a checklist of learning strategies and small goals that will

encourage students to engage with the task and teach them how to eventually self-regulate. By focusing on these formative evaluations, help-seeking, and the development of strategies through the use of the template the SCT framework was used to help teachers teach EF skills while supporting students' engagement in the arts.

### Section 3: The Project

The project was driven by information collected in this study regarding perspectives of arts educators about teaching EF skills to students with LD and ADHD in the arts classroom, as well as their perceptions about what they need to accomplish this. The purpose of this project was to respond to the perspectives of the participants by providing the tools and knowledge needed to teach EF skills to students with LD and ADHD in the arts classroom. Anderson and Östlund (2017) interviewed special education teachers and paraprofessionals who used the AAL skills of breaking tasks down, identifying personal strengths and deficits, and the creation of a plan to learn the skills that are lacking in order to attain a goal. These special education teachers reported that in order to develop these student goals, it was important that the students work together with the teacher in the development of this plan (Anderson & Östlund, 2017). The target audience for this project is arts educators in arts-based charter public schools in Pennsylvania, with the potential larger target being any arts educators in any other type of school. The target stakeholders of this PD are charter schools for the arts arts educators, administrators, special education staff members, families, and students in the arts classroom.

#### **Rationale**

There were two rationales for developing this PD in a hybrid format. The first rationale was to use learning methods that are the most effective and comfortable for the arts educators, while making the best use of the limited time and funding for arts-based

teacher PD. Nwosisi, Ferreira, Rosenberg, and Walsh 2016) in a review of the reasons school use hybrid PD methods, indicated that the hybrid format is becoming more popular in schools to effectively use training funds, make the best use of teacher time out of the classroom, and to allow for independent learning of concepts which results in an optimization of training. Teräs and Kartoğlu (2017) found in their study on online professional development that the blended format allows for an authentic learning experiences to better give meaning to the activities in the PD. Pantaleo (2019), in the study of the studio habits of mind of artists, described how an artist improves their craft through extensive authentic hands-on experience and practice, and may respond better to the blended format, learning in a way that is familiar to the processes of learning in their art.

The second reason for the selection of a hybrid PD format is that the use of the hybrid PD combines the acquisition of new knowledge using the online asynchronous modules and the interaction, modeling, and feedback that is integral to the SCT in the face-to-face portion of the PD. Hogan and Winner (2019) studied music ensemble teachers and determined that many artists rely upon social learning situations when creating their art, especially for learning by modeling, critique, and feedback for change. The visual arts and music teachers in the study reported that the authentic practice of their artistic discipline naturally involved the skills of persistence, reflection, exploration, and social interaction, modeling, and feedback, which are also used within the hybrid PD format (Hogan & Winner, 2019). Additionally, the design of this PD includes online pre-

and post-quizzes, face-to-face reflective professional discussions, and a self-evaluation during the follow-up portion. This study addressed the problem that arts educators in arts-based public charter schools in Pennsylvania are not teaching EF skills to students with LD and ADHD while teaching their arts. By providing a flexible hybrid PD with a focus on bringing the pedagogy of EF skills instruction into arts classes and through the implementation of a template to teach EF skills, the project touches upon all potential needs identified by participants in this study.

### **Review of the Literature**

The hybrid teacher PD format makes good use of arts educators limited available training time. Elliott (2017) in his study of the transition from traditional teacher PD to online or hybrid PD, found that the online PD was demonstrated best practices for adult learning in the areas of content, active learning, clarity, and participation. This new type of PD was most effective when it was created initially as an online PD and not simply a PD that was not designed specifically for the online platform and moved onto online version (Elliott, 2017). Yoo (2016) specifically studied online PD for teachers and determined through the use of the Teacher's Sense of Efficacy Scale (TSES) that online educator professional development increased teacher self-rated levels of efficacy. The teachers who participated in the study reported that the increase of their knowledge gained through the online PD was the reason that their self-efficacy increased (Yoo, 2016).

The second reason that a hybrid PD is the most appropriate method to address

this problem is that it includes both online aspects and face-to-face learning opportunities. The SCT was used to guide the development of this project through the incorporation of assessing and modeling and consistent feedback. Additionally, the face to face portion of this PD puts arts teachers into a collective class, cohort, or professional community with common background knowledge.

The PD created in this project was based on findings from this study, was appropriate to address the problem, and represented the SCT which was used to guide the development of the study. This PD focused on teaching strategies to go along with arts curricular content and emphasized specific supports for classroom arts contexts. Brownell et al. (2017) in their study of teacher outcomes after completion of either content-focused PD or curriculum-only- based PD, found that the teachers who experienced the content-focused PD spent more time teaching and practicing the newly-learned methods than the teachers who experienced the curriculum-based PD. This content-based PD will help the participants of the PD actively connect theory to practice of their new skills within arts classrooms which Bates and Morgan, (2018) indicated in their description of elements of effective teacher PD is an important factor to teacher acceptance and implementation of changes in practice.

This PD contains active learning opportunities for the arts educators both in the online modules and in the face-to-face portion. When reviewing successful PD, Bates and Morgan (2018) recommended active engagement that would encourage the arts educators to contemplate questions and reflect on the struggle of the student while sometimes



experiencing the same cognitive or physical struggle themselves. Bautista, Yau, and Wong (2017) determined that the active learning opportunities provided most often in effective PD for music educators were teacher observation and modeling, reflective discussion, planning of curriculum material, and research and writing. The hybrid PD contains all four opportunities for active learning by offering an opportunity to observe the face-to-face presenter actively modeling and using the template, by completing reflective questions of scenarios and having discussions in the group face-to-face portion, through actual planning of the use of the template in the arts classroom, and when researching the state standards for the arts and writing their learning objectives and template using these guidelines.

When analyzing all parts of the PD agendas for active learning opportunities, the activities labelled as performance are active learning situations. In the online modules, 54.5% of the activities are performance, and in the face-to-face portion 59.3% are active learning opportunities. Additionally, Ishii (2017) described how active learning opportunities can be included into teacher PD through the creation of a professional learning community in which there is dynamic discussion and reflection This PD provides this reflection opportunity both in the face-to-face portion and in the follow-up portion later in the school year.

A high-quality teacher PD is one that provides a place or way for teachers to collaborate with others and potentially create positive social change in the culture of their school. Ostovar-Nameghi and Sheikahmadi (2016) in their review of effective teacher

PD indicated that most PD is created and driven by administration or is controlled by someone outside of the group being trained which creates a sense of non-ownership by the participants. Akiba, Murata, Howard, and Wilkinson (2019) studied the importance of active learning activities within Professional Learning Communities (PLC) and found that positive social are particularly effective when they are used with information regarding how students think as the guiding framework. Darling-Hammond (2017) in their review of literature on teacher PD, determined that one to one, small group, or whole school collaboration activities were one of the seven effective elements of professional development. The hybrid PD created as a result of this study contains frequent collaboration opportunities in the face-to-face portions that are designed to create a sense of comradery with other art teachers, to promote learning from peers, and to encourage ownership of the PD.

Another effective element of teacher PD as determined by Darling-Hammond, Hyler, and Gardner (2017) is that the PD should be of sustained duration. The project PD is designed to be held over three days rather than in just one day. Patton and Parker (2017) interviewed 70 teachers about PD and communities of practice in higher education settings throughout North America, Scandinavia, Europe, and Southeast Asia and found that commonalities of a good collaboration opportunity require time, a common focus, a safe space, a commitment to change, and a trusting relationship between collaborators. Further, Bates and Morgan (2018) elaborated on the importance of collaboration by describing one-time workshops as experiences that do not allow for the true development

of peer relationships and which may provide a false sense of comradery with nothing being accomplished. Griese, Rösken-Winter, and Binner (2020) in their study of teacher PD and collaboration, determined that much of the responsibility for the facilitation of professional collaboration relationships in the limited PD time falls to the presenter of the PD which requires the presenter to set the stage by role-modeling and encouraging active listening. This PD is designed to provide less of presenter-controlled discussion and more of the presenter-facilitated interactions between participants.

Lastly, it is important to develop like-minded professional relationships for arts teachers who are often isolated in schools. Hall and Thomson (2017) observed and interviewed practicing artists who were also teaching in several London schools and reported that art teachers are often seen as outsiders who learn, think, and teach in their own special way, have their own methodologies different from the other teachers, and are viewed as a different status than teacher of core subjects. Bautista, Stanley and Candusso (2020) reviewed multiple arts teachers in Brazil and found that their isolation was physical, emotional, and social and that these educators required arts-specific PD to create collaborative associations with other arts educators to reduce the feelings of isolation.

The modelling of effective practices is not only an element of an effective teacher PD but effects a change of behavior rather than just a change in thinking. Bates and Morgan (2018) described that educators benefit most in PD by seeing the methods and practices being taught in action whether on video or in person, and respond even better by

working directly with the materials immediately after seeing it modeled. Sims and Fletcher-Wood (2018) compared the policies of teacher PD between the UK and America and indicated that a commonality in both countries an added benefit of modelling in a teacher PD is that it is especially effective with novice teachers, who often need more direction and who would be more easily overwhelmed by situations (Sims, & Fletcher-Wood, 2018). As part of the regular methods of teaching in the arts, the use of modeling in a PD targeted to arts educators would be a comfortable and familiar presentation.

Coaching is one of the support methods arts educators use to teach their students in the arts classroom, and is also an element of an effective PD. Working one-on-one in an arts educator's classroom would be the ultimate in individualized PD and learning experience. The PD provides a coaching aspect in the follow-up portion. In absence of extensive coaching, this PD allows time for the arts educators to discuss their own incidents and scenarios in their classroom, ensuring that the most important aspects of the educator's needs are covered. Leighton et al. (2018) followed an educator and their coach while using digital technologies for interactions and found that the teacher reported several benefits of this method including increased flexibility of communication across time and distance and a reported increase in the teacher's self-efficacy, allowing the deeper exploration of topics that were individually important to the teacher. There are opportunities in this PD for coaching specifically in a virtual format in the follow-up portion in order to better support the arts educators.

The next indicator of a quality PD reported by Darling-Hammond et al. (2017) is

that it provides opportunities for feedback and reflection about the teacher's practice, allowing them to make cognitive choices about their methods and to move towards their personal goals. In the area of EF skills acquisition and improvement, giving students an opportunity to reflect and to make cognitive decisions about their behaviors and actions is beneficial for the assimilation of the behaviors taught (Zelazo et al., 2018). Similarly, reflection and self-evaluation are linked to a teacher's self- agency, or the feeling that they have the ability to make things happen in their sphere of influence (Fletcher, 2016). Lamb (2017) in a case study of 25 teachers who completed questionnaires regarding feedback found that although self- assessment is a good feedback source for teachers, peer and mentor feedback can reinforce and support the educator's self-determined feedback. One benefit of the structure of this PD, is that it allows reflection time for the educators in order to process their feedback.

This PD's extended half-day repetition of concept practice and a follow-up later in the year are examples of the final element of a quality PD which is to be of sustained duration. Bates and Morgan (2018) stated that although the commitment to an extended PD opportunity might require specific funding and time prioritization at the school, when compared to a one-off workshop requiring less time and commitment, the benefits of the sustained training makes the additional effort worthwhile. Al Asmari (2016) studied 121 teachers in Saudi Arabia who filled out questionnaires regarding their perceptions of teacher PD and reported that a PD of a week rather than that of only one workshop or day increased the awareness of their knowledge, their behaviors, and the influences around

them. This PD provides these time opportunities to allow the arts teachers to develop into greater professionals in the field.

This PD is framed by the SCT both in how the PD is presented to arts educators and in how the AaL methods will be used within the classroom to guide students as they develop and increase their EF skills. Eun (2019) reviewed two methods using theories of human development to frame teacher training and found that the SCT- trainings explained achievement and development with great validity and were more effective in translating teacher training into improved classroom performance Yoo (2016) reflected on the importance of feedback to teachers throughout an effective PD, reflecting the use of a learning coach who gave encouragement and feedback. use of the SCT is a particularly effective framework for educator's PD in that it combines the ideas of obtaining new information, of developing strategies of practicing the new concepts, and predicting not only the educator's ability to use the learned concept as well as the ability for the students to learn the novel items.

The literature review for this section of the project focused on topics related to the collected data and the professional development training for arts educators developed to address the problem stated in the study. Relevant sources were retrieved from Google Scholar and the Walden University online library. Search terms were *effective professional development, social cognitive theory professional development, teacher perception of professional development, teacher self-efficacy, arts teacher professional development, hybrid professional development, face-to-face professional development,*

*online PD for teachers, Bandura, instructional coaching, online training methods, and high-quality professional development, barriers to PD.* Saturation was reached when search terms returned redundant items and when remaining sources were deemed unimportant to the study.

### **Project Description**

The PD created from the results of this study is a 3-part PD made up of an online asynchronous instruction of EF skills and AaL information and a face -to-face synchronous interactive portion where arts educator experience, model, and discover strategies using the template that are specific to their arts classroom. The third part of the PD consists of a follow-up feedback portion with either the trainer or with the art educator's own supervisors. The project template name is OPUS and represents not only a term used within the arts to describe an artist's completed work, but also represents the parts of the AaL methods with O standing for Learning Objectives, P representing Parts of the goal, U standing for the Unique learning needs, and S meaning Self-evaluate (Figure 2 & Figure 3)

**OPUS** Objective, Parts of the Objective, Unique strengths and needs, Self-evaluation

Learning Objective

Parts of the Objective	Skills required for the Part	Unique Strengths and Needs- How often?		
		Beginning N,S,M	During N,S,M	After N,S,M

N= Not that much S = Some of the time M = Most of the time

Figure 2: The OPUS Template- Used to plan for EF skills learning in the arts classroom

**OPUS** Objective, Parts of the Objective, Unique strengths and needs, Self-evaluation

List of Beginning Skills that are "N" rated	Places, people, or strategies to help get past this roadblock	List of beginning Skills that are "S" rated	Places, people, or strategies to help get past this roadblock

Figure 3: Page 2 of the OPUS Template- Used to monitor goal setting and progress using EF skills in arts classroom

**Resources**

Resources required for the development of the PD are broken into three sections: online PD, face-to-face PD, and follow-up/feedback. Existing supports are noted within the sections.



**Online portion.** The online asynchronous portion of the PD was developed using Google Classroom. The online portion consists of the two learning modules focusing on information about EF Skills and information about the ideas of Assessment FOR, AS, and OF Learning. The content setup of the online modules closely resembles the concept of the flipped classroom which is a unique framework for teaching proposed by Jonathan Bergman and studied by Inan, Balakrishnan, and Refeque (2019) specifically with the use of technology. The 14 educators and 56 students interviewed indicated that the flipped classroom method used flexible methods that included technology to empower students by allowing them to come to class with the base knowledge needed so that the classroom time could be used to go further with that knowledge (Inan et al., 2019 ). This PD uses the flipped classroom pedagogy by providing a Google classroom with prerecorded videos, PowerPoint presentations on foundational information, interactive activities, reflection sheets, and pre- and post-quizzes in online asynchronous format, allowing arts educators to watch, learn and review the information on their own time prior to the face-to-face PD portion. This online presentation will be provided to arts educators over the summer months with the face-to-face portions scheduled at a convenient date when school is in session. The online portion requires the participants to have computer and internet access and a google account address.

**Face-to-face portion.** The face-to-face portion of the PD requires three half-days of interactive work with other arts educators, presentations created from the foundational work, and opportunities to discuss and discover use of the template specific to each art

form. The presenter will use audiovisual equipment, computers and laptops, internet, and external hard drives to successfully deliver the face-to-face portion of the PD, as well as any materials required for the demonstrations such as origami paper, markers, large paper for group activities, and paper copies of the template. These materials are listed in the agendas for the PD .(See Appendix A).

***Follow-up portion.*** The follow-up portion of the PD brings the three phases of the PD to a formative conclusion to help the teacher self-assess, discuss and gain feedback and plan for future changes. The follow-up portion requires the resources of the OPUS template and rubric used for the arts educator’s self-evaluation of their progress see figure 4). The arts educator can use this follow-up to communicate with their principal or evaluator at school regarding the outcomes of the PD, their personal progress, student progress, and plans for the future. The discussion can occur within the standard observation schedule as determined by the school administration and would not require an additional purposeful observation in order to complete the follow-up.

**OPUS**

Objective, Parts of the Objective, Unique strengths and needs, Self-evaluation

Self-Evaluation - At the end of the Activity, Circle the number that best describes your performance.

	4	3	2	1
Clearly stated the learning objective and goals in the beginning	I very clearly understood what my goal was in the beginning.	I mostly understood what my goal was in the beginning, but understood it better in the middle	I understood only a little of the goal in the beginning and didn't understand any more when I was in the middle	I did not understand my goal or had to start again because I was going in the wrong direction.
Separated goals into steps in the beginning	I separated the goal into all of the steps I needed to follow to complete the goal.	I mostly separated the goal into the steps I needed to follow, but missed or mixed up a small number of the steps	I separated the goal into steps but missed or mixed up some of the steps and had to redo some things	I did not separate the goal into steps or I missed or mixed up many of the steps and had to start again.
Assessed my individual skills and areas of need	I was able to assess myself and clearly knew what I could do and what I would need more help to do.	I mostly assessed myself and pretty much knew what I could do and what I needed more help to do with a small number of surprises	I assessed myself but was unable to accurately know what I could do or what I needed more help to do and I had to redo some things or get more help.	I was unable to assess myself or did not accurately find out what I could do and what I needed more help to do and had to start again.
Monitored my progress throughout	I monitored my progress through the steps often during the activity	I mostly monitored my progress through the activity.	I monitored my progress a very small amount and had to redo some things.	I did not monitor my progress through the steps and had to start again.
Found and used ways to get past any roadblocks	I used my strategies or supports to get past any roadblocks to progress.	I mostly used my strategies or supports but was stuck a few times.	I used my strategies or supports less than I should have and had to redo some things.	I did not use my strategies or supports and stopped my progress or had to start again.

*Figure 4: The OPUS Rubric – Used for self-evaluation at the completion of the goal*

Van der Klink, Kools, Avissar, White, and Sakata (2017) interviewed 25 experienced teachers from the Netherlands, Israel, the Czech Republic, Australia, Spain, Belgium and Japan who reported that time spent with their supervisor after attendance in a PD was used to communicate with their principal or evaluator at school regarding the outcomes of the PD, their personal progress, student progress, and to discuss their plans for the future. The significance of his follow-up after a PD to the teacher was indicated by all of the participants to be strongly related to their motivation and to their desire to continue to develop professionally (Van der Klink et al., 2017). The follow-up portion of this PD should not be ignored, since it represents an important motivation activity and self-evaluation opportunity.

### **Potential Barriers**

Potential barriers to implementing the PD may include the possibility of

resistance to participation and change in methods, and the lack of time required for the three parts of the PD. In order to change a practice, teachers require acceptance of the need for change, the time to learn the new practices, and the opportunity to put the new practices into place with feedback. Kelly (2019) described how resistance to methodological change is a common experience with educational PD, especially when the information is not seen as valuable or feasible or if it goes against their teaching philosophy. A possible solution to this barrier would be to make the PD purposeful within the educational environment and provide a definitive goal towards which the participants could strive.

An ideological barrier is that the arts educator may believe that they do not have the empirical academic knowledge to be successful in the PD, placing themselves into an intellectually compromised situation. Technology barriers would be limiting if the arts educator participants are unable to access Google Classroom or do not have a Google account, or if their computer or Internet is non-functional. Potential solutions to technology issues would be to complete online modules within the school building, using its resources rather than their own as well as school IT supports to assist them to access the course.

### **Proposal for Implementation and Timetable**

My intention is to make a proposal to several Boards of Directors for arts-based charter schools in Pennsylvania in May 2021 to request permission to start the asynchronous online portion in the summer of 2021 and the face-to-face portion during

August teacher preparation. During the presentations for the Boards, I will present the findings of my study and the details of the proposed PD. Upon approval from the Board, I will proceed with the planning and organizing of the events by contacting the teachers who will be involved in the PD to state the objectives, expectations, and benefits of the PD. To prepare for the PD I will check that the online content and materials on Google Classroom are prepared and accessible and provide the online PD link to the arts educators for the online modules. As the PD face-to-face portion comes closer, I will contact the administrator of the school to confirm dates and times of the face-to-face portion and gather the materials needed.

### **Roles and Responsibilities**

The role of the presenter as the teacher within this PD includes the tasks of set up and preparation for the PD, but also involves the modeling of SCT by providing for the cognitive and social aspects of learning the self-assessment of the participants, and the creation of future plans for change. The presenter's role in an effective PD is to provide a pathway for professional learning directed towards the school and teacher goals and to use data to monitor the effects (Wicks, 2017). The presenter will send links to the online portion to the participants and will set up the face-to-face portion. Following the PD, the presenter will follow up with the participants and offer support with the implementation of the OPUS template. In the face-to-face portion, part of the presenter's role is to develop a collaborative environment where participation as well as vicarious learning can take place (McClellan, 2017). Lastly, the presenter's role is to collaborate and assist

participants to review self-assessments, and plan for future change process (Hill, Lynch, Gonzalez, & Pollard, 2020).

The participant's role in this PD is to be an active part in the learning that is an integral part of their profession by challenging their previously-learned ideas and to continue to evolve their teaching practice (Makovec, 2018). Professional development is a process that is not only an individual learning model, but one in which educators can learn with and from each other (De Smul, Heirweg, Van Keer, Devos, & Vandeveld, 2018). Arts educators need to complete the individual three online modules asynchronously during the summer, attend and actively participating in activities during the face-to-face portion, and utilize the OPUS template provided in the PD in the classroom. The roles of the presenter and the participant are both parts of the PD that work together with the asynchronous and synchronous aspects of the hybrid PD increasing educator's knowledge base allowing for a change of practice and eventually improving student outcomes.

### **Project Evaluation Plan**

Evaluation methods for the PD for arts educators is formative throughout the experience and summative at the end of the PD Formative assessments based on participant interactions in groups, discussions, and activities are offered throughout the face-to-face portion of the PD in order to provide a voice for all participants and to address their successful progress through the learning process. This self-evaluation encourages the development of metacognitive thinking, allowing the arts educators to

reflect on themselves as learners, to identify their learning style, and how they learn best. A final self-evaluation, although technically a summative assessment, is also used in a formative manner as it encourages the arts educators to set learning goals, identify what they have learned and what they still need to learn, and act on the feedback. There is a pre-quiz in the beginning of each module which previews the most important goals and concepts prior to the learning session. The post-quiz is administered after the module is completed. This method of pre- and post- quizzes not only results in better retention of the content taught, but also plays an important part of SCT and the ideas of AaL. The goal of this pre-quiz is to encourage the arts educators to self-evaluate their knowledge base and set goals for what to look for in the lesson.

A self-evaluation will be completed at the end of the face-to-face portion and again during the follow-up portion of the PD. Summative self-evaluations are an integral part of an educator's professionalism and accountability, as well as a method to evaluate participant's learning and the attainment of the goal of the PD (Jamieson, & Shaw, 2019). The goal of this rubric-based self-evaluation is to replicate and model the self-reflective phase of the PD and assist arts educators in identifying their strengths and weaknesses of the implementation of the practices learned as well as to plan for future goals. The overall goal of this PD is to increase the knowledge base of the teaching of EF skills incorporate the teaching of EF skills to students with LD and ADHD while in the arts classroom. When educators learn about theories and concepts through an online PD, their self-efficacy increased and they reported positive changes in terms of their ability to be

successful as teachers.

The overall evaluation goal is one of self-reflection and continued growth in the profession. By mirroring the sense of goal setting and review of progress expected in the PD and template, the course evaluation serves as another form of modeling to show participants that their feedback is important. At the end of the face-to-face portion, participants will be asked to evaluate the synchronous portion using a Google Forms survey in a Likert scale format, similar to the summative evaluation after the online modules. Stakeholders with interest in the results of this PD are arts teachers, their administrators, and the charter school board, who each have different priorities and interests in the effectiveness of the PD.

### **Project Implications**

A possible implication for local social change resulting from this project is that participants use their knowledge gained and increased self-efficacy to impact the general achievement of students with LD and ADHD. This change may be seen in both greater effectiveness of arts teachers, and in the general success of students that they teach. Bourn (2016) in his study of social change in education, indicated that learning is at the heart of social change. The PD created in this study will transform the teachers who participate by increasing their knowledge base and by supporting and encouraging methods that are student participation-centered to support the development of EF skills in students with LD and ADHD within the arts classroom (Bourn, 2016).



## Section 4: Reflections and Conclusions

### **Project Strengths and Limitations**

I created a hybrid PD as my project based upon the findings of this study. The PD has several identified strengths. The hybrid format of this PD allows for asynchronous learning of foundational skills for arts educators during non-school months. This allows face-to-face training to be used for interaction and activities which participants will use to develop and refine strategies for the implementation of the OPUS template. Teacher participants in online hybrid trainings studied by Ilaria (2017) reported that they felt they were able to learn better and had less distractions. were able to work with under own timeline, and appreciated the amount of accountability due to the format (Ilaria, 2017; Moore, Haviland, Moore, & Tran (2016) in their 3 year study of teachers and hybrid trainings found that teachers reported increased feelings of competence and preparedness after hybrid trainings when compared to how they felt after non-hybrid PD. as The teachers reported that they experienced increased collaborations between professionals and felt that there was increased likelihood of using the information learned in the actual classroom (Moore et al., 2016).

Artists are known to use unique hands-on artistic pedagogies in the creation of their arts, which Hall and Thomson (2017) described as ensemble work, improvisation, idea generation, and constant revision of work in process. Al-Amri et al.,( 2016) in their student of master artists as teachers, reviewed current best practices of teaching the arts in schools and described how artists indicated that the creation and appreciation of the art

itself is often a visceral experience, involving the five senses and cognitive sensations of pleasure and enjoyment. Bautista et al., (2017) noted that all of the 24 arts educator PD's they reviewed in their study of effective arts educator-focused PD incorporated active learning opportunities.

The third strength of this project is the modeling of methods taught to teachers within the PD. Participants in this PD experience the PD as their students would experience the methods when used in the arts classroom. The PD presenter uses and models the same methods and strategies that the participants will later use with their arts students. Bandura (1971) described how vicarious experiences such as those in this PD can create emotional responses in the observers and that observing positive situations can create a behavioral change in the observer which can then affect their own behaviors. Pfitzner-Eden (2016) described how vicarious experiences in PD allow participants to see the methods in use and may affect teacher's self-efficacy positively, especially when the teacher has little prior experience in the new method

One of the potential limitations of this project is participants' potential lack of interest and motivation regarding the subject matter during in the online portion the virtual presentation method itself. Online PD models, although valuable in terms of funding and time issues, are not the only way that educators want to learn and should not be a total replacement for in-person PD. The online self-directed format of this PD may cause engagement and motivation problems even as it solves other issues. It is notable that Bautista, Yau, & Wong (2017) found that teacher PD that only discusses theories of

teaching and learning can be disconnected from the content of the classroom had have little to no impact on teachers Therefore, the design of the online module portion may be a limitation to the success of the project.

Because the PD is broken into two parts, one during the summer months and another during traditional teacher in-service time prior to school starting in the fall, newly hired arts educators or those without access to a computer or internet would be may be unable to complete both online portions. This is a potential limitation to the multiple-part design of this PD if a participate misses the initial online portion which provides the knowledge base for the in-person portion of the PD. Even though Liu and Liao (2019) indicate that effective teacher PD is of a greater duration, they noted that a multipart PD is difficult to organize and maintain with fidelity.

### **Recommendations for Alternate Approaches**

When viewing the problem in a greater context, an alternative approach to this problem could be an investigation into the educational and cultural idea of the arts in schools as not academic or an integral part of education. This may be a reason that more academic pedagogy is not embedded in the arts curriculum. According to the national arts standards there are heavily research-based methods and procedures for the arts classes that could be used to produce unique educational value in the arts classroom similar to that which is produced in the academic classrooms (State Education Agency Directors of Arts Education (SEADAE), 2014) Hanawalt (2018) interviewed arts educators who expressed that the view of the arts in the public schools is that they are more often

identified as a fun class and not academic like other subjects and are repressed in the school culture because of the data-driven nature of the modern public school.

Arts educators report that they do not have sufficient time in their classes to address EF skills as well as the arts. Schools in Sweden in 2013 dedicated 19% of their total planned instruction time daily to the arts (Sjöqvist, Göransson, Bengtsson, & Hansson, 2020). According to the 2013 Americans for the Arts Annual Report (Americans for the Arts, 2014) during that same year in American schools, 6% of all elementary schools did not offer music classes, 17% did not offer visual arts classes, 96% did not offer theatre classes, and 97% did not offer dance classes. A research approach that looks into increasing time dedicated to arts classes in schools and the availability of these courses in public schools could be an alternative way to address this problem.

### **Scholarship, Project Development, and Leadership and Change**

The process of the completion of this doctoral study enhanced my critical thinking and reasoning skills and improved my scholarly writing. Reading and analyzing scholarly articles and books helped me to grow and develop as a scholar. Developing this project study also helped me to better understand how to address a research problem by creating a project based on my research findings. I have not only gained knowledge and skills in terms of conducting research, but learned specifically about developing a hybrid project. As an administrator, I am used to setting my own goals and relying on myself alone to attain those goals. The process of working with a committee has helped me to learn a sense of patience and anticipate revisions and input to grow as a researcher.

This study provided me with insight into who I have become as a practitioner. Throughout this study, research paralleled real life with frequency and many of the scholarly concepts and methods learned during the development of the project were immediately useful in my work. In this study I needed to develop data collection and analysis skills to evaluate and present data, The understanding I gained from the in-depth research of Albert Bandura's SCT served to reinforce personal convictions and philosophy of teaching.

### **Reflection on Importance of the Work**

Students with LD and ADHD make up the largest group of identified students with disabilities and are typically frequently fully included in the general education classroom within public schools in America (Anderson, 2020; Epler, 2017; Kirby, 2017). Although they are numerous in number, their disability-driven actions are often misconstrued as laziness or misbehavior (Granot, 2016), their educational potential is diminished, and expectations of their success is tempered by their deficits in EF skills (Samuels et al., 2016). Studies continue to investigate how the arts can therapeutically support and assist students with more intellectually or physically significant or socially impactful disabilities in the arts, while few researchers have concentrated on students with LD and ADHD in the arts as a population. Still, little to no research has been done to evaluate how the inclusion of more academic pedagogy in the arts classroom might be a conduit to enhanced performance of this population in school and in life in general.

The local importance of this work lies not only in the ability to continue to

include and support students with LD and ADHD in the arts classroom, but also in the ability to enhance the professional knowledge and self-efficacy of the arts educators who work with these students. As traditional public schools continue to reduce budget monies for the arts, even as the new legislation encourage the acceptance and inclusion of the arts into a student's well-rounded education, administrators may recognize the potential benefits of the arts to all stakeholders, and the requirements of high-quality PD for all educators, including arts educators.

### **Implications, Applications, and Directions for Future Research**

The findings of this study may have an impact on the arts-based charter public schools, the stakeholders of these schools, the arts educators, and the students and families of students with LD and ADHD. As an impact of this study, social change may begin with the increased self-efficacy of the arts educators in academic pedagogy and methods to teach EF skills simultaneously with teaching their art. Social change may also begin with the inclusion of the school administrators as a part of the follow up of the PD by encouraging them to value and demand high-quality instruction and education in all areas of the public school, including in the arts. As the administrators witness the high standards of teaching pedagogy demonstrated by the arts educators in the use of the OPUS template and methods, social change may stretch further in regards to the inclusion of the arts in a well-rounded education outside of the arts-based charter school, and the principals may be influenced to provide more high-quality PD to these teachers in the future. Lastly, and most importantly, students within arts classrooms and their families

may recognize social change as a result of the teacher's new methods, students' improvement in EF skills, and increases in students' self-efficacy and achievement.

This study may have implications for further research involving EF skills improvement programs specifically designed for the arts classroom and for future research into the effectiveness of teacher preparation programs of arts educators in preparing them for greater demands of academic pedagogy, coupled with artistic pedagogy. While programs for EF skills improvement are relatively common in schools, the integration of the arts into these types of programs has been rarely investigated and may show more potential for the generalization and carry-over of skills into many content areas, which is a point of contention in terms of the effectiveness of school-based EF intervention programs. Information from this study's findings indicate that there is a potential for greater involvement of the arts educators in school intervention programs, and this topic would be of great interest to public schools that include arts instruction classrooms.

Recommendations for methodological changes are to investigate further into the educational preparation programs and previous teaching experiences of the arts educators in any similar semistructured interview-based qualitative study. Through the use of the SCT framework in this study, it is acknowledged that a teacher's past educational and artistic experiences impact their present behaviors and learning and therefore should not be ignored in the discussion of the causes of the current problem, nor in the selection of an acceptable solution. Additionally, recommendations are to use a larger purposeful

sample population to include teachers of the arts in traditional public schools rather than only from arts-based charter public schools, which would increase the breadth and depth of the study, address the problem, and lead to solutions. Lastly, viewing this problem through a different theory of learning framework would potentially produce novel solutions, other than the socially-driven reciprocal relationship-based methods developed here.

### **Conclusion**

The purpose of this study was to investigate perceptions of art educators about teaching EF skills to students with LD and ADHD while in the arts classroom and about what they may need as arts teachers to accomplish this. Results of the study indicated that the arts teacher's perceived that EF skills are important to a student's success in the art form and were already incorporating methods for encouraging the improvement of EF skills through their lessons. Each arts teacher was using different methods of scaffolding and planning but felt the need to be held to professional standards and requirements for the teaching of EF skills, like their academic peers. The arts educators recognized the value of developing relationships with their students to move them into a place of acceptance of critique and change, and often embodied the triadic reciprocal methods of SCT in their everyday classroom behavior. The arts classroom is a place where more than just art instruction is occurring. Within the public-school walls, students with LD and ADHD can flourish, grow, and succeed through the practice of the arts and with the correct guidance from the arts educators, can improve their EF skills through that art.



## References

- Adhabi, E., & Anozie, C. B. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education*, 9(3), 86-97.  
doi:10.5296/ije.v9i3.11483
- AISense. (2018). AISense announces Otter, brings power of ambient voice intelligence™ to everyday conversations. Retrieved from <https://blog.otter.ai/aisense-announces-otter-brings-power-of-ambient-voice-intelligence-to-everyday-conversations/>
- Ajimuda, O. S., & Aminu, O. (2020). Art for art's sake: Death of the author in the 21st Century. *KIU Interdisciplinary Journal of Humanities and Social Sciences*, 1(2), 68-78. Retrieved by [https://kijhus.kiu.ac.ug/assets/articles/1597400304\\_art-for-art%E2%80%99s-sake-death-of-the-author-in-the-21st-century.pdf](https://kijhus.kiu.ac.ug/assets/articles/1597400304_art-for-art%E2%80%99s-sake-death-of-the-author-in-the-21st-century.pdf)
- Akiba, M., Murata, A., Howard, C. C., & Wilkinson, B. (2019). Lesson study design features for supporting collaborative teacher learning. *Teaching and Teacher Education*, 77, 352-365. <https://doi.org/10.1016/j.tate.2018.10.012>
- Al Asmari, A. (2016). Continuous professional development of English language teachers: Perception and practices. *Advances in Language and Literary Studies*, 7(3), 117-124. <http://dx.doi.org/10.7575/aiac.all.v.7n.3p.117>
- Alamdarloo, G. H., Shojaee, S., Shalani, B., & Hossein, A. A. (2016). The effect of a group art therapy on the self-restraint of students with Attention Deficit/Hyperactivity Disorder. *Indian Journal of Fundamental and Applied Life Sciences*, 6, 461-469. <http://www.cibtech.org/sp.ed/jls/2016/01/jls.htm>

- Alter-Muri, S. (2017). Art education and art therapy strategies for Autism Spectrum Disorder students. *Art Education*, 70(5), 20-25, doi:10.1080/00043125.2017.1335536
- Americans for the Arts. (2014). *Americans for the Arts annual report 2013*. Retrieved from <http://annualreport.artsusa.org/2013/>.
- Anderson, K. P. (2020). The relationship between inclusion, absenteeism, and disciplinary outcomes for students with disabilities. *Educational Evaluation and Policy Analysis*. 0162373720968558. <https://doi.org/10.3102/0162373720968558>
- Anderson, S., & Meints, K. (2016). Brief report: The effects of equine-assisted activities on the social functioning in children and adolescents with autism spectrum disorder. *Journal of autism and developmental disorders*, 46(10), 3344-3352.
- Anderson, L., & Östlund, D. (2017). Assessments for learning in grades 1-9 in a special school for students with intellectual disability in Sweden. *Problems of Education in the 21st Century*, 75(6), 508-524. <https://creativecommons.org/licenses/by-nc/4.0/>
- Angelkoska, S., Stankovska, G., & Dimitrovski, D. (2016). The personal characteristics predictors of academic success. *Education Provision to Every One: Comparing Perspectives from Around the World*. 14, (1).
- Arts Education Collaboration. (2016). *Professional learning reports*. <https://artsedcollaborative.org/school-districts/publications/professional-learning->

reports/.

- Attia, M., & Edge, J. (2017). Be (com) ing a reflexive researcher: A developmental approach to research methodology. *Open Review of Educational Research*, 4(1), 33-45. doi: 10.1080/23265507.2017.1300068
- Bandura, A. (1971). *Vicarious and self-reinforcement processes. The nature of reinforcement*, 228278.
- Bandura, A. (1989). Human agency in Social Cognitive Theory. *American Psychologist*. 9. 1175–1184. [http://www.stiftelsen-hvasser.no/documents/Bandura\\_Human\\_Agency\\_in\\_social\\_Cognitiv\\_theory.pdf](http://www.stiftelsen-hvasser.no/documents/Bandura_Human_Agency_in_social_Cognitiv_theory.pdf)
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50, 248-287.  
<http://www.uky.edu/~eushe2/BanduraPubs/Bandura1991OBHDP.pdf>
- Bandura, A. (1999). A social cognitive theory of personality. In L. Pervin & O. John (Ed.), *Handbook of personality* (2nd ed., pp. 154-196). New York, NY: Guilford Publications. (Reprinted in D. Cervone & Y. Shoda [Eds.], *The coherence of personality*. Guilford Press). Retrieved from  
<http://www.uky.edu/~eushe2/BanduraPubs/Bandura1999HP.pdf>
- Bandura, A. (2001). Social Cognitive Theory: An agentic perspective. *Annual review of Psychology*, 52. 1–26. <https://search-proquest-com.ezp.waldenulibrary.org/docview/205845107?accountid=14872>
- Bandura, A. (2013). The role of self-efficacy in goal-based motivation. In E. A. Locke &

- G. P. Latham (Eds.), *New developments in goal setting and task performance* (p. 147–157). Routledge/Taylor & Francis Group. Retrieved from <https://psycnet.apa.org/record/2013-00428-010>
- Barrientos-Fernandez, A., Sanchez-Cabrero, R., Arigita-Garcia, A., Manoso-Pacheco, L., Pericacho-Gomez, F. J., & Novillo-Lopez, M. A. (2019). Measurement of different types of intelligence (general, verbal vs. non-verbal, multiple), academic performance and study habits of secondary students at a music integrated centre. *Data in brief*, *25*, 104124. <https://doi.org/10.1016/j.dib.2019.104124>
- Basting, A. (2018). Building creative communities of care: Arts, dementia, and hope in the United States. *Dementia*, *17*(6), 744-754. <https://doi.org/10.1177/1471301217740959>
- Bates, V. C. (2016). Toward a sociology of music curriculum integration. *Action, Criticism, and Theory for Music Education*. *15* (3). 8–20. [act.maydaygroup.org/articles/Bates15\\_3.pdf](http://act.maydaygroup.org/articles/Bates15_3.pdf)
- Bates, C. C., & Morgan, D. N. (2018). Seven elements of effective professional development. *The Reading Teacher*, *71*(5), 623-626. doi:10.1002/trtr.1674
- Bautista, A., Stanley, A. M., & Candusso, F. (2020). Policy strategies to remedy isolation of specialist arts and music teachers. *Arts Education Policy Review*, 1-12. doi:10.1080/10632913.2020.1746713
- Bautista, A., Tan, L. S., Ponnusamy, L. D., & Yau, X. (2016). Curriculum integration in arts education: Connecting multiple art forms through the idea of ‘space’. *Journal*

*of Curriculum Studies*, 48(5), 610-629.

<https://doi.org/10.1080/00220272.2015.1089940>

- Bautista, A., Yau, X., & Wong, J. (2017). High-quality music teacher professional development: A review of the literature. *Music Education Research*, 19(4), 455-469. <https://doi.org/10.1080/14613808.2016.1249357>
- Belland, B. R. (2017). Instructional scaffolding in STEM education. Springer International Publishing. Springer Cham. doi 10.1007/978-3-319-02565-0
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8-14. <https://doi.org/10.1016/j.npls.2016.01.001>
- Black, S. & Allen, J. D. (2018). Insights from educational psychology Part 5: Learning as a social act. *Library Faculty Scholarship.*, 29. [https://commons.colgate.edu/lib\\_facschol/29](https://commons.colgate.edu/lib_facschol/29)
- Blackwell, W., Sheppard, M., Lehr, D., & Huang, S. (2017) Examining pre-service teacher candidates' sources and levels of knowledge about Autism Spectrum Disorders. *Journal of Human Services: Training, Research, and Practice*, 2(2). <http://scholarworks.sfasu.edu/jhstrp/vol2/iss2/4>.
- Boddy, C.R.,(2016). Sample size for qualitative research. *Qualitative Market Research*, 19(4) 426-432. doi:10.1108/QMR-06-2016-0053.
- Bora, B., Krishna, M., & Phukan, K. D. (2017). The effects of tempo of music on heart rate, blood pressure and respiratory rate—A study in Gauhati Medical College. *Indian Journal of Physiological Pharmacology*, 61(4), 445-448.

[https://www.ijpp.com/IJPP%20archives/2017\\_61\\_4/445-448.pdf](https://www.ijpp.com/IJPP%20archives/2017_61_4/445-448.pdf)

Boydell, K. M., Hodgins, M. J., Gladstone, B. M., & Stasiulis, E. (2017). Ineffable knowledge: Tensions (and solutions) in art-based research representation and dissemination. *Journal of Applied Arts & Health, 8*(2), 193-207.

[https://doi.org/10.1386/jaah.8.2.193\\_1](https://doi.org/10.1386/jaah.8.2.193_1)

Bourn, D. (2016). Teachers as agents of social change. *International Journal of Development Education and Global Learning, 7*(3), 63-77. DOI:

10.18546/IJDEGL.07.3.05

Brownell, M., Kiely, M. T., Haager, D., Boardman, A., Corbett, N., Algina, J. Dingle, N. P., & Urbach, J. (2017). Literacy learning cohorts: Content-focused approach to

improving special education teachers' reading instruction. *Exceptional children, 83*(2), 143-164. DOI: 10.1177/0014402916671517

Burroughs, M. D., & Barkauskas, N. J. (2017). Educating the whole child: Social-emotional learning and ethics education. *Ethics and Education, 12*(2), 218-232.

Calhoun, M. B., Berkeley, S., & Scanlon, D. (2019). The erosion of FAPE for students with LD. *Learning Disabilities Research & Practice, 34*(1), 6-13.

<https://doi.org/10.1111/ldrp.12188>

Cantin, R. H., Gnaedinger, E. K., Gallaway, K. C., Hesson-McInnis, M. S., & Hund, A.

M. (2016). Executive functioning predicts reading, mathematics, and theory of mind during the elementary years. *Journal of Experimental Child Psychology, 146*, 66-78.

*Psychology, 146*, 66-78.

<https://ir.library.illinoisstate.edu/cgi/viewcontent.cgi?article=1006&context=fppsych>

Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2019). Malleability, plasticity, and individuality: How children learn and develop in context1. *Applied Developmental Science, 23*(4), 307-337.

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report, 21*(5), 811–831.

<http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=2337&context=tqr>

Cherriere, C., Robert, M., Fung, K., Tremblay Racine, F., Tallet, J., & Lemay, M. (2019).

Is there evidence of benefits associated with dancing in children and adults with cerebral palsy? A scoping review. *Disability and rehabilitation, 1-8*.

doi:10.1080/09638288.2019.1590866

Chou, C. C., & Huang, C. J. (2017). Effects of an 8-week yoga program on sustained attention and discrimination function in children with attention deficit hyperactivity disorder. *PeerJ, 5*, e2883. doi: 10.7717/peerj.2883

Ciullo, S., Falcomata, T., & Vaughn, S. (2015). Teaching social studies to upper elementary students with learning disabilities: Graphic organizers and explicit instruction. *Learning Disability Quarterly, 38*(1), 15-26.

<https://doi.org/10.1177/0731948713516767>

Coady, M. R., Harper, C., & De Jong, E. J. (2016). Aiming for equity: Preparing mainstream teachers for inclusion or inclusive classrooms?. *Tesol*

*Quarterly*, 50(2), 340-368. <https://doi.org/10.1002/tesq.223>

Cohen-Yatziv, L., & Regev, D. (2019). The effectiveness and contribution of art therapy work with children in 2018-what progress has been made so far? A systematic review. *International Journal of Art Therapy*, 24(3), 100-112.  
<https://doi.org/10.1080/17454832.2019.1574845>

Commonwealth of Pennsylvania (2020). *Standards aligned systems (SAS)*.  
<https://pdesas.org/>

Conceicao, L. S. R., Neto, M. G., do Amaral, M. A. S., Martins-Filho, P. R. S., & Carvalho, V. O. (2016). Effect of dance therapy on blood pressure and exercise capacity of individuals with hypertension: A systematic review and meta-analysis. *International journal of cardiology*, 220, 553-557.

Conradty, C., & Bogner, F. X. (2019). From STEM to STEAM: Cracking the code? How creativity & motivation interacts with inquiry-based learning. *Creativity Research Journal*, 31(3), 284-295.<https://doi.org/10.1080/10400419.2019.1641678>

Corcoran, R. P., & O'Flaherty, J. (2017). Executive function during teacher preparation. *Teaching and Teacher Education*, 63, 168-175.  
<https://doi.org/10.1111/bjep.12171>

Cragg, L., Keeble, S., Richardson, S., Roome, H. E., & Gilmore, C. (2017). Direct and indirect influences of executive functions on mathematics achievement. *Cognition*, 162, 12-26.

Creswell, J. W. (2007). *Research design qualitative and quantitative approaches*. Sage.



- Cumming, M. M., Bettini, E., Pham, A. V., & Park, J. (2020). School-, classroom-, and dyadic-level experiences: A literature review of their relationship with students' executive functioning development. *Review of Educational Research, 90*(1), 47-94.
- Darling-Hammond, L. (2017). Teacher education around the world: What can we learn from international practice?. *European journal of teacher education, 40*(3), 291-309. <https://doi.org/10.1080/02619768.2017.1315399>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Learning Policy Institute. Retrieved from <https://learningpolicyinstitute.org/product/teacher-prof-dev>
- De Smul, M., Heirweg, S., Van Keer, H., Devos, G., & Vandevelde, S. (2018). How competent do teachers feel instructing self-regulated learning strategies? Development and validation of the teacher self-efficacy scale to implement self-regulated learning. *Teaching and Teacher Education, 71*, 214–225. <http://doi.org/10.1016/j.tate.2018.01.001>
- Di Lieto, M. C., Castro, E., Pecini, C., Inguaggiato, E., Cecchi, F., Dario, P., ... & Sgandurra, G. (2019). Improving executive functions at school in children with special needs by educational robotics. *Frontiers in Psychology, 10*. doi: 10.3389/fpsyg.2019.02813
- Diamond, A., & Ling, D. S. (2016). Conclusions about interventions, programs, and approaches for improving executive functions that appear justified and those that,

despite much hype, do not. *Developmental cognitive neuroscience*, 18, 34-48.

<https://doi.org/10.1016/j.dcn.2015.11.005>

Dieterich-Hartwell, R. (2017). Dance/movement therapy in the treatment of post-traumatic stress: A reference model. *The arts in psychotherapy*, 54, 38-46.

<http://dx.doi.org/10.1016/j.aip.2017.02.010>

Downes, M., Bathelt, J., & De Haan, M. (2017). Event-related potential measures of executive functioning from preschool to adolescence. *Developmental Medicine & Child Neurology*, 59(6), 581-590.

Drabble, L., Trocki, K. F., Salcedo, B., Walker, P. C., & Korcha, R. A. (2016).

Conducting qualitative interviews by telephone: Lessons learned from a study of alcohol use among sexual minority and heterosexual women. *Qualitative Social Work*, 15(1), 118-133. doi: 10.1177/1473325015585613.

Eklund, H., Cadman, T., Findon, J., Hayward, H., Howley, D., Beecham, J., Xenitidis,

Murphy, Asherson & Glaser, K. (2016). Clinical service use as people with attention deficit hyperactivity disorder transition into adolescence and adulthood: A prospective longitudinal study. *BMC Health Services Research*, 16(1), 248.

<https://doi.org/10.1186/s12913-016-1509-0>

The EFCNY Executive Functioning Channel.(2019, January 28). *Core EF: Inhibitory*

*control*.[https://www.youtube.com/watch?time\\_continue=1&v=eZ3Wfo-jPhk&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=1&v=eZ3Wfo-jPhk&feature=emb_logo)

*Elementary and Secondary Education Act of 1965*, as Amended by the Every Student

Succeeds Act – Accountability and State Plans. 81 Fed. Reg. § 229 (Final rule Doc. 2016–27985 Filed November 28, 2016) (to be codified as 34 CFR Parts 200 and 299).

Elliott, J. C. (2017). The evolution from traditional to online professional development: A review. *Journal of Digital Learning in Teacher Education*, 33(3), 114-125. DOI 10.1080/21532974.2017.1305304

Elliott, S. N., Davies, M. D., Frey, J. R., Gresham, F., & Cooper, G. (2018). Development and initial validation of a social emotional learning assessment for universal screening. *Journal of Applied Developmental Psychology*, 55, 39-51. <https://doi.org/10.1016/j.appdev.2017.06.002>

Epler, P. L., (2017). Instructional strategies in general education and putting the Individuals with Disabilities Act (IDEA) into practice. IGI Global. DOI: 10.4018/978-1-5225-3111-1.ch009

Eun, B. (2019). Adopting a stance: Bandura and Vygotsky on professional development. *Research in Education*, 105(1), 74–88. doi: 10.1177/0034523718793431

Fisher, E. L., Barton-Hulsey, A., Walters, C., Sevcik, R. A., & Morris, R. (2019). Executive functioning and narrative language in children with dyslexia. *American journal of speech-language pathology*, 28(3), 1127-1138.

Fletcher, A. K. (2016). Exceeding expectations: scaffolding agentic engagement through assessment as learning. *Educational Research*, 58(4), 400-419.

Flynn, B. (2018). The benefits of dance therapy for older adults with Dementia: A

systematic review of the literature. *Honors Theses*. 172.

[https://digitalcommons.salemstate.edu/honors\\_theses/172](https://digitalcommons.salemstate.edu/honors_theses/172)

- Forero, R., Nahidi, S., De Costa, J., Mohsin M., Fitzgerald, G., Gibson, N., McCarthy, S., & Aboagye-Sarfo, P. (2018). Application of four-dimension criteria to assess rigour of qualitative research in emergency medicine. *BMC Health Services Research*, 18, 120. <https://doi.org/10.1186/s12913-018-2915->
- Foster, E. M., & Marcus Jenkins, J. V. (2017). Does participation in music and performing arts influence child development?. *American Educational Research Journal*, 54(3), 399-443.
- Fried, I., Haggard, P., He, B. J., & Schurger, A. (2017). Volition and action in the human brain: processes, pathologies, and reasons. *Journal of Neuroscience*, 37(45), 10842-10847.
- Frydman, J. (2016). The arts in psychotherapy role theory and EF: Constructing cooperative paradigms of drama therapy and cognitive neuropsychology. *The Arts in Psychotherapy*, 47, 41–47. <https://doi.org/10.1016/j.aip.2015.11.003>
- Goldstein, T. R., Lerner, M. D., & Winner, E. (2017). The arts as a venue for developmental science: Realizing a latent opportunity. *Child development*, 88(5), 1505-1512.
- Golsteyn, B., Non, A., & Zölitz, U. (2017). The impact of peer personality on academic achievement. *University of Zurich, Department of Economics, Working Paper*, (269). <https://doi.org/10.5167/uzh-141964>

- Godwin, K. E., Eng, C. M., Todaro, R., Murray, G., & Fisher, A. V. (2018). *Examination of the role of book layout, executive function, and processing speed on children's decoding and reading comprehension*. Proceedings of the 41st Annual Meeting of the Cognitive Science Society, 2019.
- Golsteyn, B. H.; Non, J. A., & Zölitz, U. (2017) : *The impact of peer personality on academic achievement*, Working Paper, No. 269, University of Zurich, Department of Economics, Zurich, <http://dx.doi.org/10.5167/uzh-141964>
- Gooden, A. (2017). Reach for the stars: Restructuring schooling for emergent bilinguals with a whole-child, arts-infused curricular approach. *Journal of Pedagogy, Pluralism, and Practice*, 9(1), 169.  
<https://digitalcommons.lesley.edu/jppp/vol9/iss1/11/>
- Gooden, D. J., Creque, C. A., & Chin-Loy, C. (2017). The impact of metacognitive, cognitive and motivational cultural intelligence on behavioral cultural intelligence. *International Business & Economics Research Journal (IBER)*, 16(3), 223-230. doi <https://doi.org/10.19030/iber.v16i3.10006>
- Graham, S. (2017). Attention-deficit / hyperactivity disorder (ADHD), learning disabilities (LD), and EF: Recommendations for future research. *Contemporary Educational Psychology*, 50, 97–101.  
<https://doi.org/10.1016/j.cedpsych.2017.01.001>
- Granot, D. (2016). Socioemotional and behavioural adaptation of students with disabilities: The significance of teacher–student attachment-like

relationships. *Emotional and Behavioural Difficulties*, 21(4), 416-432.

<http://dx.doi.org/10.1080/13632752.2016.1235324>

Graziano, P., Garb, L.B., Ros, R., Hart, K., & Garcia, A. (2015). Executive functioning and school readiness among preschoolers with externalizing problems: The moderating role of the student–teacher relationship. *Early Education and Development*, DOI: 10.1080/10409289.2016.1102019

Greco, G., & de Ronzi, R. (2020). Effect of Karate training on social, emotional, and executive functioning in children with autism spectrum disorder. *Journal of Physical Education and Sport*, 20(4), 1637-1645.

Griese, B., Rösken-Winter, B., & Binner, E. (2020). Facilitating teacher collaboration in subject-specific professional development : Attending to how and what questions. *ICMI Study 25*, 468. [https://www.researchgate.net/profile/Liliana\\_Suarez\\_Tellez/publication/340515107\\_Seminar\\_on\\_Re-Thinking\\_Mathematics\\_A\\_Collaborative\\_Environment\\_Which\\_Offers\\_Resources\\_for\\_Mathematics\\_Teachers\\_and\\_Researchers/links/5e8e2de4a6fdcca789fe61bf/Seminar-on-Re-Thinking-Mathematics-A-Collaborative-Environment-Which-Offers-Resources-for-Mathematics-Teachers-and-Researchers.pdf#page=479](https://www.researchgate.net/profile/Liliana_Suarez_Tellez/publication/340515107_Seminar_on_Re-Thinking_Mathematics_A_Collaborative_Environment_Which_Offers_Resources_for_Mathematics_Teachers_and_Researchers/links/5e8e2de4a6fdcca789fe61bf/Seminar-on-Re-Thinking-Mathematics-A-Collaborative-Environment-Which-Offers-Resources-for-Mathematics-Teachers-and-Researchers.pdf#page=479)

Gupta, P., & Sharma, V. (2017). Working memory and learning disabilities: A review. *International Journal of Indian Psychology*, 4(4), 111-121.

Hall, C., & Thomson, P. (2017). Creativity in teaching: What can teachers learn from artists?. *Recherche formation*, (3), 55-77. <https://www.cairn.info/journal->

recherche-et-formation-2017-3-page-55.htm.

- Hanawalt, C. (2018). School art in an era of accountability and compliance: New art teachers and the complex relations of public schools. *Studies in Art Education, 59*(2), 90-105. <https://doi.org/10.1080/00393541.2018.1440151>
- Hardiman, M. M. (2016). Education and the arts: Educating every child in the spirit of inquiry and joy. *Creative Education, 7*. Retrieved from <http://www.scirp.org/journal/ce>
- Hardiman, M. M., John Bull, R. M., Carran, D. T., & Shelton, A. (2019). The effects of arts-integrated instruction on memory for science content. *Trends in Neuroscience and Education, 14*, 25-32.
- Harms, M. B., Shannon Bowen, K. E., Hanson, J. L., & Pollak, S. D. (2018). Instrumental learning and cognitive flexibility processes are impaired in children exposed to early life stress. *Developmental science, 21*(4), e12596.
- Hernández, M. M., Eisenberg, N., Valiente, C., Spinrad, T. L., Johns, S. K., Berger, R. H., ... & Southworth, J. (2018). Self-regulation and academic measures across the early elementary school grades: Examining longitudinal and bidirectional associations. *Early education and development, 29*(7), 914-938.
- Hill, H. C., Lynch, K., Gonzalez, K. E., & Pollard, C. (2020). Professional development that improves STEM outcomes. *Phi Delta Kappan, 101*(5), 50-56. Retrieved from [https://www.researchgate.net/profile/Kathleen\\_Lynch20/publication/338858619\\_Professional\\_development\\_that\\_improves\\_STEM\\_outcomes/links/5fa0a82ba6fdc](https://www.researchgate.net/profile/Kathleen_Lynch20/publication/338858619_Professional_development_that_improves_STEM_outcomes/links/5fa0a82ba6fdc)

cf7b97806e/Professional-development-that-improves-STEM-outcomes.pdf

- Hitchings, R., & Latham, A. (2020). Qualitative methods I: On current conventions in interview research. *Progress in Human Geography*, 44(2), 389-398.
- Hogan, J., & Winner, E. (2019). Habits of mind as a framework for assessment in music education. *The Oxford Handbook of Philosophical and Qualitative Assessment in Music Education*, 203. DOI: 10.1093/oxfordhb/9780190265182.013.3
- Hughes, C. A., Morris, J. R., Therrien, W. J., & Benson, S. K. (2017). Explicit instruction: Historical and contemporary contexts. *Learning Disabilities Research & Practice*, 32(3), 140-148.
- Humphrey, N., Hennessey, A., Lendrum, A., Wigelsworth, M., Turner, A., Panayiotou, M., Joyce, C., Pert, K., Stephens, E., Wo, L., Squires, G., Woods, K., Harrison, M., & Calam, R. (2018). The PATHS curriculum for promoting social and emotional well-being among children aged 7–9 years: a cluster RCT.
- Ilaria, D. (2017). The efficacy and impact of a hybrid professional development model on handheld graphing technology use. *Contemporary Issues in Technology and Teacher Education*, 17(2), 194- 204. <https://www.citejournal.org/wp-content/uploads/2017/03/v17i2math1.pdf>
- Ingraham, N., & Nuttall, S. (2016). The story of an arts integration school on English-language-learner development: A qualitative study of collaboration, integrity, and confidence. *International Journal of Education & the Arts*, 17(28). Retrieved



from <http://www.ijea.org/v17n28/>

- Inan, N. K., Balakrishnan, K., & Refeque, M. (2019). Flipping perceptions, engagements and realities: A case study. *Turkish Online Journal of Distance Education, 20*(1), 208-222. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1201995.pdf>
- Ishii, K. (2017). Active learning and teacher training: Lesson study and professional learning communities. *Scientia in Educatione, 8*.  
<https://doi.org/10.14712/18047106.734>
- Jacob, R., & Parkinson, J. (2015). The potential for school-based interventions that target executive function to improve academic achievement: A review. *Review of Educational Research, 85*(4), 512-552. DOI: 10.3102/0034654314561338
- Jaeggi, S. M., & Shah, P. (2018). Editorial special topic: Neuroscience, learning, and educational practice: Challenges, promises, and applications. *AERA Open, 4*(1), <https://doi.org/10.1177/2332858418756053>
- Jaschke, A. C., Honing, H., & Scherder, E. J. (2018). Longitudinal analysis of music education on executive functions in primary school children. *Frontiers in Neuroscience, 12*, 103. <https://doi.org/10.3389/fnins.2018.00103>
- Jelihovschi, AP, Cardoso, RL, & Linhares, A. (2018). An analysis of the associations among cognitive impulsiveness, reasoning process, and rational decision making. *Frontiers in Psychology, 8*, 2324.
- Jamieson, M. V., & Shaw, J. M. (2019). A continual improvement process for teaching

leadership and innovation within a community of practice. In *Proceedings of The American Society for Engineering Education Conference, (ASEE19)*.

file:///C:/Users/kadolt/Downloads/a-continual-improvement-process-for-teaching-leadership-and-innovation-within-a-community-of-practice.pdf

Jenkins, L., Hall, H., & Raeside, R. (2018). Applications and applicability of social cognitive theory in information science research. *Manuscript of paper submitted to Journal Librarianship and Information Science*.

<https://pdfs.semanticscholar.org/9e29/36dbe54d18e0da279e8a58bb41d73c36ec39.pdf>

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in Qualitative Research. *American Journal of Pharmaceutical AEducation*, 84(1), 7120. <https://doi.org/10.5688/ajpe7120>

Jones, S., Bailey, R., Brush, K., & Kahn, J. (2018). Preparing for effective SEL implementation. *Harvard Graduate School of Education Easel Lab. Available from Wallace Foundation website: <https://www.wallacefoundation.org/knowledgecenter/Documents/Preparing-for-Effective-SEL-Implementation.pdf>*.

Jones, S. D., & Workman, E. (2016). ESSA's well-rounded education. Special Report. *Education Commission of the States*. Retrieved from [www.ecu.org](http://www.ecu.org)

Joseph, J., & Padmanabhan, B. (2019). The traits of reciprocal determinism in Helen Macdonald's *H Is for Hawk*. *IUP Journal of English Studies*, 14(1).

- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954–2965.  
<https://doi.org/10.1111/jan.13031>
- Kalyani, H. H. N., Sullivan, K. A., Moyle, G., Brauer, S., Jeffrey, E. R., & Kerr, G. K. (2019). Impacts of dance on cognition, psychological symptoms and quality of life in Parkinson's disease. *NeuroRehabilitation*, 45(2), 273–283. doi: 10.3233/NRE-192788
- Kay, D., & Kibble, J. (2019). Learning theories 101: Application to everyday teaching and scholarship. *Advances in Physiology Education*, 40, 17–25.  
<https://doi.org/10.1152/advan.00132.2015>
- Kelly, N. R. (2019). *Teacher resistance and change: A mixed-method case study examination of faculty perceptions of professional learning communities in supporting teacher change and student achievement in a well-resourced, high-achieving secondary school*. (Doctoral dissertation, Widener University).
- Kent, A., & Giles, R. (2016). Dual certification in general and special education: What is the role of field experience in preservice teacher preparation?. *The Professional Educator*, 40(2). Retrieved from <https://web-b-ebshostcom.ezp.waldenulibrary.org/ehost/pdfviewer/pdfviewer?vid=1&sid=fbbf6840-291e-4002-98b1-f153446eb0a8%40pdc-v-sessmgr0>
- Khazanchi, R., & Khazanchi, P. (2020). Effective pedagogical practices in inclusive

- classrooms for students with disabilities. In *Special Education Design and Development Tools for School Rehabilitation Professionals* (pp. 38-60). IGI Global. doi: 10.4018/978-1-7998-1431-3.ch003
- Kim, L. E., Jörg, V., & Klassen, R. M. (2019). A meta-analysis of the effects of teacher personality on teacher effectiveness and burnout. *Educational Psychological Review*, 31, 163–195. Retrieved from <https://doi.org/10.1007/s10648-018-9458-2>
- Kirby, M. (2017, April). Implicit assumptions in special education policy: Promoting full inclusion for students with learning disabilities. In *Child & Youth Care Forum*, 46, (2) 175-191. DOI 10.1007/s10566-016-9382-x
- Koch, K. A., & Thompson, J. C. (2017). Laughter filled the classroom: Outcomes of professional development in arts integration for elementary teachers in inclusion settings. *Learning Disabilities: A Multidisciplinary Journal*, 22(2).
- Lackey, L. (2016). Arts integration and school reform. *Arts Education Policy Review*, 117 (4), 183-185. doi: 10.1080/10632913.2016.1213124
- Ladd, H. F. (2019), How charter schools threaten the public interest. *Journal of Policy Analysis and Management*, 38, 1063-1071. doi.org/10.1002/pam.22163
- Lamb, J. (2017). How do teachers reflect on their practice? A study into how feedback influences teachers' reflective practice. *The STeP Journal (Student Teacher Perspectives)*, 4(4), 94-104. <https://insight.cumbria.ac.uk/id/eprint/3397>
- Langberg, J. M., Dvorsky, M. R., Molitor, S. J., Bourchtein, E., Eddy, L. D., Smith, Z., Schultz, B. K., & Evans, S. W. (2016). Longitudinal evaluation of the importance

of homework assignment completion for the academic performance of middle school students with ADHD. *Journal of School Psychology, 55*, 27–38.

<https://doi.org/10.1016/j.jsp.2015.12.004>

Latham, G. P. (2019). Perspectives of a practitioner-scientist on organizational psychology/organizational behavior. *Annual Review of Organizational Psychology and Organizational Behavior, 6*, 1-16.

<https://www.annualreviews.org/doi/pdf/10.1146/annurev-orgpsych-012218-015323>

Learning Disabilities Association of Ontario. (2020). *Learning about LD's*. Retrieved from <https://www.ldatschool.ca/learn-about-lds/>

Lee, M. S. (2018). Art therapy for PTSD in traumatized patients after disasters. *Asia-Pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology, 8*(12), 615-625. <http://dx.doi.org/10.21742/AJMAHS.2018.12.57>

Leighton, C. M., Ford Connors, E., Robertson, D. A., Wyatt, J., Wagner, C. J., Proctor, C. P., & Paratore, J. R. (2018). “Let's FaceTime tonight”: Using digital tools to enhance coaching. *The Reading Teacher, 72*(1), 39-49. doi:10.1002/trtr.1676

Li, W. T., & Cheng, Y. H. G. (2018). A study on engineering students' creativity through art-infused curriculum. *Eurasia Journal of Mathematics, Science and Technology Education, 14*(5), 2009-2024. <https://doi.org/10.29333/ejmste/85867>

Lichtinger, E., & Kaplan, A. (2015). Employing a case study approach to capture motivation and self-regulation of young students with learning disabilities in

- authentic educational contexts. *Metacognition and Learning*, 10(1), 119-149. doi 10.1007/s11409-014-9131-1
- Liu, Y., & Liao, W. (2019). Professional development and teacher efficacy: evidence from the 2013 TALIS. *School Effectiveness and School Improvement*, 30(4), 487-509. <https://doi.org/10.1080/09243453.2019.1612454>
- Logan, A. (2020). The artist teacher as a reflective teacher. *Theses and Dissertations*. 8494. <https://scholarsarchive.byu.edu/etd/8494>
- López-Ortiz, C., Egan, T., & Gaebler-Spira, D. J. (2016). Pilot study of a targeted dance class for physical rehabilitation in children with cerebral palsy. *SAGE Open Medicine*, 4. doi 2050312116670926.
- Losardo, A., Davidson, D., & McCullough, K. (2019). Stages of Success: The Theatre and Therapy Project: Speech-language pathology and theatre education students work together in a program for adolescents and young adults with developmental disabilities <https://leader.pubs.asha.org/doi/pdf/10.1044/leader.AE.24032019.34>
- Loui, P. & Guetta, R. (2018). Music and Attention, Executive Function, and Creativity. In Thaut, M. & Hodges, D. (Ed.) *The Oxford Handbook of Music and Neuroscience*. doi 10.1093/oxfordhb/9780198804123.013.12
- Louick, R., Leider, C. M., Daley, S. G., Proctor, C. P., & Gardner, G. L. (2016). Motivation for reading among struggling middle school readers: A mixed methods study. *Learning and Individual Differences*, 49, 260-269. <http://dx.doi.org/10.1016/j.lindif.2016.06.027li>

- Ludwig, M., Boyle, A., & Lindsay, J. (2017). *Review of evidence: Arts Integration research through the lens of the Every Student Succeeds Act*. Retrieved from <https://www.wallacefoundation.org/knowledge-center/Documents/Arts-Integration-Research-Every-Student-Succeeds-Act-ESSA.pdf>.
- Ludwig, M., Marklein, M. B., & Song, M. (2016). Arts integration: A promising approach to improving early learning. *American Institutes for Research*. Retrieved from [www.air.org](http://www.air.org).
- Makovec, D. (2018). The teacher's role and professional development. *International Journal of Cognitive Research in Science, Engineering and Education*, 6(2), 33. doi:10.5937/ijcrsee1802033M
- Marcus Jenkins, J. V. (2017). Does participation in music and performing arts influence child development? *American Educational Research Journal*, 54(3), 399-443.
- Martin, A., Burns, E., & Collie, R. (2017). ADHD personal and interpersonal agency, and achievement: Exploring links from a social cognitive theory perspective. *Contemporary Educational Psychology*, 50, 13–22. <https://doi.org/10.1016/j.cedpsych.2016.12.001>
- Mazursky-Horowitz, H., Thomas, S. R., Woods, K. E., Chrabaszcz, J. S., Deater-Deckard, K., & Chronis-Tuscano, A. (2018). Maternal EF and scaffolding in families of children with and without parent-reported ADHD.

*Journal of Abnormal Child Psychology*, 46(3), 463-475.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5623161/>

McClellan, E. (2017). A social-cognitive theoretical framework for examining music teacher identity. *Action, Criticism & Theory for Music Education*, 16(2).

doi:10.22176/act16.2.65

McGrath, C., Palmgren, P. & Liljedah, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical Teacher*, 41(9), 1002-1006.

doi:10.1080/0142159X.2018.1497149

McLeod, S. A. (2016). *Bandura - social learning theory*.

[www.simplypsychology.org/bandura.html](http://www.simplypsychology.org/bandura.html)

McLeskey, J., Billingsley, B. & Ziegler, D. (2018). Using high-leverage practices in teacher preparation to reduce the research-to-practice gap in inclusive settings. *Australasian Journal of Special and Inclusive Education*, 42(1), 3-16. Retrieved from <http://aase.edu.au/wp-content/uploads/documents/JSI-42.1.pdf#page=7>

Merck, K. A., & Johnson, R. M. (2017). Music education for students with disabilities: A guide for teachers, parents, and students. *The Corinthian*, 18(1), 6.

<https://kb.gcsu.edu/thecorinthian/vol18/iss1/6>

Meyer K., & Willis, R. (2019). Looking back to move forward: The value of reflexive journaling for novice researchers. *Journal of gerontological social work*, 62(5), 578-585. Meyer

Miramontez, S. K., & Schwartz, I. S. (2017). The effects of physical activity on the on-



task behavior of young children with autism spectrum disorders. *International Electronic Journal of Elementary Education*, 9(2), 405-418.

file:///C:/Users/Administrator/Downloads/166-1-334-1-10-20170823%20(1).pdf

Moore, S., Haviland, D., Moore, W., & Tran, M. (2016). Preparing teachers to use GIS:

The impact of a hybrid professional development program on teachers' use of GIS. *Journal of Science Education and Technology*, 25(6), 930-946.

<https://doi.org/10.1007/s10956-016-9641-5>

Morgan, P. L., Li, H., Farkas, G., Cook, M., Pun, W. H., & Hillemeier, M. M. (2017).

Executive functioning deficits increase kindergarten children's risk for reading and mathematics difficulties in first grade. *Contemporary Educational Psychology*, 50, 23-32. doi: 10.1016/j.cedpsych.2016.01.004

<https://doi.org/10.1016/j.cedpsych.2016.01.004>

Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25(9), 1212-1222. Retrieved from

[https://www.researchgate.net/profile/Jorge\\_Zavala-](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

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[\\_SOBRE\\_LAS\\_ENFERMEDADES\\_TRANSMITIDAS\\_POR\\_GARRAPATAS\\_](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

[EN\\_UNA\\_COMUNIDAD\\_RURAL\\_DE\\_YUCATAN\\_MEXICO\\_RESULTADO](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

[S\\_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

[PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

[TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

[DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17](https://www.researchgate.net/profile/Jorge_Zavala-Castro/publication/291345872_SABERES_Y_PERCEPCIONES_DE_MUJERES_SOBRE_LAS_ENFERMEDADES_TRANSMITIDAS_POR_GARRAPATAS_EN_UNA_COMUNIDAD_RURAL_DE_YUCATAN_MEXICO_RESULTADO_S_PRELIMINARES/links/56a132fe08ae2afab88290ba/SABERES-Y-PERCEPCIONES-DE-MUJERES-SOBRE-LAS-ENFERMEDADES-TRANSMITIDAS-POR-GARRAPATAS-EN-UNA-COMUNIDAD-RURAL-DE-YUCATAN-MEXICO-RESULTADOS-PRELIMINARES.pdf#page=17)

- Mulder, B. (2020). *What does it mean to be ready for school? Analysis of the measurement of school readiness* (Doctoral dissertation). Retrieved from [https://drum.lib.umd.edu/bitstream/handle/1903/26432/Mulder\\_umd\\_0117E\\_20995.pdf?sequence=2&isAllowed=y](https://drum.lib.umd.edu/bitstream/handle/1903/26432/Mulder_umd_0117E_20995.pdf?sequence=2&isAllowed=y)
- Narimani, M., Abolghasemi, A., & Ilbeigy Ghalenei, R. (2018). Effect of art therapy (painting) on executive functions and visual motor coordination in dyslexic children. *Middle Eastern Journal of Disability Studies*, 8, 50-50.
- National Governors Association. (2017). *Every Student Succeeds Act (ESSA): Accountability and State plans regulation frequently asked questions*, 1–4. Retrieved from <https://www.nga.org/news/press-releases/governors-role-critical-in-every-student-succeeds-act/moss>
- Newton, K., Sperling, R., Martin, A (2017). Learning disabilities, attention-deficit hyperactivity disorder, and EF: Contributions from educational psychology in progressing theory, measurement, and practice. *Contemporary Educational Psychology*, 50, 1-3. doi: 10.1016/j.cedpsych.2016.12.003
- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research, *Evidence Based Nursing*, 18(2), 34–35. <https://doi.org/10.1136/eb-2015-102054>
- Norazah, S. S., Abdullah, N., Salleh, N., Renuka, J., Azlina, M., Rahman, H. A., & Azila, N. N. (2017). The effects of music on cognitive performance in attention deficit hyperactive disorder (ADHD) children: A systematic review. *Asian Journal of*

*Multidisciplinary Studies*, 5(9).

<https://core.ac.uk/download/pdf/229672472.pdf>

- Nwosisi, C., Ferreira, A., Rosenberg, W., & Walsh, K. (2016). A study of the flipped classroom and its effectiveness in flipping thirty percent of the course content. *International Journal of Information and Education Technology*, 6(5), 348. doi: 10.7763/IJiet.2016.V6.712
- Onwuegbuzie, A. J., Frels, R. K., & Hwang, E. (2016). Mapping Saldana's coding methods onto the Literature Review Process. *Journal of Educational Issues*, 2(1), 130-150. doi:10.5296/jei.v2i1.8931
- Osborne, M. S., McPherson, G. E., Faulkner, R., Davidson, J. W., & Barrett, M. S. (2016). Exploring the academic and psychosocial impact of El Sistema-inspired music programs within two low socio-economic schools. *Music Education Research*, 18(2), 156-175. doi: 10.1080/14613808.2015.1056130
- Ostovar-Nameghi, S. A., & Sheikahmadi, M. (2016). From teacher isolation to teacher collaboration: Theoretical perspectives and empirical findings. *English Language Teaching*, 9(5), 197-205.
- Oltmann, S. (2016, May). Qualitative interviews: A methodological discussion of the interviewer and respondent contexts. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*. 17, ( 2).
- Owens, A., & Garcia, B. (2019). Teaching executive functions: Modeling independence from cradles to college for success. In *Handbook of Research on Promoting*

*Higher-Order Skills and Global Competencies in Life and Work* (pp. 295-310).

IGI Global. doi: 10.4018/978-1-5225-6331-0.ch018

- Pantaleo, S. (2019). Studio habits of mind, Picturebooks, and student multimodal ensembles. *Ubiquity: The Journal of Literature, Literacy, and the Arts, Research Strand*. 6 (2). pp. 60-98. Retrieved from Ubiquity: <http://ed-ubiquity.gsu.edu/wordpress/>
- Pappas, M. A., & Drigas, A. S. (2019). Computerized training for neuroplasticity and cognitive improvement. *International Journal of Engineering Pedagogy (iJEP)*, 9(4), 50-62.
- Park, S., Lee, J., Baik, Y., Kim, K., Yun, H., Kwon, H., Jung, Y., & Kim, B. (2015). A preliminary study of the effects of an arts education program on executive function, behavior, and brain structure in a sample of nonclinical school-aged children. *Journal of Child Neurology*, 30(13), 1757-1766.  
doi:10.1177/0883073815579710
- Parong, J., Mayer, R. E., Fiorella, L., MacNamara, A., Homer, B. D., & Plass, J. L. (2017). Learning executive function skills by playing focused video games. *Contemporary Educational Psychology*, 51, 141-151.
- Parrish, J. L., Sherman, M. L., & Fletcher, T. S. (2017). Exploring how live theater promotes participation for children with special needs. *Physical & Occupational Therapy in Pediatrics*, 38:2, 157-167, DOI: 10.1080/01942638.2017.136805
- Patton, K., & Parker, M. (2017). Teacher education communities of practice: More than a

culture of collaboration. *Teaching and Teacher Education*, 67, 351-360.

<http://dx.doi.org/10.1016/j.tate.2017.06.013>

Pennsylvania Department of Education. (2020a). *Certification*.

<https://www.education.pa.gov/Educators/Certification/Pages/default.aspx>.

Pennsylvania Department of Education (2020b), SEL Best practice resources. Retrieved

from <https://www.education.pa.gov/Schools/safeschools/MentalHealth/>

[SELBPResources/Pages/default.aspx](https://www.education.pa.gov/Schools/safeschools/MentalHealth/SELBPResources/Pages/default.aspx).

Perry, B., & Edwards, M. (2019). Innovative arts-based learning approaches adapted

for mobile learning. *Open Praxis*, 11(3), 303-310. DOI:

<https://doi.org/10.5944/openpraxis.11.3.967>

Pfitzner-Eden, F. (2016). Why do I feel more confident? Bandura's sources predict

preservice teachers' latent changes in teacher self-efficacy. *Frontiers in*

*Psychology*, 7, 1486. <https://doi.org/10.3389/fpsyg.2016.01486>

Phoenix, C., & Orr, N. (2017). Analyzing exceptions within qualitative data: promoting

analytical diversity to advance knowledge of ageing and physical

activity. *Qualitative Research in Sport, Exercise, and Health*, 9(3), 271-284. :

<https://www.tandfonline.com/loi/rqrs21>

Plate, R. C., Richards, J. M., & Ernst, M. (2016). FMRI studies of the adolescent reward

system: The triadic model perspective. In *Drug Abuse in Adolescence* (pp. 113-

Poos, J. M., van den Bosch, K., & Janssen, C. P. (2017). Battling bias: Effects of training

and training context. *Computers & Education*, 111, 101-113.136). doi:

[https://doi.org/10.1007/978-3-319-17795-3\\_8](https://doi.org/10.1007/978-3-319-17795-3_8)

- Porter, S., McConnell, T., McLaughlin, K., Lynn, F., Cardwell, C., Braiden, H. J., ... & Clinician, L. (2017). Music therapy for children and adolescents with behavioural and emotional problems: A randomised controlled trial. *Journal of Child Psychology and Psychiatry*, 58(5), 586-594.
- Provalis Research. (2020). *QDA Miner Lite – Free qualitative data analysis software*. Retrieved from <http://provalisresearch.com/products/qualitative-data-analysis-software/freeware/> Research: A Literature Review. *Journal of Education and Learning*, 6(1), 102- 112. doi:10.5539/jel.v6n1p102
- Raver, C., & Blair, C. (2016). Neuroscientific insights: Attention, working memory, and inhibitory control. *The Future of Children*, 26(2), 95-119.  
[www.futureofchildren.org](http://www.futureofchildren.org).
- Ricci, L. A., Persiani, K., & Williams, A. D. (2019). From 'training wheels for teaching' to 'cooking in your mother-in-law's kitchen': Highlights and challenges of co-reaching among math, science, and special education teacher candidates and mentors in an urban teacher residency program. *International Journal of Whole Schooling*, 15(2), 24-52. <http://www.wholeschooling.net>
- Richards, A. G., Tietyen, A. C., Jicha, G. A., Bardach, S. H., Schmitt, F. A., Fardo, D. W., Kryscio, R. & Abner, E. L. (2019). Visual Arts Education improves self-esteem for persons with dementia and reduces caregiver burden: A randomized controlled trial. *Dementia*, 18(7-8), 3130-3142.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6494711/>

- Richerme, L. K. (2020). Every Student Succeeds Act and social emotional learning: opportunities and considerations for P-12 arts educators. *Arts Education Policy Review*, 1-7.
- Rider, T. R., van Bakergem, M., Park, J., Wang, X., & Hipp, J. A. (2018). Design, development, and public health. *Enquiry: The ARCC Journal for Architectural Research*, 15(1), 62-74.
- Roberts, C. Scandrett, A. & Washington, J. (2020) *Effective instructional practices for students with mild disabilities: Cognitive and meta-cognitive strategies*. National Youth-At-Risk Conference Savannah. 15.  
[https://digitalcommons.georgiasouthern.edu/nyar\\_savannah/2020/2020/15](https://digitalcommons.georgiasouthern.edu/nyar_savannah/2020/2020/15)
- Rocha, S. D. (2018). Doing fake work is very taxing on the nerves: Research-based art and the practice of study. *Visual Arts Research*, 44(1), 60-75.  
<http://www.jstor.org/stable/10.5406/visuartsrese.44.1.0060>
- Roebbers, C. M. (2017). Executive function and metacognition: Towards a unifying framework of cognitive self-regulation. *Developmental Review*, 45, 31–51.  
<https://doi.org/10.1016/j.dr.2017.04.001>
- Roller, M. R. (2019). A quality approach to qualitative content analysis: Similarities and differences compared to other qualitative methods. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*. 20, (3).  
<http://dx.doi.org/10.17169/fqs-20.3.3385>.

- Round, A., Baker, W. J., & Rayner, C. S. (2017). Using visual arts to encourage children with Autism Spectrum Disorder to communicate their feelings and emotions. *Open Journal of Social Sciences*, 5(10), 90-108.
- Rousell, D., & Fell, F. (2018). Becoming a work of art: Collaboration, materiality and posthumanism in visual arts education. *International Journal of Education Through Art*, 14(1), 91-110. DOI: [https://doi.org/10.1386/eta.14.1.91\\_1](https://doi.org/10.1386/eta.14.1.91_1)
- Rubenstein, L., Ridgley, L. M., Callan, G. L., Karami, S., & Ehlinger, J. (2018). How teachers perceive factors that influence creativity development: Applying a Social Cognitive Theory perspective. *Teaching and Teacher Education*, 70, 100–110. <https://doi.org/10.1016/j.tate.2017.11.012>
- Saldana, J. (2015). An introduction to codes and coding. In *The Coding Manual for Qualitative Researchers*. pp. 1–31. SAGE publishing Ltd. [https://www.researchgate.net/publication/317549383\\_The\\_Coding\\_Manual\\_for\\_Qualitative\\_Researchers\\_3rd\\_editionThe\\_Coding\\_Manual\\_for\\_Qualitative\\_Researchers\\_3rd\\_edition\\_Johnny\\_Saldana\\_Sage\\_2015\\_ISBN-13\\_978-1473902497](https://www.researchgate.net/publication/317549383_The_Coding_Manual_for_Qualitative_Researchers_3rd_editionThe_Coding_Manual_for_Qualitative_Researchers_3rd_edition_Johnny_Saldana_Sage_2015_ISBN-13_978-1473902497)
- Samuels, W. E., Tournaki, N., Blackman, S., & Zilinski, C. (2016). Executive functioning predicts academic achievement in middle school: A four-year longitudinal study. *The Journal of Educational Research*, 109(5), 478-490. doi: 10.1080/00220671.2014.979913
- Scheeler, M. C., Budin, S., & Markelz, A. (2016). The role of teacher preparation in



promoting evidence-based practice in schools. *Learning Disabilities: A Contemporary Journal*, 14(2), 171-187. Retrieved from <http://www.ldworldwide.org/research/learning-disabilities-a-contemporary-journal>

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology*, 60, 101832. <https://doi.org/10.1016/j.cedpsych.2019.101832>

Simpson, A., & Quigley, C. F. (2016). Member checking process with adolescent students: Not just reading a transcript. *The Qualitative Report*, 21(2), 376-392. Retrieved from <http://nsuworks.nova.edu/tqr/vol21/iss2/12>

Sims, S., & Fletcher-Wood, H. (2018). Characteristics of effective teacher professional development: what we know, what we don't, how we can find out. *Teacher Tool Kit*. <https://www.teachertoolkit.co.uk/wp-content/uploads/2018/10/Characteristics-of-Effective-Teacher-Professional-Development.pdf>

Sjöqvist, A., Göransson, K., Bengtsson, K., & Hansson, S. (2020). The arts: a precious part of special education? How principals value and organize arts education in compulsory school for pupils with intellectual disability in Sweden. *European Journal of Special Needs Education*, 1-15. doi: 10.1080/08856257.2020.1764809

Snyder, J. (2018). Dancing with Down Syndrome: A look at the effects and benefits of

dance movement therapy on the emotional well-being and overall quality of life for individuals with Down Syndrome. *Honors Theses*. 41.

<https://digitalcommons.assumption.edu/honorsthesis/41>

State Education Agency Directors of Arts Education (SEADAE). (2014). *National Core Arts Standards*. <https://www.nationalartsstandards.org/>

Steenbergen-Hu, S., Olszewski-Kubilius, P., & Calvert, E. (2017). PROTOCOL: The direct and indirect effects of school-based executive function interventions on children and adolescents' executive function, academic, social-emotional, and behavioral outcomes: A systematic review. *Campbell Systematic Reviews*, 13(1), 1-63. Retrieved from file:///F:/ef%20programs.pdf

Stockall, N. (2017). Designing homework to mediate EF deficits in students with disabilities. *Intervention in School and Clinic*, 53(1), 3 –11.  
<https://doi.org/10.1177/105345121769256>

Stutz, F., Schaffner, E., & Schiefele, U. (2016). Relations among reading motivation, reading amount, and reading comprehension in the early elementary grades. *Learning and Individual Differences*, 45, 101-113. doi: 10.1016/j.lindif.2015.11.022

Suzuki, N., Kenmochi, H., Miyamoto, K., Hayashi, T., & Matsumoto, S. (2017). Effects of medical music-care therapy for children With neurodevelopmental disorders. *Psychology*, 7(10), 541-556. doi:10.17265/2159-5542/2017.10.004

Swaney, M. (2017). Dialogue in the music: A music therapist's perspective on

meaningful communication with people with severe and profound intellectual disability. *Intellectual Disability Australasia*, 38(4), 12.

[https://www.asid.asn.au/files/1726\\_ida68\\_p12-15\\_dialogue\\_music.pdf](https://www.asid.asn.au/files/1726_ida68_p12-15_dialogue_music.pdf)

Tahmasebi, Z., Maghsoudi, J., & Talakoub, S. (2017). The effect of painting on depression in children with cancer undergoing chemotherapy. *Iranian Journal of Nursing and Midwifery Research*, 22(2), 102.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5442989/>

Takacs, Z. K., & Kassai, R. (2019). The efficacy of different interventions to foster children's executive function skills: A series of meta-analyses. *Psychological Bulletin*, 145(7), 653. <http://dx.doi.org/10.1037/bul0000195>

Tamm, L., Loren, R. E. A., Peugh, J., & Ciesielski, H. A. (2020). The association of executive functioning with academic, behavior, and social performance ratings in children with ADHD. *Journal of Learning Disabilities*.

<https://doi.org/10.1177/0022219420961338>

Teräs, H., & Kartoğlu, Ü. (2017). A grounded theory of professional learning in an authentic online professional development program. *International Review of Research in Open and Distributed Learning*, 18(7). DOI:

<https://doi.org/10.19173/irrodl.v18i7.2923>

Thakare, A. E., Mehrotra, R., & Singh, A. (2017). Effect of music tempo on exercise performance and heart rate among young adults. *International Journal of Physiology, Pathophysiology and Pharmacology*, 9(2), 35.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5435671/>

- Twining, P., Heller, R. S., Nussbaum, M., & Tsai, C. C. (2017). Some guidance on conducting and reporting qualitative studies. *Computers & Education*, 106, A1-A9
- U.S. Department of Education. (2018). *IDEA: Individuals with Disabilities Education Act*. Retrieved from <https://sites.ed.gov/idea/>
- Van der Klink, M., Kools, Q., Avissar, G., White, S., & Sakata, T. (2017). Professional development of teacher educators: What do they do? Findings from an explorative international study. *Professional development in education*, 43(2), 163-178.
- Varner, E. (2020). Finding Sanctuary: Social and emotional learning and visual and performing arts. *National Association for Music Education*. Retrieved from <https://nafme.org/social-emotional-learning-visual-performing-arts/>.
- Vella-Burrows, T., Pickard, A., Wilson, L., & Clift, S. (2017). *Dance to Health*. Canterbury Christ Church University.  
[https://www.researchgate.net/profile/Stephen\\_Clift2/publication/335666711\\_'Dance\\_to\\_Health'\\_an\\_evaluation\\_of\\_health\\_social\\_and\\_dance\\_interest\\_outcomes\\_of\\_a\\_dance\\_programme\\_for\\_the\\_prevention\\_of\\_falls/links/5de6194ba6fdcc2837008971/Dance-to-Health-an-evaluation-of-health-social-and-dance-interest-outcomes-of-a-dance-programme-for-the-prevention-of-falls.pdf](https://www.researchgate.net/profile/Stephen_Clift2/publication/335666711_'Dance_to_Health'_an_evaluation_of_health_social_and_dance_interest_outcomes_of_a_dance_programme_for_the_prevention_of_falls/links/5de6194ba6fdcc2837008971/Dance-to-Health-an-evaluation-of-health-social-and-dance-interest-outcomes-of-a-dance-programme-for-the-prevention-of-falls.pdf)
- Villavicencio, F. T., & Bernardo, A. B. (2016). Beyond math anxiety: Positive emotions predict mathematics achievement, self-regulation, and self-efficacy. *The Asia-*

*Pacific Education Researcher*, 25(3), 415-422. <https://doi.org/10.1007/s40299-015-0251-4>

- Wan, Y., Ludwig, M. J., & Boyle, A. (2018). *Review of evidence: Arts education through the lens of ESSA*. <https://files.eric.ed.gov/fulltext/ED591872.pdf>.
- Wan, Y., Ludwig, M., Boyle, A., & Lindsay, J. (2020). The role of arts integration and education in improving student outcomes. *State Education Standard*, 20(1), 36-41. <https://files.eric.ed.gov/fulltext/EJ1241600.pdf>
- Ward, A. R., & Parkes, J. (2017). An evaluation of a Singing for the Brain pilot with people with a learning disability and memory problems or a dementia. *Dementia*, 16(3), 360-374. doi: 10.1177/1471301215592539
- Watson, S., Gable, R., & Morin, L. (2016). The role of executive functions in classroom instruction of students with learning disabilities, *International Journal of School and Cognitive Psychology*, 3, 1–5. <https://doi.org/10.4172/2469-9837.1000167>
- Webster, P. R. (2016). Creative thinking in music, twenty-five years on. *Music Educators Journal*, 102(3), 26-32. doi: 10.1177/0027432115623841
- Weller, S. C., Vickers, B., Bernard, H. R., Blackburn, A. M., Borgatti, S., Gravlee, C. C., & Johnson, J. C. (2018). Open-ended interview questions and saturation. *PloS one*, 13(6). <https://doi.org/10.1371/journal.pone.0198606>
- Wexler, A. J. (2016). Re-imagining inclusion/exclusion: Unpacking assumptions and contradictions in arts and special education from a critical disability studies

perspective. *Journal of Social Theory in Art Education*, 36(1), 5.

<https://scholarscompass.vcu.edu/cgi/viewcontent.cgi?article=1447&context=jstae>

Whitham, M. (2017) Effects of executive function skills instruction on classroom behavior. *Educational Specialist.*, 121. 1-45.

<https://commons.lib.jmu.edu/edspec201019/121>

Wicks, D. (2017). The coding manual for qualitative researchers. *Qualitative Research in Organizations and Management: An International Journal*, 12(2), 169-170.

<https://doi.org/10.1108/QROM-08-2016-1408>

Wiklund, J., Yu, W., Tucker, R., & Marino, L. D. (2017). ADHD, impulsivity and entrepreneurship. *Journal of Business Venturing*, 32(6), 627-656.

Woltering, S., Lishak, V., Hodgson, N., Granic, I., & Zelazo, P. D. (2016). Executive function in children with externalizing and comorbid internalizing behavior problems. *Journal of Child Psychology and Psychiatry*, 57(1), 30-38.

Woods, M., Paulus, T., Atkins, D. P., & Macklin, R. (2016). Advancing qualitative research using qualitative data analysis software (QDAS)? Reviewing potential versus practice in published studies using ATLAS. ti and NVivo, 1994–2013.

*Social Science Computer Review*, 34(5), 597-617.

<https://doi.org/10.1177/0894439315596311>

Yoo, J. (2016). The effect of professional development on teacher efficacy and teachers self-analysis of their efficacy change. *Journal of Teacher Education for Sustainability*, 18(1), 84- 94. doi: 10.1515/jtes-2016-0007.

- Zabelina, D. L., Friedman, N. P., & Andrews-Hanna, J. (2019). Unity and diversity of executive functions in creativity. *Consciousness and cognition*, 68, 47–56.  
<https://doi.org/10.1016/j.concog.2018.12.005>
- Zdzinski, S. (2018). The development of music instruction for special learners as evidenced in articles in the Music Educators Journal. *ISME Commission on Special Music Education and Music Therapy*, 143.  
<https://www.isme.org/sites/default/files/documents/2018%20Proceedings%20of%20the%20ISME%20Commission%20on%20SME%26MT-FINAL.pdf#page=144>
- Zee, M., & Koomen, H. M. (2017). Similarities and dissimilarities between teachers' and students' relationship views in upper elementary school: The role of personal teacher and student attributes. *Journal of School Psychology*, 64, 43-60.
- Ziegler, S., Pedersen, M. L., Mowinckel, A. M., & Biele, G. (2016). Modelling ADHD: A review of ADHD theories through their predictions for computational models of decision-making and reinforcement learning. *Neuroscience & Biobehavioral Reviews*, 71, 633-656. <https://doi.org/10.1016/j.neubiorev.2016.09.002>
- Zelazo, P. (2015). Executive function: Reflection, iterative reprocessing, complexity, and the developing brain. *Developmental Review*, 38, 55–68.  
<https://doi.org/10.1016/j.dr.2015.07.001>
- Zelazo, P, Blair, C. B., & Willoughby, M. T. (2017). *Executive function: Implications for education* (NCER 2017-2000). National Center for Education Research, Institute of Education Sciences, U.S. Department of

Education. <http://ies.ed.gov/>.

- Zelazo, P. D., Forston, J. L., Masten, A. S., & Carlson, S. M. (2018). Mindfulness plus reflection training: effects on executive function in early childhood. *Frontiers in psychology, 9*, 208. <https://doi.org/10.3389/fpsyg.2018.00208>
- Zhang, G., & Zeller, N. (2016). A longitudinal investigation of the relationship between teacher preparation and teacher retention. *Teacher Education Quarterly, 43*(2), 73-92. <https://files.eric.ed.gov/fulltext/EJ1100322.pdf>
- Zitomer, M. R. (2017). Always being on your toes: Elementary school dance teachers' perceptions of inclusion and their roles in creating inclusive dance education environments. *International Journal of Inclusive Education, 21*(4), 428-440. <https://doi.org/10.1080/13603116.2016.1197327>
- Zyga, O., Russ, S., Meeker, H., & Kirk, J. (2018). A preliminary investigation of a school-based musical theater intervention program for children with intellectual disabilities. *Journal of Intellectual Disabilities, 22*(3), 262–278. <https://doi.org/10.1177/1744629517699334>



## Appendix A: The Project

*Table 1*

*Recommended activity progress through the first module of the PD*

Step	Learning objective	Criteria for evaluation	Phase	Activity	Materials
1	Evaluate starting knowledge of EF Skills	Completion of EF quiz	Forethought	Complete the "quiz" on EF knowledge	Quiz in online course
2	Learn about what EF skills deficits mean and how they are demonstrated in everyday life	Read article from Understood.org and answer reflection questions.	Performance	Read article "A Day in the Life of a Child with EF Issues" from (The Understood Team, 2020) Fill out and return reflection survey	Article Reflection survey
3	Learn about Cognitive flexibility and creativity	Watch PowerPoint "Cognitive flexibility and Creativity"	Performance	Watch the PowerPoint "Cognitive flexibility and Creativity".	PowerPoint presentation with audio Cognitive flexibility and creativity"
4	Experience and Evaluate personal creativity and cognitive flexibility.	Completion of "Test My Creativity" and completion and return of self-report survey	Evaluation	Take the online "test my creativity" test (aullVE, 2019) and place results into the self-report survey. Turn it in.	"Test my Creativity" test on line link. (AULive, 2019) Self-Report about results on the creativity test.
5	Experience and evaluate personal Cognitive Flexibility.	Completion of Stroop test and return of self-report survey	Evaluation	Go to "Take the Stroop Test" (Rahimi, 2019) then fill out and submit self-report survey	"Take the Stroop Test" survey Self-report survey
6	Learn about inhibitory control as it affects attention and behavior	Completion of viewing PowerPoint with audio and with imbedded video of Dr. Adele Diamond.	Performance	Watch the PowerPoint with audio and with imbedded video of Dr. Adele Diamond (The Understood Team, 2020)	"Inhibitory Control" PowerPoint with audio and embedded video. (The Understood

		Completion and turn in of comprehension survey		Complete and submit comprehension survey	Team, 2020) Comprehension self-report survey
7	Learn about the Marshmallow test as a demonstration of inhibitory control	Watch video. Complete and submit reflection survey.	Performance,	Watch video “The Marshmallow Test and executive Functions” (Understood, 2018) Complete and submit reflection survey	Video “The Marshmallow test and executive Functions” (Understood, 2018)  Reflection survey
8	Learn about how the working memory skills differ between a student with ADHD and a student without ADHD.	Watch PowerPoint with audio and embedded video complete and submit comprehension survey.	Performance	Watch PowerPoint “Working memory in students with and without ADHD” with embedded video (AboutKidsHealth, 2015).  Complete and submit comprehension survey.	PowerPoint Comprehension survey
9	Experience and evaluate cognitive processing speed and attention skills with a focus on working memory.	Complete “Brain Processing Speed test” and complete and submit self-report survey (Memory Health Check, 2020).	Performance	Complete “brain processing test” and complete and submit self-report survey.	Link to brain processing test Self-report survey
10	Evaluate gained knowledge of EF skills	Second Completion of EF quiz and write a description of knowledge gained	evaluation	Take the same quiz as was taken in step 1 and compare results. Determine concepts that were improved and any that still need to be improved.	EF quiz and follow up self-report

Table 2

*Recommended activity progression for the second module of the online portion of the PD*

Step	Learning objective	Criteria for evaluation	Phase	Activity	Materials
1	Evaluate starting knowledge of Assessment for, as, & of learning	Completion of Assessment for, as, & of learning quiz	Forethought	Complete the "quiz" on Assessment for, as, & of learning knowledge	Quiz in online course
2	Learn about what Assessment for, as & of learning mean and demonstrate knowledge.	Watch PowerPoint Complete and submit Examples worksheet	Performance	Watch and listen to the Assessment for, as & of Learning PowerPoint with audio. Complete and submit the Examples worksheet	PowerPoint "Assessment for, as,& of Learning" Examples worksheet
3	Learn about Assessments in Education and how they are used	Watch PowerPoint "Assessments in Education"	Performance	Watch the PowerPoint.	PowerPoint presentation" Cognitive flexibility and creativity"
4	Evaluate gained knowledge of Assessment for, of, & as learning skills	Second Completion of Assessment quiz and write a description of knowledge gained	evaluation	Take the same quiz as was taken in step 1 and compare results. Determine concepts that were improved and any that still need to be improved.	Assessment quiz and follow up self-report
5	Provide feedback about online modules	Feedback survey for Online Module completion	Evaluation	Complete the feedback for online modules survey	Feedback for online module survey

Table 3

*Agenda for day 1 of the face to face portion of the PD*

time	Learning objective	Criteria for evaluation	Activity type	Phase	Activity	Materials
1:00	Welcome participants/ icebreaker activity	Completion of welcome activity	Visual demonstration of folding an origami box by presenter, participants follow along and try to make the box.	Forethought, Performance, evaluation	Fold an origami box following visual and oral directions.	Origami paper, Origami box direction sheet
1:20	Understand how learning occurs in the SCT model	Brain map	Large group Discussion, Presenter lead	Evaluation	Discuss and create brain map about how learning occurs in the SCT model	Whiteboard or interactive screen
1:40	Set out PD progression and goals of PD by day and by whole PD	Comparison between Forethought self-evaluation of AaL PD and Final self-evaluation at end of the PD	Presenter lead, Participants fill OPUS worksheet	Forethought	Participants will fill out their worksheet learning objective section for Day 1	OPUS worksheet Pens, PPT slides of goals
2:00	Complete the Forethought quiz to evaluate what is known about AaL	Completion of the quiz	Individual	Performance	Participants take the "Gauge what you know about AaL quiz"	Printed quizzes. Pens.
2:15	Break					
2:30	Student self-evaluation of knowledge of AaL	Review of correct and incorrect answers to quiz	Presenter lead, individual	Evaluation	Participants review their quiz answers	Completed quiz, pens, answer key

2:45	Review what learning occurred online.	Kahoot game	Presenter lead, individual game	Performance, evaluation	Participants will play a Kahoot game with sections for SCT, EF, and Assessments	Prepared Kahoot
3:00	Break					
3:15	Determine what items the participants have knowledge of and which much be improved for AaL	OPUS worksheet	Small group work	Performance	Participants will review their results and work together as a small group to come up with ideas of how to improve the areas identified	OPUS worksheet
3:40	Set out individual goals for PD	OPUS worksheet	Small group work	Performance	Participants will fill out their worksheet	OPUS worksheet
4:00	Determine what supports or services will be needed to improve	Completion - OPUS worksheet provide to presenter as an exit ticket.	Individual work	Performance	Participants will fill out their worksheet	OPUS worksheet

*Table 4  
Agenda for day 2 of the face to face portion of the PD*

time	Learning objective	Criteria for evaluation	Activity type	Phase	Activity	Materials
1:00	Icebreaker activity- Sing in a round	Group sings Row, Row, Row your boat in a round	Presenter lead, whole group broken into smaller groups	Forethought. , Performance , evaluation	Break group into smaller groups and sing Row. Row. Row. your boat in a round	none

1:20	Set out goals for day 2	Participants understand the agenda	Presenter lead	Forethought	Review agenda and day learning objectives	Agenda, Learning objectives
1:30	Learn about rubrics to use as feedback and evaluation	Participants create a rubric to evaluate the round song	Present lead, small group	Performance	Step 1: Define Your Goal. Step 2: Choose a <b>Rubric</b> Type. Step 3: Determine Your Criteria. Step 4: <b>Create</b> Your Performance Levels. Step 5: Write Descriptors for Each Level of Your <b>Rubric</b> .	Pencil and paper rubric template, Google docs rubric maker, Rubistar(Rubistar, 2008)
2:00	Break					
2:15	Learn about rating scales to use as feedback and evaluation	Participants create a rating scale to evaluate the round song	Presenter lead, small group	Performance	1. descriptive words like always, usually, sometimes and never to determine specific strengths and needs 2. Writing the statement of the behavior desired, the wording is most important	Rating scale template

2:45	Identify scaffolding strategies to help students	Participants sort strategies into 3 categories of scaffolding and discuss additional methods	Presenter lead whole group	Performance	1. contact scaffolding 2. task scaffolding 3. material scaffolding	Scaffolding activities and examples, white board or interactive board.
3:15	Break					
3:30	Create an AaL Arts rubric and rating scale for class later evaluations	Participants use their knowledge of AaL to create a rubric or rating scale to be used when they are self-evaluating in the future.	Small group	Performance	Required elements of AaL, behaviors expected from teachers, environment, materials, interactions	Template for rubric, template for rating scales
4:00	End of day					

Table 5

## Agenda for day 2 of the face to face portion of the PD

time	Learning objective	Criteria for evaluation	Activity type	Phase	Activity	Materials
1:00	Icebreaker activity- Speak in a southern accent	Rubric self-eval prior, rubric after practice	Presenter lead, individual practice	Forethought , Performance, evaluation	Participants follow directions to speak words and phrases in a southern accent	<a href="https://youtu.be/EzkCOnq4kLU">https://youtu.be/EzkCOnq4kLU</a> Southern accent rubric (The Actor's Academy, 2019)
1:20	Set out goals for day 3	Participants understand the agenda	Presenter lead	Forethought	Review agenda and day learning objectives	Agenda, Learning objectives

1:30	Locate and read the PA SAS art standards and big ideas	Participants find information on the PA SAS website to fill in required information	Presenter lead, small group work	Performance	Find SAS website and review the learning standards and big ideas for PA in the arts	Computers, <a href="https://www.pdesas.org/">https://www.pdesas.org/</a> standards and big ideas (Commonwealth of PA, 2020)
2:00	Break					
2:15	Learn and practice how to focus feedback for improvement.	Participants practice giving focused feedback to each other.	Presenter lead, partner practice	Performance	To describe specific qualities of the work in relation to the learning targets	Scenario sheets
3:30	Break					
3:45	Discuss and plan for future performance evaluations	Participants understand the requirements	Presenter lead	Forethought	Determine time lines and methods	
4:00	End of day 3					

*Table 6*

*Agenda for day 3 of the face to face portion of the PD*

time	Learning objective	Criteria for evaluation	Activity type	Phase	Activity	Materials
1:00	Icebreaker activity- Dance the electric slide	Participants dance the electric slide	Group activity	Forethought, performance, evaluation	Watch a video, and follow along to dance the electric slide	How to do the electric slide (Howcast, 2013) Electric slide checklist



1:20	Set out goals for day 4	Participants understand the agenda	Presenter lead	Forethought	Review agenda and day learning objectives	Agenda, Learning objectives
1:30	Complete individual unit/lesson using OPUS worksheet	Participants complete a unit or lesson plan that they can use in their art classroom	Group work by art focus	Performance	1.Determine the learning objective 2. criteria and method for evaluation, 3. ideas and ways to address scaffolding needs.	OPUS worksheet
2:15	Break					
2:30	Present work to group/class	Participants describe lesson or unit.	Presentation by group	Performance	Groups present their unit/lesson ideas	
3:15	Complete the Self-evaluation quiz to evaluate what has been learned about AaL	Self-evaluation quiz completed and answers compared to Forethought quiz	individual	Evaluation	Participants take the same quiz taken in the beginning of Day 1	Paper quiz
3:30	complete self-evaluation of AaL skills and plan for improvement	OPUS worksheet	Individual	Evaluation	Participants will review their results and come up with ideas of how to improve the areas identified	OPUS worksheet

4:00	Provide feedback about the PD	Participants complete a course evaluation survey	Individual	Evaluation	Participants will evaluate the PD	PD evaluation page.
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### Appendix B: Interview Question Matrix

Interview	Background	Teacher	Teacher	Environment	Working	Cognitive	Inhibitory	Concluding
<p>I'd like to thank you once again for being willing to participate in the interview for my study. As I have mentioned to you before, my study seeks to understand more about the experiences of arts teachers while working with students who show EF deficits – having problems with memory, cognitive flexibility, and inhibitory control. The study also seeks to understand arts teachers' perceptions of what trainings or supports they would need to help them work with these students. Our interview today will last approximately one hour during which I will be asking you about your experiences teaching students who have EF deficits in the arts classroom and your feelings and ideas about trainings or supports you may need.</p>	X							
<p>Prior to today, you completed a consent form indicating that I have your permission (or not) to audio record our conversation. Are you still ok with me recording (or not) our conversation today?  <input type="checkbox"/> Yes <input type="checkbox"/> No            If yes: Thank you! Please let me know if at any point you want me to turn off the recorder or keep something you said off the record.</p>	X							

If no: Thank you for letting me know. I will only take notes of our conversation.								
Before we begin the interview, do you have any questions? [Discuss questions] If any questions (or other questions) arise at any point in this study, you can feel free to ask them at any time. I would be more than happy to answer your questions.	X							
1. Let's begin by discussing your art. Describe your art form and what you enjoy most about it.		X						
2. Describe how you go about teaching your art to others.		X	X					
3. Tell me about items, techniques, materials, and tools that are required to teach your art.	X		X	X				
4. Thinking about your arts classroom, describe a time when a student was unable to remember and apply crucial information in order to move to the next step of a task <b>Follow up:</b> What was your response to this situation? <b>Follow up :</b> Looking back now, describe what you would have done differently in this situation, if anything. <b>If no experience</b> – Go to next question			X		X			
5. Thinking about your arts classroom, describe a time when a student had difficulty taking in information and using that information to generate and to express their own ideas.			X		X			

<p><b>Follow up:</b> What was your response to this situation?</p> <p><b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything.</p> <p><b>If no experience</b> – Go to next question.</p>							
<p>6. Thinking about your arts classroom, describe a time when information just didn't "stick" with a student.</p> <p><b>Follow up:</b> What was your response to this situation?</p> <p><b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything.</p> <p><b>If no experience</b> – go to next question.</p>			X	X			
<p>7. Thinking about your arts classroom, describe a time when a student had trouble when a familiar routine was disrupted or a task became complicated.</p> <p><b>Follow up:</b> What was your response to this situation?</p> <p><b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything.</p> <p><b>If no experience</b> – Go to next question</p>			X		X		
<p>8. Thinking about your arts classroom, describe a time when a student became frustrated when a first attempt to solve a problem wasn't successful.</p> <p><b>Follow up:</b> What was your response to this situation?</p> <p><b>Follow up 2:</b> Looking back now,</p>			X		X		

describe what you would have done differently in this situation, if anything. <b>If no experience</b> – go to next question								
9. Thinking about your arts classroom, describe a time when a student was unable to see new ways to do familiar tasks or was unable make another choice when the first choice proved unworkable <b>Follow up:</b> What was your response to this situation? <b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything. <b>If no experience</b> – Go to next question			X			X		
10. Thinking about your arts classroom, describe a time when a student often said or did things without using a cushion of time to reflect. <b>Follow up:</b> What was your response to this situation? <b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything. <b>If no experience</b> – Go to next question			X				X	
11. Thinking about your arts classroom, describe a time when a student often rushed through work, sacrificing accuracy and completeness along the way. <b>Follow up:</b> What was your response to this situation? <b>Follow up 2:</b> Looking back now, describe what you would have			X				X	

done differently in this situation, if anything. <b>If no experience</b> – Go to next question								
12. Thinking about your arts classroom, describe a time when a student did whatever pleasurable thing came along without considering their obligations or commitments. <b>Follow up:</b> What was your response to this situation? <b>Follow up 2:</b> Looking back now, describe what you would have done differently in this situation, if anything. <b>If no experience</b> – Go to next question			X				X	
13. Describe any steps, methods, or programs that you have used in your arts classroom to combat these skill deficits. <b>Follow-up:</b> Describe the level of success of these steps, methods, or programs. <b>Follow up 2:</b> if you could change anything in these steps, methods, or program, describe what it would be.				X	X	X	X	X

### **Appendix C: Interview Questions**

1. Describe your art form and what you enjoy most about it.
2. Describe how you go about teaching your art to others.
3. Tell me about items, techniques, materials, and tools that are required to teach your art
4. Thinking about your arts classroom, describe a time when a student was unable to remember and apply crucial information in order to move to the next step of a task.
5. Thinking about your arts classroom, describe a time when a student had difficulty taking in information and using that information to generate and to express their own ideas.
6. Thinking about your arts classroom, describe a time when information just didn't "stick" with a student.
7. Thinking about your arts classroom, describe a time when a student had trouble when a familiar routine was disrupted, or a task became complicated.
8. Thinking about your arts classroom, describe a time when a student became frustrated when a first attempt to solve a problem wasn't successful.
9. Thinking about your arts classroom, describe a time when a student was unable to see new ways to do familiar tasks or was unable make another choice when the first choice proved unworkable
10. Thinking about your arts classroom, describe a time when a student often said or



did things without using a cushion of time to reflect.

11. Thinking about your arts classroom, describe a time when a student often rushed through work, sacrificing accuracy and completeness along the way
12. Thinking about your arts classroom, describe a time when a student did whatever pleasurable thing came along without considering their obligations or commitments
13. Describe any steps, methods, or programs that you have used in your arts classroom to support these skill deficits.

**Appendix D: PA State University Course Requirements for Bachelor's Degrees for****Teachers**

PA State University	Bachelor's degree	Total required credit hours	Required credit hours SPED	Required credits for art/form or specialization	PA Teacher Cert..
<b>Bloomsburg</b>					
	B.S.Ed. Middle Grades	121	10	72	Y
	Art Education	0	0	0	
	B.A. Music Education.	129	8	42	Y
	B.A. Theatre	120	0	48	N
	Dance	0	0	0	
<b>California</b>					
	B.S.Ed. Middle Grades	121	10	72	Y
	B.S.Ed. Art Education	120	6	85	Y
	B.A. Music Education.	0	0	0	
	B.A. Theatre	120	0	27	N
	Dance	0	0	0	
<b>Cheyney</b>					
	B.S.Ed. Middle Grades	0	0	0	
	B.S.Ed. Art Education	0	0	0	
	B.A. Music Ed.	0	0	0	
	B.A. Theatre	0	0	0	
	Dance	0	0	0	
<b>Clarion</b>					
	B.S.Ed. Middle Grades	123	12	63	Y
	B.S.Ed. Art Education	0	0	0	
	B.A. Music Ed.	0	0	0	
	B.A. Theatre	0	0	0	
	Dance	0	0	0	

East Stroudsburg	B.S.Ed. Middle Grades	120	12	78	Y
	B.S.Ed. Art Education	0	0	0	
	B.A. Music Ed.	0	0	0	
	B.A. Theatre Dance	120	0	65	N
		0	0	0	
Edinboro	B.S.Ed. Middle Grades	120	6	34	Y
	B.S.Ed. Art Education	120	6	39	Y
	B.A. Music Ed.	0	0	0	
	B.A. Theatre Dance	0	0	0	
		0	0	0	
IUP	B.S.Ed. Middle Level Educ.	125	5	72	Y
	B.S.Ed. Art Education	125	4	78	Y
	B.S Ed. Music Education	128	3	79	Y
	Theatre Dance	120	0	42	N
		0	0	0	
Kutztown	B.S.Ed. 4-8	123	9	84	Y
	B.A. Art Education	120	3	90	Y
	B.S Music Education	125	9	66	Y
	Theatre Dance	0	0	0	
		0	0	0	
Lock Haven	B.S.Ed. Middle Grades	121	9	72	Y
	B.S.Ed. Art Education	0	0	0	
	B.A. Music Ed.	0	0	0	
	B.A. Theatre	0	0	0	

Mansfield	Dance	0	0	0		
	B.S.Ed. Middle Grades	120	9	67	Y	
	B.S.Ed. Art Education	0	0	0		
	B.M. Music Education	125	9	72	Y	
	B.A. Theatre	0	0	0		
	Dance	0	0	0		
	Millersville	B.S.Ed. Middle Grades	123	9	57	Y
B.S.Ed. Art Education		126	6	87	Y	
B.S.Ed. Music Education		126	6	56	Y	
B.S. Communications		120	0	86	N	
Dance		0	0	0		
Shippensburg		B.S.Ed. Middle Grades	120	9	72	Y
		B.S.Ed. Art Education	126	9	52	Y
	B.A. Music Ed.	0	0	0		
	B.A. Theatre	0	0	0		
	Dance	0	0	0		
	Slippery Rock	B.S.Ed. Middle Grades	126	9	79	Y
		B.F.A teaching option	120	9	78	Y
B.F.A. Music ED		126	6	94	Y	
B.F.A. Theatre		120	0	78	N	
B.F.A Dance		120	0	60	N	
Westchester		B.S.Ed. Middle Grades	124	8	62	Y
		B.S. Ed. Art	0	0	0	
	B.M. Music	165	9	95	Y	

Education				
B.A. Theatre	120	0	56	N
Dance	0	0	0	

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Bloomsburg University [www.bloomu.edu](http://www.bloomu.edu); California University [www.calu.edu](http://www.calu.edu) :

Cheyney University [www.cheyney.edu](http://www.cheyney.edu); Clarion University [www.clarion.edu](http://www.clarion.edu); East

Stroudsburg University [www.esu.edu](http://www.esu.edu) ; Indiana University of PA [www.iup.edu](http://www.iup.edu);

Kutztown University [www.kutztown.edu](http://www.kutztown.edu); Lock Haven University [www.lockhaven.edu](http://www.lockhaven.edu);

Mansfield University [www.mansfield.edu](http://www.mansfield.edu); Millersville University [www.millersville.edu](http://www.millersville.edu);

Shippensburg University [www.sru.edu](http://www.sru.edu);;Slippery Rock University [www.slu.edu](http://www.slu.edu);

Westchester University

### Appendix E: Course Evaluations

#### Course Evaluations

##### OPUS PD Online Module Course Evaluation Survey

The instructional materials (i.e. readings, handouts, study guides, videos, activities) of the online modules increased my knowledge and skills in the subject matter

not at all true			Completely true	
1	2	3	4	5

The online module workload and requirements were appropriate for a Professional Development for educators.

not at all true			Completely true	
1	2	3	4	5

The course was well organized.

not at all true			Completely true	
1	2	3	4	5

The online modules gave me confidence in my knowledge of these subjects.

not at all true			Completely true	
1	2	3	4	5

Assignments in the online modules were reflective of the course content

not at all true			Completely true	
1	2	3	4	5

The online modules were organized in a manner that helped me understand underlying

concepts

not at all true

Completely true

1            2            3            4            5

I believe that what I am being asked to learn in this course is important

not at all true

Completely true

1            2            3            4            5

I would highly recommend this course to other teachers.

not at all true

Completely true

1            2            3            4            5

This course gave me confidence to do more advanced work in the subject.

not at all true

Completely true

1            2            3            4            5

Do you have any specific recommendations for improving this course?

#### OPUS PD FACE-TO-FACE Course Evaluation Survey

The instructional materials (i.e. readings, handouts, study guides, videos, activities) of the

face to face portion increased my knowledge and skills in the subject matter

not at all true

Completely true

1            2            3            4            5

The face to face course workload and requirements were appropriate for a Professional

Development for educators.

not at all true                      Completely true

1              2              3              4              5

The instructor's feedback to me was helpful and improved my understanding of the material.

not at all true                      Completely true

1              2              3              4              5

The online module portion and the face to face portion complemented each other

not at all true                      Completely true

1              2              3              4              5

The face to face portion gave me confidence in my knowledge of these subjects.

not at all true                      Completely true

1              2              3              4              5

Assignments in the face to face portion were reflective of the course content

not at all true                      Completely true

1              2              3              4              5

The face to face portion was organized in a manner that helped me understand underlying concepts

not at all true                      Completely true

1              2              3              4              5

The instructor effectively organized and facilitated well-run learning activities

not at all true                      Completely true



