

Multi-sector Workforce Development with Population-level Prevention

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Abstract

Workforce development and retention provide significant barriers for education, human services, and out-of-school time sectors. PAX Good Behavior Game and PAX Tools provide a proposed solution to the unique development and retention needs in these fields. PAX Good Behavior Game and PAX Tools are trauma-informed, evidence-based preventive interventions with proven effectiveness in randomized efficacy trials, real-world applications, and now, population-level implementations. Beginning in 2019, the state of Texas Health and Human Services Commission supported a statewide initiative to provide training in PAX programming to educators, human service professionals, and youth development professionals. This provided skills training in improving outcomes for over 10,000 Texas youth-serving professionals. The ongoing initiative and subsequent PAX programming elicited positive perceptions from participants, including appropriateness for the setting and population as well as support for the needs of the young people they serve – especially those with behavioral needs.

Keywords: PAX, Workforce Development, Prevention

1. Multi-sector Workforce Development and Population-level Prevention

The multi-sector workforce responsible for serving children and youth includes professionals within K-12 education, human services (HS), and out-of-school time (OST) occupations. These professions share challenges that adversely affect job satisfaction, retention, and public perception. The COVID-19 pandemic starkly illustrated this situation for these workers. As frontline personnel, they were asked to meet stakeholders' needs through new and flexible approaches, frequently over prolonged periods and in stressful environments, while contending with outside stressors as well. In response, many federal, state, and employer efforts have been made to enhance this critical multi-sector's overall efficacy and perception as a workforce.

Funding models and wage structures contribute to hardships within the workforce, including burnout, recruitment, motivation, and ongoing well-being. Tomasko et al. (2023) noted workers' specific concerns on wellness and benefits. Any workforce at the forefront of teaching or caring for children requires continuous education, professional development, and purposeful and substantive self-care opportunities. However, such opportunities are not plentiful with low wages, stretched budgets, and overworked staff and administration. This becomes a feedback loop for burnout, retention, and recruitment issues in attracting replacement staff due to low wages and growing public awareness of the intense nature of the work.

1.1 Retention and Recruitment

Despite the significant social and academic impact that the workforce has on children and youth through extensive interaction, wages are rarely commensurate with their essential roles (Allegretto, 2022; Yamashiro, 2022; Carver-Thomas & Darling-Hammond, 2019). The human services sector faces recruitment challenges, with state agencies experiencing a consistent vacancy rate of 15% in their positions (ACF-HHS, 2023). Additionally, 37% of OST employers indicated in the 2022-2023 School Pulse Panel Survey their inability to offer competitive wages, leading their staff to pursue better-paying opportunities in the fast-food industry (Hinchcliffe, 2023).

Like HS workers and OST providers, K-12 educators must adapt to rapid technological changes, demographic shifts, environmental issues, discoveries in neuroscience, and new program or curriculum demands. Unfortunately, the current structure and funding model do not allow for equitable access to professional development that ensures responsiveness in these areas. However, strategies and remedies exist to mitigate teachers leaving the field, moving schools, or shifting to non-instructional roles. The use of evidence-based,

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trauma-informed strategies within the classroom has proven to be effective in producing job satisfaction, teacher retention, and improving lifetime outcomes for students.

Educators also struggle with the undervalued teaching role and the increase in unwanted classroom behaviors that interfere with the learning environment. The pandemic worsened disruptive classroom behavior, influencing staff attrition and shortages, especially in high-poverty and rural areas, with a total vacancy in public schools for 2021-2022 of 10% nationally (Franco & Patrick, 2023). Teachers' readiness to tackle new challenges posed by students' trauma and dysregulation after intermittent quarantine was inconsistent. Data shows that 23% of teachers left their school in the 2022-23 school year, representing a significantly higher rate than during the pandemic. The data shows a concerning trend as schools serving Title I students experienced a significant loss of teachers, with a 29% decrease between October 2022 and October 2023. In comparison, schools with fewer students in poverty had a lower decrease of 19% (ERS, 2024). Figure 1 provides actionable employer, state, and federal strategies for addressing shortages in the K-12 Education sector.

Figure 1. K-12 Educator Retention and Recruitment Efforts

Develop learning teams at all system levels instead of “one teacher to one classroom in isolation.”	The Education Commission, 2019
Benchmark pay relative to other similarly skilled professions using state and out-of-state data.	GAO, 2022
Provide housing and childcare benefits.	NEA, 2024
Improve working conditions: Increase staffing levels, freeing up teachers from clerical and other non-teaching duties; ensure inclusive environments; provide opportunities for administrator and leadership development.	NEA, 2024
Grow Your Own Teachers increases the number of educators in the pipeline by providing training, financial support, and region-specific assistance, enhancing diversity in the educator workforce specific to local needs.	Barkowski, 2021
Population-level System of Care Support for Children	Fruth, Irving, Fechner, & Embry, 2024

1.2 Public Misperceptions of Multi-sector Occupational Roles

Human services professionals, K-12 educators, and out-of-school time service providers also routinely contend with a public misperception of the nature of their work. Within the multi-sector workforce, out-of-school time service providers range from afterschool and summer programs to youth workers in locally funded youth centers. The OST delivery options include familiar, long-established national programs such as Boys & Girls Clubs, YMCA, Girls Inc., and others. While OST supports 10 million children a year in some form of before, after school, or summer activity, characterizing this care as child-minding severely misrepresents the role's depth, breadth, and often emancipatory impact (Baldrige, 2023; Gardes, 2022).

In examining the obstacles that Out-of-School Time (OST) providers face in serving children and youth, and in some regard, educators and HS providers, it is imperative to consider a spectrum of compounding factors. These include, but are not limited to, funding models, the pervasive effects of perception, and the overarching impact of a global pandemic. The host of challenges confronted by OST and, in many ways, the rest of the children and youth-serving multi-sector workforce requires a multilevel analytical approach towards all three sectors to capture a broader spectrum of determinants. Figure 2 shows actionable employer, state, and federal strategies within the out-of-school time sector.

Figure 2. Out-of-school Time Retention and Recruitment Efforts

Promote youth organizations where youth workers specifically work with marginalized youth by race, class, and gender and utilize those sites for pre-service teacher practicums.	Baldrige, 2023
Change misconceptions about OST programs with youth by using peer recruiters, social media, and involving parents early in recruitment.	Terzian et al., 2009
State legislatures leverage funding streams beyond 2024 to ensure that any remaining dollars are put toward evidence-based academic recovery and social-emotional support programs.	Forte, 2024
Population-level implementations of HS and OST worker professional development.	Fruth, Irving, Fechner, & Embry, 2023

1.3 PAX Good Behavior Game in the Classroom

The PAX Good Behavior Game is a registered trademark of PAXIS Institute and is proven to prime and prepare pre-service candidates as well as buffer in-service educators against workplace stress, burnout, poor sense of efficacy, and other predictors of turnover. The PAX Good Behavior Game is a classroom-based universal preventive intervention used by teachers in their daily work with students in the classroom. This evidence-based practice impacts academic, behavioral, and lifetime outcomes for young people as well as professional and wellness outcomes for the educators who implement (Embry et al., 2022). These outcomes for educational professionals stem from the intervention's effect on a number of variables that predict retention, development, and positive performance. In a pre-service environment, PAX Good Behavior Game significantly increased educators' overall sense of efficacy as well as efficacy in the fields of instructional strategies, student engagement, and classroom management for early childhood, middle childhood, and special education teachers (Fruth & Huber, 2015; Fruth et al., 2016; Fruth et al., 2017). Learning and implementing the PAX Good Behavior Game utilizes a coaching model that has resulted in an increased sense of efficacy for in-service teachers in both initial training as well as follow-up professional development trainings (Becker et al., 2013; Huber et al., 2016; Embry et al., 2019). Increasing teachers' sense of efficacy is vital for retaining and developing the teacher workforce. Teachers trained and implementing the PAX Good Behavior Game also experienced significant reductions in workplace stress (Ghaderi et al., 2017).

This demonstrates that the PAX Good Behavior Game is a powerful intervention for promoting the development and retention of a vital national workforce. The PAX Good Behavior Game develops pre-and in-service teachers and protects against primary factors for burnout and turnover by adding to teachers' skillsets in managing effective communication, relationships, and collaboration with young people in completing daily tasks. Thereby, the PAX Good Behavior Game operates as a universal preventive intervention for students while functioning as more effective evidence-based classroom management strategies for educators (Embry, 2002). For example, teachers use the strategies in the PAX Good Behavior Game to more successfully clarify expectations, obtain and maintain attention, select students, finish tasks, and provide positive and corrective feedback.

The host of strategies of the PAX Good Behavior Game, including the operative mechanism—periodic interdependent group contingencies utilizing peer reinforcement to inhibit unwanted classroom behavior—provide for an array of proximal and lifetime outcomes for students. These include a 75% reduction in off-task or problematic behavior (Embry, 2002; Wilson et al., 2014). They also include increased reading and math scores (Fruth, 2014; Weis et al., 2015). Students receiving the PAX Good Behavior Game required fewer special education services and had higher high school graduation and college entry rates (Bradshaw et al., 2009). They also recorded increased number of friendships and reduced bullying (Ialongo et al., 1999; Domitrovich et al., 2015). Both Huber et al. (2016) and Biglan et al. (2012) associate this range of increased classroom outcomes from the nurturing environment created as a result of the cascading, transactional impact of effective strategies and their improvement of the relationship between teachers and students.

For students receiving the PAX Good Behavior Game in the classroom for one year, the impact continues into adulthood, according to ongoing tracking by Johns Hopkins University (Ialongo et al., 1999; Ialongo et al., 2001; Kellam et al., 2008). This includes less violent, aggressive behavior and fewer associated conduct disorders (Embry et al., 1996; Ialongo et al., 1999; Kellam et al., 1994; Kellam et al., 1998; Petras et al., 2011). Less violent, anti-social behavior resulted in lower crime rates in teenage and young adult years (Cil et al., 2021; Kellam et al., 2008; Petras et al., 2008). These students were also diagnosed with fewer psychiatric disorders

(Kellam et al., 2008; Wang et al., 2009). Alcohol, tobacco, as well as illicit drug use, including opioids, in adulthood also decreased (Kellam et al., 2014; Furr-Holden et al., 2004). These young people recorded delayed initial sexual activity and less high-risk sexual behavior (Kellam et al., 2014). Young people exposed to the PAX Good Behavior Game were also less likely to contemplate, attempt, and complete suicide (Wilcox et al., 2008; Katz et al., 2013). They even demonstrated enhanced expression of brain-derived neurotrophic factor – genes associated with memory and protection from pathological conditions (Musci et al., 2014).

Providing effective professional development for educators implementing the PAX Good Behavior Game has included guidance on integrating the strategies and outcomes into existing federal, state, and local initiatives such as Positive Behavioral Interventions and Supports, Social-emotional Learning, Trauma-informed Classrooms, Multi-Tiered System of Supports, and others.

1.4 PAX Tools in the Community

PAX Tools is a registered trademark of PAXIS Institute and provides trauma-informed, evidence-based strategies for any adult who works with or cares for young people outside the classroom environment (Fruth, Irving, Fechner, & Embry, 2023). PAX Tools comes in the form of focused training for those in behavioral health, counseling, coordinated care, health & parent education, and even out-of-school time such as summer camps, youth development, and even caregiving. PAX Tools strategies are utilized to alleviate stress, conflict, and barriers to collaboration that these professionals and caregivers may encounter in their daily work and care. They also demonstrate explicit association with relevant standards and initiatives for the intended professionals. For example, PAX Tools for Human Services promotes explicit integration with Trauma-informed Care, while PAX Tools for Youth Workers promotes each strategy's role in the Positive Youth Development framework (Lerner & Lerner, 2013 & Irving, 2024).

PAX Tools is also especially impactful to workforce development in that it provides groups who previously had few or no professional development opportunities with access to trauma-informed, evidence-based strategies. This lack of professional development opportunities, particularly in the way of behavioral strategies, leaves human service and youth development workers woefully unprepared for working directly with young people – especially entry-level workers. Also, while professional development is part of the ongoing credentialing process for teachers and counselors, other professionals such as youth workers, coaches, and peer supporters may find it difficult to access such training without external support. This disparate access by sector and geography has prompted several states and provinces to include community-based training in their population-level implementations of PAX programming (Jiang et al., 2018, Fruth, 2024, & Fruth, Irving, Fechner, & Embry, 2024).

PAX Tools consists of a menu of individual evidence-based behavioral strategies that utilize fundamental behavioral science to improve behavior, routines, and cooperation in youth (Embry, 2004). Prescribing narrowly tailored behavioral strategies to address precisely identified problems allows caring adults to help young people make rapid, lasting improvement that both the adult and young person can document and appreciate. These narrowly tailored strategies have been shown to generate more effective, consistent, and predictable outcomes than larger behavioral programs that are less transferrable across settings or stakeholders, contain inert and inappropriate elements, or lack cultural, age, or functional appropriateness (Embry & Biglan, 2008; Embry, 2011). PAX Tools provides targeted evidence-based strategies that can be selected to mitigate conflict and misunderstanding between adults and young people in numerous scenarios in the community. These scenarios may include getting and staying on the same page with expectations, eliciting and maintaining focused attention, staying on task, delivering corrective or reinforcing feedback, reinforcing desired behavior, de-escalating tension, restoring relationships after a transgression, improving decision-making, and more. Further, PAX Tools strategies can be used independently or combined for synergistic effects (Fruth et al., 2021 & Fruth et al., 2024).

PAX Tools has shown remarkable outcomes for young people and the adults who care for them, including significantly reduced symptoms of depression in young people and a significant increase in young people's ability to solve problems on their own. PAX Tools has also demonstrated significant outcomes pertaining to developing and maintaining the human service and youth development workforce. Organizations utilizing PAX Tools have reported overwhelmingly reduced conflict between staff and youth as well as conflict among youth (Fruth et al., 2015). Professionals utilizing PAX Tools in their work with young people have also reported significantly greater supervisor recognition for their performance (Fruth, Irving, Fechner & Embry, 2023).

Equipping multiple sectors with trauma-informed, evidence-based strategies in the form of universal prevention and workplace skills training ensures a healthy workforce to care for young people. It also provides a system of care approach that, when paired with the PAX Good Behavior Game, provides for a unified language and approach to working with young people. For instance, congregate care organizations have utilized PAX Tools to establish a unified professional development and approach with young people across their staff resulting in both CARF and QRTP accreditation (Fechner & Fruth, 2023).

1.5 Population-level Prevention in Texas

Beginning in 2019, the state of Texas Health and Human Services Commission (HHSC) utilized State Opioid Response (Texas Targeted Opioid Response) funding to partner with PAXIS Institute to equip educators, human service professionals, and youth development professionals of Texas with trauma-informed, evidence-based programming at no cost to the participant or organization. For this population-level implementation, HHSC sought to disseminate training in coordination with the 20 Educational Service Centers collectively serving all regions of the state. One Educational Service Center served as the coordinator and fiscal agent for the initiative to partner with PAXIS Institute in planning logistics for statewide at-large trainings. This method allowed individual professionals an opportunity to take part in training as well as an opportunity for officials from school districts or human service organizations to send representatives to consider site-specific trainings for the professionals in their facilities. Researchers from the center partnered with PAXIS Institute to collect and analyze data for quarterly reporting and annual dissemination.

1.6 Implementing Universal Prevention in a Pandemic

The COVID-19 Pandemic and subsequent quarantine required significant flexibility from all partners and project participants in the very first fiscal year of the project. To that point, the majority of PAX training came in the form of in-person, day-long group trainings, consistent with the traditional professional development methods for educators and human service professionals. However, the onset of the pandemic and corresponding safety measures required a quick pivot to live virtual and other online training mechanisms.

Live virtual training broken up into shorter segments over the course of several days, as well as self-paced online training with asynchronous engagement, allowed professionals to receive training in trauma-informed, evidence-based strategies when they needed them most. Spikes in health issues, absenteeism, problematic behavior, stress at home, academic failure as well as the reduction or loss of some services, created an even more pressing need for all adults who worked with young people to possess trauma-informed strategies for collaborating with young people. Beyond merely a reduction in educational and mental health services, school and service closings brought on by quarantine created a precipitous drop in the monitoring and awareness of potential abuse, mental health needs, as well as educational and developmental progress. Teachers, counselors, YMCA staff, and more all serve a vital role in their daily observation and monitoring of children in these areas and signal the need for evaluation or the potential for additional services. All these professionals also have the potential to serve as trusted, caring adults to the young people in their care and are typically who those young people confide in during times of stress or revelation.

All this amplified the need for trauma-informed, evidence-based strategies for all professionals in youth-serving roles. The increased stress and trauma faced by everyone, especially children, along with severely reduced opportunities for in-person interaction and observation made each contact precious and crucial. Without evidence-based strategies to utilize in these now infrequent interactions, it becomes difficult to separate the “noise” of rather predictable emotional dysregulation given the circumstances and true symptoms of distress requiring additional services. Providing trauma-informed, evidence-based strategies to all adults became a distinct priority for all partners in the project.

2. Methods

2.1 Design

The Texas HHSC prevention initiative utilized a quasi-experimental intervention-only pre/post-test evaluation design. This design is appropriate for monitoring public health initiatives at a population level (CDC, 2019). Population-level initiatives such as the HHSC utilize strategies and programming that have already shown significant outcomes with considerable effect sizes at the efficacy, effectiveness, and real-world/pilot-level trials. Population-level evaluation involves foregoing more sensitive methodologies used at the earlier, smaller levels of testing in order to monitor proximal outcomes across the population for correspondence with outcomes from other studies. Evaluation for this initiative included a range of instruments gauging proximal outcomes with predictability for long-term outcomes for implementers and the young people they work with.

2.2 Measures

Participants in this initiative who took part in training could also opt into pre and post-questionnaires. The questionnaires were delivered via email link immediately after training and then again several weeks into implementation. All responses to both sets of surveys were anonymous, but coded with unique identifications to associate participants' responses as pre and post paired samples. Instruments for each training contained customized items created in collaboration with the funder and stakeholder consistent with their aims for the project, including improving the workforce's skills, sense of efficacy, and overall likelihood for retention.

Participants detailed their experiences and impressions of training on the pre-questionnaire in areas, including professional gains, integration with existing policy, comprehension of strategies, intention to implement, confidence in implementing, appropriateness for settings, as well as thoughts about sustainability. Post-questionnaire items included frequency of use, appropriateness of the intervention, success thus far, integration with existing programming, perceived effect on discipline, and perceived effect on implementer well-being. The instruments also incorporated factor-analyzed items from standardized measures detecting workplace efficacy and stress in adults as well as social development and risk probability for psychiatric disorders in young people (Maslach et al., 1997; Tshannen-Moran & Woolfolk-Hoy, 2001; Goodman, 1997; Corrigan, 2002).

2.3 Population

Stakeholders spread awareness of the initiative through the Educational Service Center network. These organizations routinely provide professional development as well as additional resources to schools and educators within their region. This positioned them as excellent geographical and logistical focal points for the population-level dissemination. Though recommended and supported by multiple departments and sectors, the training remained optional for all participants. Thus, many of the trainings early in the initiative were at large and open to anyone in the state. This allowed schools and organizations to send representatives to training and pilot the intervention at no cost. After proof of concept and positive results in these pilots, many schools and organizations opted for site-specific training for their entire staff. At the time of publication, the initiative has provided 10,537 such professionals with training in trauma-informed, evidence-based strategies for working with young people. The total number of professionals trained by training can be found in Figure 3.

Figure 3. Texas Professionals Trained by Training Type

PAX Trainings	FY 21	FY 22	FY23	FY 24
PAX Tools for Human Services	624	520	883	484
PAX Tools for Youth Worker	-	-	179	119
PAX Tools for Community Educators	297	118	151	34
PAX Tools for Caregivers	-	-	-	96
PAX Good Behavior Game	1336	1664	3044	665
PAX Partner	46	39	60	3
PAX Next Steps	-	48	98	14
PAX Heroes	-	-	-	15
Total	2303	2389	4415	1430

3. Results

From FY21 through FY24, 10,537 Texas professionals, including educators, human service professionals, youth development professionals, parent and community educators, youth workers, and specialized caregivers, participated in PAX training. Participants from both school and community-based settings provided positive feedback on their use of the intervention.

Human service professionals, including care coordinators, out-of-school time directors and managers, counselors, juvenile justice, and others, participated in PAX Tools for Human Services training. The majority of these professionals marked the highest rating for PAX Tools on the constructs of *Appropriateness* (77.39%), *Consistent with policy* (69.48%), and *Understanding* (62.58%) Human service professional feedback is found in Figure 4.

Figure 4. PAX Tools for Human Services Participant Feedback

Construct	Response	Number	Percent
Appropriate for populations you work with	Not appropriate	9	1.13%
	Appropriate	171	21.48%
	Very appropriate	616	77.39%
Level of understanding to implement strategies	Unclear	1	0.13%
	Somewhat clear	28	3.50%
	Clear	270	33.79%
	Very clear	500	62.58%
Consistent with policy	Not consistent	8	1.99%
	Somewhat consistent	115	28.54%
	Very consistent	280	69.48%

Youth workers, entry-level youth development professionals, and out-of-school time seasonal and part-time staff participated in PAX Tools for Youth Workers training. A majority of these professionals marked the highest rating for PAX Tools on the construct of *Confident Implementing* (76.10%) and *Consistency with Objectives* (69.76%). Youth worker feedback is found in Figure 5.

Figure 5. PAX Tools for Youth Workers Participant Feedback

Construct	Response	Number	Percent
Consistent w/ objectives	Not consistent	3	1.46%
	Somewhat consistent	59	28.76%
	Very consistent	143	69.76%
Confident implementing	Not confident	1	0.49%
	Somewhat confident	48	23.41%
	Very confident	156	76.10%

Community educators, parent educators, health educators, and public health educators participated in PAX Tools for Community Educators training. The overwhelming majority of these professionals marked the highest rating for the construct of *Appropriateness* (85.58%), and a plurality marked the highest rating for the construct of *Intent to Use* (49.50%). Community educator feedback is found in Figure 6.

Figure 6. PAX Tools for Community Educators Feedback

Construct	Response	Number	Percent
Appropriate for populations	Not appropriate	0	0
	Somewhat appropriate	20	9.62%
	Very appropriate	178	85.58%
Intent to conduct workshops	Do not intend to conduct	8	3.96%
	Limited	94	46.53%
	Will conduct widely	100	49.50%

Caregivers, including grandparents, foster parents, kinship parents, and adoptive parents of children in care participated in PAX Tools for Caregivers training. The majority of these caregivers marked the highest rating for the construct Appropriateness (58.54%), and a plurality marked *Likely to Use* (51.22%). Caregiver feedback is found in Figure 7.

Figure 7. PAX Tools for Caregivers Feedback

Construct	Response	Number	Percent
Appropriate for setting	Not appropriate	0	0
	Somewhat appropriate	15	36.59%
	Very appropriate	24	58.54%
Likely to implement	Not likely	0	0
	Somewhat likely	7	17.07%
	Likely	21	51.22%
	Very Likely	11	26.83%

Schoolteachers, administrators, paraeducators, and other educational professionals participated in PAX Good Behavior Game training. The majority of these educators marked the highest ratings for the constructs of *Useful for Testing* (63.03%), *Support for Behavior* (73.62%), and *Understanding Strategies* (50.88%). Educator feedback from PAX Good Behavior Game training is found in Figure 8.

Figure 8. PAX Good Behavior Game Feedback

Construct	Response	Number	Percent
Useful preparing for testing	Not useful	13	1.35%
	Useful	343	36.62%
	Very useful	607	63.03%
Support for behavioral difficulties	Not helpful	8	0.83%
	Somewhat helpful	246	25.55%
	Very helpful	709	73.62%
Understand strategies	Not able to implement	4	0.42%
	Could implement some	66	6.85%
	Could implement many	403	41.85%
	Could implement all	490	50.88%

Teacher leaders, curriculum coaches, school counselors, and other educational support professionals participated in PAX Partner training. A plurality of these educational professionals marked the middle rating for the construct of *Consistent with Policy* (44.83%) and a majority marked the highest rating for *Confidence Supporting* (58.62%). Educator feedback from PAX Partner training is found in Figure 9.

Figure 9. PAX Partner Feedback

Construct	Response	Number	Percent
Consistent with policy	Not consistent	9	15.52%
	Somewhat consistent	26	44.83%
	Very consistent	23	39.66%
Confident supporting teachers	Not confident	4	6.90%
	Somewhat confident	20	34.48%
	Very confident	34	58.62%

4. Discussion

The state of Texas commissioned a universal preventive intervention implementation in the form of PAX programming in order to prepare and develop the multi-sector workforce responsible for educating, treating, and caring for young people. As training, implementation, and evaluation continue beyond the publication of this manuscript in 2024, the proximal outcomes indicate that the initiative has successfully bolstered the preparation, skill sets, and efficacy of the workforce. The initiative provided professional development programming involving trauma-informed, evidence-based strategies for working with young people that were narrowly tailored to each in a range of professional settings and roles. This included specialized training for teachers, other school-based professionals, counselors/therapists, youth development professionals, and even specialized caregivers for children in care. Many of these roles, such as youth work and other entry-level positions, have had little to no access to professional development programming. This allowed the skills training provided in the initiative to fill a necessary gap in the confidence, safety, and efficacy of those charged with caring for young people – some for the very first time. The range of professionals and caregivers making up the multi-sector workforce all reported similarly high levels of understanding, appropriateness, and utility for the strategies they adopted and implemented through the initiative.

Though the trauma-informed, evidence-based programming provided in the initiative was tailored to various roles within the multi-sector workforce, its universal nature and intention promotes a host of synergistic effects. Individual professionals and organizations recognize benefits such as improved behavior, collaboration, and engagement from young people. Providing each of the roles within the workforce with access to the universal strategies ensures a shared language and approach for working with young people. Having a teacher, counselor, and Boys & Girls Club staff member, all promoting positive behavior and relationships with a unified perspective and similar strategies tailored to their setting and role creates a nurturing environment in that setting in which a young person can thrive. This allows young people to practice communication, collaboration, and behavioral skills in a supportive environment with a skilled and trusted adult. This practice gives rise to resilience and the generalizability of skills and strategies to other more adverse or challenging environments. For instance, rehearsing self-regulation in a controlled classroom environment generalizes to self-regulation that prevents opioid misuse later in life (Ialongo et al., 1999).

Based on the data, the multi-sector workforce in Texas was readily able to generalize and apply the strategies they learned in PAX training in their own settings. To this effect, PAX programming offers a unique implementation by providing strategies meant for integration into the daily tasks and functions of any youth-serving worker. The effects the strategies have on young people, such as decreased problematic behavior and increased focus ensure that the youth-serving worker is more effective in their prescribed role with young people. For instance, a student who can maintain focus and avoid distraction becomes a more successful pupil for the teacher charged with improving their reading and math outcomes. Moreover, when professionals implement effective strategies and the young people in their care have improved outcomes, this creates a compounding and cascading cycle that also results in improved relationships between professionals and young people.

This set of cascading and mutually reinforcing outcomes for both the workforce and the young people they serve comes as a result of a unique nature of the programming. In each instance across the workforce, PAX programming is integrated into the daily tasks of the professional, increasing the professional's efficiency and effectiveness in those tasks. This integration of programming for improved outcomes is in stark contrast to the majority of professional development and prevention programs, which require replacing processes and procedures

or adding a curriculum to disseminate. Both of these are time-consuming, expensive, and less effective than integrating trauma-informed, evidence-based strategies into their existing practices.

This vital workforce has historically faced barriers in their work with young people. However, with contemporary challenges such as funding structures, the Pandemic, and few professional development opportunities, these professionals did not have the capacity to carry out their expanding roles or an initiative to save the lives of children without addressing the needs of the workforce. Ultimately, disseminating an evidence-based preventive intervention to build lifelong regulation and corresponding outcomes for the young people of Texas, including reduced drug misuse and psychiatric disorders, required a population-level workforce development initiative for those who teach, treat, and care for them. It required tangible, practical strategies to improve the outcomes and effectiveness of the range of workers across the youth-serving workforce. This allows for the designed redundancy and effective dosage of programming to make lasting change in the lives of young people – the central charge of the Texas HHSC and the Texas Targeted Opioid Response initiative. Consistent with its history of statistically significant impact with notable effect sizes across an array of cascading outcomes, some still being discovered today, PAX programming provided an effective solution to both workforce development and the future of young people in Texas.

References

- Allegretto, Sylvia A. (2022). The teacher pay penalty has hit a new high. Washington, DC: Economic Policy Institute.
- Baldrige, B. (2023, April 18). *The power of out-of-school learning: Insight into the out-of-school learning sector and its unique impact on children's lives*. Harvard Graduate School of Education
<https://www.gse.harvard.edu/ideas/edcast/23/04/power-out-school-learning>.
- Bardowski, E. (2021, December 7). *REL Southwest supporting state education agencies to design and implement Grow Your Own Teacher programs*. IES-Regional Educational Laboratory Program.
<https://ies.ed.gov/ncee/rel/Products/Region/southwest/Blog/100453>
- Becker, K. D., Darney, D., Domitrovich, C., Keperling, J. P., & Ialongo, N. S. (2013). Supporting universal prevention programs: A two-phased coaching model. *Clinical Child and Family Psychology Review*, 16(2), 213-228.
- Biglan, A., Flay, B.R., Embry, D.D., & Sandler, I.N. (2012). The critical role of nurturing environments for promoting human well-being. *American Psychologist*, 67(4),
- Bradshaw, C. P., Zmuda, J. H., Kellam, S. G., & Ialongo, N. S. (2009). Longitudinal impact of two universal preventive interventions in first grade on educational outcomes in high school. *Journal of Educational Psychology*. 101(4). 926-937.
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives*, 27(36).
<http://dx.doi.org/10.14507/epaa.27.3699>
- Centers for Disease Control and Prevention. (2019). Evaluation Guide. Retrieved from
<https://www.cdc.gov/evaluation/guide/index.htm>
- Cil, G., Fruth, J., & Biglan, T. (2021). Evaluating population-level implementations of evidence-based programming: PAX Good Behavior Game and youth crime. *International Journal of Education and Social Science*, 8(5).
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives*, 27(36).
<http://dx.doi.org/10.14507/epaa.27.3699>
- Corrigan, A. "Psychometric Properties of the Social Competence Scale - Teacher and Parent Ratings," 2002.
- Durlak, J. & Weissberg, R. (2007). *The impact of after-school programs that promote personal and social skills*. Collaborative for Academic, Social, and Emotional Learning. <https://casel.org/impact-of-after-school-programs-that-promote-personal-and-social-skills/#related>
- Domitrovich, C. E., Pas, E. T., Bradshaw, C. P., Becker, K. D., Keperling, J. P., Embry, D. D., & Ialongo, N. (2015). Individual and school organizational factors that influence implementation of the PAX Good Behavior Game intervention. *Prevention Science*. DOI: 10.1007/s11121-015-0557-8.
- Education Commission, 2019. Transforming the education workforce: Learning teams for a learning generation. New York Education Commission.
- Education Resource Strategies (2024, March 14). *Examining school-level teacher turnover trends from 2021 to 2023: A new angle on a pervasive issue* <https://www.erstrategies.org/tap/teacher-turnover-trends-analysis/>
- Embry, D. D. (2002). The Good Behavior Game: A best practice candidate as a universal behavioral vaccine. *Clinical Child & Family Psychology Review*, 5(4). 273-297.

- Embry, D.D. (2004). Community-based prevention using simple, low-cost, evidence-based kernels and behavior vaccines. *Journal of Community Psychology*, 32(5), 575-591.
- Embry, D. D. (2011). Behavioral Vaccines and Evidence-Based Kernels: Nonpharmaceutical Approaches for the Prevention of Mental, Emotional, and Behavioral Disorders. *Psychiatric Clinics of North America*, 34(March), 1-34.
- Embry, D.D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, 11(3), 75-113.
- Embry, D. D., Flannery, D. J., Vazsonyi, A. T., Powell, K. E., & Atha, H. (1996). Peacebuilders: a theoretically driven, school-based model for early violence prevention. *American Journal of Preventative Medicine*, 12(5). 91-100.
- Embry, D.D., Fruth, J.D., & Irving, C. (2022). PAX Good Behavior Game (5th Ed.). Tucson, AZ: PAXIS Institute.
- Embry, D.D., Van Ryzin, M., Biglan, A., & Fruth, J. (2019). Increasing efficacy in a population-level implementation. *Journal of Psychology and Behavioral Science*. 7(2).
- Fechner, A., & Fruth, J. (2023). PAX Tools: A case study of evidence-based strategies implementation with diffusion across the system of care. *The British Journal of Health Science*, 1.
- Forte, D. (2024). *Keeping learning recovery going when federal pandemic funds dry up*. The 74. <https://www.the74million.org/article/keeping-learning-recovery-going-when-federal-pandemic-funds-dry-up/>
- Franco, M., & Patrick, K. (2023). State teacher shortages: Teaching positions left vacant or filled by teachers without full certification. Learning Policy Institute. <https://learningpolicyinstitute.org/product/state-teacher-shortages-vacancy>
- Fruth, J.D. (2014). Impact of a universal prevention strategy on reading and behavioral outcomes. *Reading Improvement*, 51(3). 281-290.
- Fruth, J.D., & Huber, M. (2015). Teaching prevention: The impact of a universal preventive intervention on teacher candidates. *Journal of Education and Human Development*, 4(1).
- Fruth, J.D., Huber, M., & Avila-John, A. (2017). Universal prevention for middle childhood students and candidates. *Critical Issues in Teacher Education*, 24(1).
- Fruth, J.D., Miracle, T.L., Fletcher, P.J., & Avila-John, A. (2016). Universal prevention and addressing gender inequality in classrooms. *Journal of Psychology and Behavioral Science*. 4(2).
- Fruth, J.D., Irving, C., Fechner, A., & Embry, D. (2023). PAX Tools: Behavioral support programming for youth workers. *Relational Child and Youth Care Practice*, 35(3).
- Fruth, J., Irving, C., Fechner, A., & Embry, D. (2024). Population-level PAX: Prevention programming across the youth system of care. *Journal of Education and Social Policy*, 11(1).
- Fruth, J.D., Irving, C., Tummino, M.K. & Embry, D.D., (2021) *PAX Tools for Human Services*. Tucson AZ: PAXIS Institute.
- Fruth, J.D., Irving, C., Tummino, M.K. & Embry, D.D., (2024) *PAX Tools for Youth Development*. Tucson AZ: PAXIS Institute.
- Fruth, J.D., Mayer, G.H., & Finnegan, E.M. (2015). Creating nurturing environments and engaging populations with evidence-based kernels. *Journal of Instructional Psychology*, 42(1).
- Furr-Holden, C. D., Ialongo, N. S., Anthony, J. C., Petras, H., & Kellam, S. G. (2004). Developmentally inspired drug prevention: middle school outcomes in a school-based randomized prevention trial. *Drug and Alcohol Dependence*, 73(2).
- Ghaderi, A., M. Johansson and P. Enebrink (2017). Pilotstudie av PAX i skolan: En kulturanpassad version av PAX Good Behavior Game. Stockholm, Sweden, Karolinska Institutet: 33.
- Goodman, R. (1997). *Strengths and Difficulties Questionnaire (SDQ)* [Database record]. APA PsycTests. <https://doi.org/10.1037/t00540-000>
- Hinchcliffe, K. November 29, 2023, Education Writers Association. After-school Program Trends Reporters Should Cover <https://ewa.org/how-to-cover-the-story/barriers-to-kids-accessing-after-school-programs>
- Huber, M., Fruth, J.D., Avila-John, A. & Ramirez, E. (2016). Teacher self-efficacy and student outcomes: A transactional approach to prevention. *Journal of Education and Human Development*, 5(1).
- Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorders in early adolescence. *Journal of Emotional & Behavioral Disorders*, 9(3).
- Ialongo, N., Werthamer, L., Kellam, S. G., Brown, C. H., Wang, S., & Lin, Y. (1999). Proximal impact of two first-grade preventive interventions on the early risk behaviors for later substance abuse, depression, and antisocial behavior. *American Journal of Community Psychology*, 27(5).
- Irving, C. (2024). Parent-child connectedness as a predictor of positive youth development in adolescents. *Journal of Education and Human Development*, 12(1).
- Jiang, D., Santos, R., Josephson, W., Mayer, T., Boyd, L. (2018). A comparison of variable- and

- person-oriented approaches in evaluating a universal preventive intervention. *Prevention Science*, 1-10.
- Katz, C., Bolton, S. L., Katz, L. Y., Isaak, C., Tilston-Jones, T., Sareen, J., & Swampy Cree Suicide Prevention Team. (2013). A systematic review of school-based suicide prevention programs. *Depress Anxiety*, 30(10).
- Kellam, S. G., Hendricks Brown, C., Poduska, J., Ialongo, N., Wang, W., Toyinbo, P., Petras, H., Ford, C., Windham, A., & Wilcox, H. (2008). Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes. *Drug and Alcohol Dependence*, 95(1).
- Kellam, S.G., Ling, X., Merisca, R., Brown, C.H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology*, 10(02), 165-185.
- Kellam, S. G., Rebok, G. W., Ialongo, N., & Mayer, L. S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically- based preventive trial. *Journal of Child Psychology and Psychiatry*, 35(2), 259-281.
- Kellam, S. G., Wang, W., Mackenzie, A. C., Brown, C. H., Ompad, D. C., Or, F., Ialongo, N. S., Poduska, J. M., & Windham, A. (2014). The impact of the Good Behavior Game, a universal classroom-based preventive intervention in first and second grades, on high-risk sexual behaviors and drug abuse and dependence disorders into young adulthood. *Prevention Science*, 15(1).
- Lerner, R. M., & Lerner, J. V. (2013). The positive development of youth: Comprehensive findings from the 4-H Study of Positive Youth Development. National 4-H Council; Tufts University, Institute for Applied Research in Youth Development.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1997). Maslach Burnout Inventory: Third edition. In C.P. Zalaquett & R. J. Wood (Eds.), *Evaluating stress: A book of resources* (pp. 191–218). Scarecrow Education.
- Musci, R. J., Bradshaw, C. P., Maher, B., Uhl, G. R., Kellam, S. G., & Ialongo, N. S. (2014). Reducing aggression and impulsivity through school-based prevention programs: a gene by intervention interaction. *Prevention Science*, 15(6).
- National Education Association. (2024, April 20). *Report: 9 ways to improve educator working conditions*. <https://www.nea.org/resource-library/9-ways-improve-educator-working-conditions>
- Peterson, T. (2013, February 5). *Leveraging the power of afterschool and summer learning for student success*. Collaborative Communications Group. https://www.expandinglearning.org/sites/default/files/em_conclusion.pdf
- Petras, H., Kellam, S. G., Brown, C. H., Muthen, B. O., Ialongo, N. S., & Poduska, J. M. (2008). Developmental epidemiological courses leading to antisocial personality disorder and violent and criminal behavior. Effects by young adulthood of a universal preventive intervention in first-and second-grade classrooms. *Drug and Alcohol Dependence*, 95(1).
- Petras, H., Masyn, K., & Ialongo, N. (2011). The developmental impact of two first grade preventive interventions on aggressive/disruptive behavior in childhood and adolescence: an application of latent transition growth mixture modeling. *Prevention Science*, 12(3).
- Rieley, M. (2024). Projected employment growth for community and social service occupations, 2022–32. United States Bureau of Labor Statistics <https://www.bls.gov/opub/btn/volume-13/projected-employment-growth-for-community-and-social-service.htm>
- Terzian, M., Giesen, B., & Mbwana, M. (2009). Why teens are not involved in out-of-school time programs: The youth perspective (Publication #2009-38). Brief Research to Results, Child Trends. <https://cms.childtrends.org/wp-content/uploads/2013/04/6.pdf>
- Tomasko, L., Soskis, B., Martin, H, Mitchell, F. & Abramson, A. (2023). The state and future of the national social sector infrastructure. Urban Institute. <https://www.uagc.edu/blog/human-services-vs-social-work-which-field>
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.
- University of Arizona. (2023, February). *Human Services vs. Social Work: Which field?* <https://www.uagc.edu/blog/human-services-vs-social-work-which-field>
- United States Bureau of Labor Statistics (2022). *Women in the labor force: A databook*.(BLS Report 1097). <https://www.bls.gov/opub/reports/womens-databook/2021/pdf/home.pdf>
- Wang, Y., Browne, D. C., Petras, H., Stuart, E. A., Wagner, F. A., Lambert, S. F., Kellam, S. G., & Ialongo, N. S. (2009). Depressed mood and the effect of two universal first grade preventive interventions on survival to the first tobacco cigarette smoked among urban youth. *Drug and Alcohol Dependence*, 100(3). 194-203.
- Weis, R., Osborne, K., & Dean, E. (2015) Effectiveness of a Universal, Interdependent Group Contingency Program on Children's Academic Achievement: A Countywide Evaluation, *Journal of Applied School Psychology*, 31(3). 199-218.

- Wilcox, H. C., Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., & Anthony, J. C. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence, 95*(1).
- Wilson, D., Hayes, S., Biglan, A., & Embry, D. (2014). Evolving the future: Toward a science of intentional change. *Brain and Behavioral Sciences, 37*(4).
- Yamashiro, N. (2022, January 27). Staffing takes top spot as primary challenge for afterschool program providers in new survey. Afterschool Alliance.
https://www.afterschoolalliance.org/afterschoolsnack/Staffing-takes-top-spot-as-primary-challenge-for-afterschool_01-27-2022.cfm