

PAX Tools: Behavioral Support Programming for Youth Workers

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Abstract

PAX Tools is a collection of trauma-informed strategies for adults who work with or care for young people. The strategies in PAX Tools derive from evidence-based kernels, the fundamental unit of behavioral influence. Providing a menu of independent strategies offers advantages to many stakeholders and practitioners across the youth system of care. This includes youth workers, who are traditionally underserved in training and access to evidence-based programming as compared to caregivers, educators, and human service professionals. This article examines the origins and development of PAX Tools, provides evidence of positive initial outcomes for participant and practitioner, and proposes dissemination and implementation of the intervention at a population level.

Key Words

Youth Workers, Prevention, Evidence-based Practices, PAX

A child and youth care worker, or youth worker as they are often referred to in the United States and in this paper, has played an integral role in the lives of most residents. In the U.S, 2.53 million youth workers are engaged in wage earning or volunteer support and supervision of children and youth across a broad service spectrum (ACYCP, 2022). Their work contexts and duties span a complex arc originally defined in

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the 1992 International Child and Youth Care Education Consortium's comprehensive agreement on the definition of child and youth care practice:

Professional Child and Youth Care Practice focuses on infants, children, and adolescents, including those with special needs, within the context of the family, the community, and the life span. ... practitioners promote the optimal development of children, youth, and their families in a variety of settings, such as early care and education, community-based child and youth development programs, parent education and family support, school-based programs, community mental health, group homes, residential centers, day and residential treatment, early intervention, home-based care and treatment, psychiatric centers, rehabilitation programs, pediatric health care, and juvenile justice programs. Child and youth care practice includes assessing client and program needs, designing and implementing programs and planned environments, integrating developmental, preventive, and therapeutic requirements into the life space, contributing to the development of knowledge and practice, and participating in systems interventions through direct care, supervision, administration, teaching, research, consultation, and advocacy.

(National Organization of Child Care Worker Associations, 1992, p.83)

The role of youth workers grew from the changing role of children at the turn of the century. After the Industrial Revolution, parents realized more discretionary time existed for their children where compulsory school laws were enforced and child labor laws increased the minimum work age (Schuman, 2017). Out-of-school time created care dilemmas for working parents that were solved by the provision of free, volunteer-staffed

before and after-school programming via faith-based organizations such as YMCAs and YWCAs in the 1860s and the Salvation Army in the 1890s. Non-sectarian organizations established by Boys & Girls Clubs of America in 1860, 4-H in 1902, Camp Fire Girls of America in 1910, and Neighborhood House in 1914 provided similar programming and services.

After that, the growth of for-profit and home-based before and after-school childcare became more extensively obtainable when the first child tax credit became available to American families in 1954 and subsequent legislation to date has aided in providing qualifying families with support to choose fee-based programs. Such programs include public school co-located before and after-care programs often operating on an income-dependent sliding scale.

As the original child and youth care programs evolved, they encompassed an even broader scope of camps, academic enrichment, and youth community centers as examples. This growth was accompanied by a new theoretical framework or delivery model, principles of positive youth development, which focused on preparing children and youth for the successful transition to young adulthood (Borden, *et al.*, 2020). This evolution from reactive to proactive support is what makes the possibilities of increased behavioral training for youth workers, discussed later, so conceivable. This new perspective was adopted across diverse youth-serving sectors including early childhood education, child and adolescent mental health, juvenile justice, and faith-based entities. Vance (2010) provided a guiding principle for determining skills necessary to deliver successful out-of-school time programs, which involved identifying workers' competencies in order to focus professional development and increase the likelihood of implementation of high-quality programs.

Whether free and volunteer-staffed, or fee-based (mostly part-time, hourly-wage line-staffed), child and youth care work has perpetually received scrutiny for overall perceptions of quality, public misunderstanding of role (Colvin, 2020), program atmosphere/environment (Colvin, 2021), rates of employee turnover, lack of opportunity to advance, and finally, the inadequacy of worker training/professional development to cope with behavioral issues (Davidson, 2011). These challenges dauntingly intersect with

the primary goal of youth workers preparing children and youth to ultimately transition successfully to young adulthood.

Much deliberation over the transformative potential of credentialing for child and youth workers to improve their skills to manage behavioral, emotional, and developmental needs, bringing clarity to their role and, for managers, continuity to training has not yet reached consensus by researchers, nor by professionals in the field (Borden, 2004). What is being critically analyzed are the potential equity concerns it raises for workers from communities of color and the subsequent financial barriers to licensing and credentialing programs they experience (Starr, 2016; Londono Gomez, 2022).

Many of the critical issues youth workers have been grappling with for over a century have moved to the forefront of research, policy, and legislation. Youth work is still hampered by vexing and persistent developmental, operational, and programmatic hurdles at the site level. The documented issues of low pay, frequent employee turnover, equity issues in accessing credentialing programs, episodic or minimal professional development, low morale, and public perception of low program quality are pre-conditions for a program delivery milieu that lacks the supportive and nurturing environment necessary to effectively address behavior issues.

Youth workers have the advantage of interfacing most with the children and youth they serve by providing opportunities to implement improved programming and better addressing the developmental and behavioral needs of children and youth in their care. Youth workers with more connection to the children and youth in their care develop a greater sense of efficacy in their work and likely stay with the job longer. This can motivate managers to provide less episodic professional development, and instead, more sequenced ongoing support and training. In the end, program quality can improve as the environment for child and youth participants transforms. Likewise, child and youth workers' job commitment and confidence in their role and job satisfaction can be positively impacted.

Evidence-based Kernels as a Behavioral Approach

Evidence-based kernels are defined as the fundamental unit of behavioral influence (Embry & Biglan, 2008). Kernels have been proposed as instruments of behavioral change for a range of new or rarely considered service providers such as youth workers (Fruth, Mayer, Finnigan, 2015). Evidence-based kernels, first identified by Embry (2004), are highlighted by the simplicity of their design and the assuredness of their function. These kernels are the irreducible units of behavioral change, but as the nomenclature implies, promise to create grand change on their own or operate in concert with one another for synergistic effects (Embry & Biglan, 2008, Embry, 2011).

Prevention programs with proven, measured effects most certainly consist of at least one or more evidence-based kernels. However, full prevention or behavioral programs also contain considerable inert components or even layers of aspects that are merely politically, regionally, or culturally pleasing in a topographical sense. These inert or even iatrogenic aspects of prevention programming also increase the cost and complication of implementation, while reducing fidelity and cultural competence. Kernels consist merely of the smallest unit of intervention proven to bring about behavioral change as noted in peer-reviewed, replicated, single-subject trials and are devoid of those superficial aspects that may limit implementation or reduce effectiveness (Embry, 2004). Kernels represent the operationalized mechanism for altering behavior in its purest form. Evidence-based kernels have an anecdotal analog in pharmaceuticals. The “active ingredient” in a drug is the irreducible unit for change and may also be surrounded by inert or additional ingredients meant to moderate the active ingredient’s effects or side effects.

According to Embry (2004), evidence-based kernels also satisfy the following criteria:

1. low or no cost,
2. produce immediate benefit,
3. easy to explain, imitate, and generalize,
4. meet or solve other competing demands,
5. easily marketed, and
6. change key prevention principles, such as risk and protective factors.

Beyond their single-subject evidence base, kernels' individual origins can often be traced quite clearly to our ancestors' instruments of socialization, instruction, or mentorship that were borne out of necessity. For example, the teacher in a 19th century one-room schoolhouse may have assigned individual housekeeping and maintenance tasks to each child such as sweeping the floor, bringing in firewood, or washing the blackboard. However, through contemporary randomized control trials, we know that the simple, irreducible kernel of "meaningful roles" for every child has proven to improve both academic and behavioral performance (Ellis *et al.*, 2015). This kernel can stand alone or combine with others for increased effects. It also certainly satisfies the other criteria for an evidence-based kernel.

Evidence-based kernels can also be classified into four functional varieties (Embry & Biglan, 2008, Embry, 2011). These four kernel types may be useful in selecting the appropriate kernel for individual, clinical, educational, or population-level benefit.

1. Antecedent kernels provide a discriminative stimulus for the onset of desired behavior and, thereby, decrease the occurrence of unwanted behavior in a given scenario. Example: A ringing sound prompts a driver to put on their seatbelt upon entering the car.
2. Consequence kernels alter consequences that lead to an increase in the demonstrated desired behavior or a decrease in the demonstrated unwanted behavior. Example: A traffic citation reduces the occurrence of speeding.
3. Relational frame kernels alter behavior through assigned, mutual understanding of language and other symbolic stimuli. Example: Lines on the road safely guide drivers past one another.
4. Physiological kernels alter behavior through manipulating physiological make-up. Example: A balanced diet of Omega-3 vs. Omega-6 fatty acids decrease the propensity for violence/road rage.

Access to a menu of evidence-based kernels could provide youth workers and other care providers with a research-based approach to improve the behavior, cooperation, and

outcomes of the young people in their care. Evidence-based kernels also allow users to narrowly tailor their implementation to meet the needs of the environment and children or youth in their care. This contrasts with full prevention programming implementation that may adhere to a rigidity, rendering it inappropriate for application in the varied settings in which youth workers operate. Evidence-based Kernels can replicate and even improve upon the outcomes provided by evidence-based programming that was once reserved for highly-trained clinicians or educators for use in more uniform, prescribed settings. Care providers could quickly and easily master individual kernels narrowly tailored to alleviate common, difficult scenarios with the children and youth they work with. For example:

- Creating a unified vision of mutually agreed-upon expectations (Hayes *et al.*, 2001).
- Selecting individuals for desirable or undesirable tasks (Rogers, 1997).
- Reinforcing desired behavior or performance (Murphy *et al.*, 2007).
- Gaining immediate attention and focus (Rosenkoetter, 1986).
- Improving task completion and time (Wurtele, *et al.*, 1984).
- Delivering feedback to children and peers (Kelley, 1990).

Implementing evidence-based kernels for the immediate benefit of children and youth as well as the adults who care for them serves as universal prevention by creating a nurturing environment. When adults create these nurturing environments for children in the school, home, or community, they improve positive lifetime outcome probabilities with greater correlation than other known factors such as socioeconomic status (Biglan *et al.*, 2012). Kernels allow for precise solutions to problems in any number of environments.

Systematic implementations of evidence-based kernels have proven to improve proximal outcomes such as the frequency, intensity, or duration of problematic behavior. Fruth, *et al.*, (2015) showed that equipping community leaders who work with children with evidence-based kernels improves their sense of efficacy in dealing with problematic behavior. These improvements in proximal outcomes also serve as indicators and

statistically significant predictors of improvements in internal mechanisms such as self-regulation that also lead to improvements in more distal outcomes such as standardized test scores and relationships in the home. Formalized implementations of evidence-based kernels have also shown to improve lifetime outcomes such as increases in lifetime income and college entrance rates as well as decreases in drug misuse and psychiatric disorders (Embry, 2002). Such outcomes solidify the case for organizing menus of evidence-based kernels for use by care providers for a population-level, public health benefit (Cil *et al.*, 2021, Fruth, *et al.*, 2021).

Developing PAX Tools

Impacting proximal outcomes such as impulsivity, self-regulation, problematic behavior, and pro-social behavior with the promise of corresponding longitudinal outcomes became a focus of the U.S. federal government during the opioid epidemic of the 2010s. During that period, the Substance Abuse and Mental Health Services Administration (SAMHSA) funded the promotion, prevention, treatment, and recovery of drug misuse at a public health level by providing each state with State Opioid Response appropriations. State departments selected programming and mechanisms to address the opioid crisis at each opportunity in the continuum of care.

One prominent choice for universal prevention programming for several states at that time was the PAX Good Behavior Game. The PAX Good Behavior Game is the commercially available version of the Good Behavior Game used in ongoing randomized comparative effectiveness trials at Johns Hopkins University. (Embry, 2002). The PAX Good Behavior Game incorporates evidence-based kernels along with the interdependent group contingency of the good behavior game to reduce problematic behavior and increase time on task in the classroom. The subsequent increase in self-regulation that comes from that PAX Good Behavior Game has an array of cascading effects including decreasing drug misuse in adults who have been exposed to the intervention during grade school (Kellam, *et al.*, 2014). Implementing the PAX Good Behavior Game in schools is unique in that it in addition to the outcomes it provides for children, it also offers proximal and even longitudinal benefits to the user – in this case the teacher.

These outcomes include improved efficacy and decreased workplace stress (Fruth & Huber, 2015, Ghaderi, *et al.*, 2017). Incorporating evidence-based kernels to keep students on task, gain immediate attention, or transition from one setting to the next truly offers mutual and transactional benefits for the implementer and participant (Huber, *et al.*, 2016).

In fact, many educators and community stakeholders in the state of Ohio sought to replicate the success of the PAX Good Behavior Game to settings outside the classroom by 2016. This encouraged Ohio officials at the state and local level to collaborate with PAXIS Institute to develop and test a community-based prevention program to replicate the same outcomes as programming already at work in Ohio classrooms. They sought to reproduce the mutual and transactional benefits realized by children and teachers with those outside the classroom by spreading trauma-informed universal prevention strategies across the youth system of care to include other adults who work with and care for young people. PAXIS Institute, the owner of the registered trademarks for the Good Behavior Game and PAX Good Behavior Game, proposed a menu of evidence-based kernels as first identified by Embry (2004), tested by Fruth *et al.* (2015), and piloted in sites across the state to produce a program for those working with children in settings outside of school such as churches, day camps, and in the home. These 2016 pilots took place in various community-based settings in select communities throughout Ohio. The pilots gave rise to programmatic revision and the development of a replicable dissemination model.

Thus in 2017, PAXIS Institute worked with the state of Ohio to pilot PAX Tools, a scalable program made up of the menu of tested and piloted evidence-based kernels to serve as trauma-informed, evidence-based behavioral strategies for adults who work with or care for children and youth. In developing PAX Tools, researchers sought to identify and alleviate common challenges encountered by adults in their work, care, or cooperation with young people. These challenges included getting on the same page, providing appropriate responses to misbehavior, staying focused, taking turns, reinforcing desired behavior, improving cooperation, and other challenging circumstances that arise in working with children and youth. Kernels were selected and refined to address each of

these scenarios and packaged into a training presentation and workbook. Unlike many preventive interventions, PAX Tools was not designed as a curriculum to be administered with young people. Rather, PAX Tools consists of a menu of independent strategies (kernels) with their own recipes that adults can add to their daily routines in order to improve behavior and cooperation and mitigate challenging circumstances with young people. PAX Tools is also not a scripted, linear prevention program. As with the initial trials involving kernels, PAX Tools strategies can be used independently or combined for synergistic effects.

To provide this programming quickly across the state of Ohio, PAXIS Institute drew upon lessons learned from the pilot implementations to utilize a replicable distribution model allowing for dissemination on a population-level, public health scale. Under the model, community educators, health educators, parent educators, and other professionals who work in the community to guide parents, caregivers, and other adults who work with or care for young people could receive training as a “PAX Tools Community Educator” through an 8-hour PAX Tools training. This allows the educator and their agency to disseminate 2-hour PAX Tools Workshops to adults in their community. PAX Tools Community Educators gain access to the PAX Tools App as well as the PAX Tools website for workshop resources. This model takes advantage of a network of professionals and public servants with natural audiences of adults seeking support. PAX Tools positions as an additional program and support that they can offer the community with very low cost to the agency and no cost to the adult caregivers and provides them with trauma-informed, evidence-based solutions for caring for young people.

In the years to come, PAXIS Institute developed an additional PAX Tools training, PAX Tools for Human Services. This training targets Human Service professionals such as those in behavioral health, juvenile justice, social work, child welfare, as well as therapists, counselors, and others whose work centers on young people’s wellbeing outside of school. Developed during the COVID-19 Pandemic, participants seeking to add PAX Tools as trauma-informed evidence-based programming to their professional practice participate in an 8-hour live virtual training through PAXIS Institute. Professionals trained in PAX Tools for Human Services gain access to the PAX Tools App, resources for working

with children and youth on the PAX Tools website, as well as troubleshooting and implementation support through monthly “Tools Talks” in the form of live virtual consultation sessions.

The newest PAX Tools iteration, PAX Tools for Youth Workers, is currently in a pilot format as of the publication of this manuscript. PAX Tools for Youth Workers addresses one of the most underserved groups within the children’s system of care – youth workers. As mentioned earlier, this group has had access to very little formalized training and even less access to evidence-based programming with measurable outcomes like PAX Tools. PAX Tools for Youth Workers specifically targets an entry-level demographic of care providers who may or may not have formal training or education in child development or related fields. This training is also responsive to the needs of the field by allowing participants to take training in a 4-hour self-paced, online format. This allows participants to train at their own pace and gain the trauma-informed, evidence-based programming even without designated professional development days for training as may be available to teachers, community educators, and many human service professionals.

Preliminary Outcomes of PAX Tools Implementations

As of late 2022, over 4800 participants had been trained in one of the various PAX Tools programs across the U.S. Teamed with the PAX Good Behavior Game in schools, this ensures that school-based educators, public health/community educators, therapists, clinicians, other human service professionals, and finally youth workers can implement prevention programming with uniform language and aim. This approach also allows young people to receive trauma-informed, evidence-based prevention across the system of care. Several state and local governments have piloted population-level implementations of PAX Tools across these settings in order to generate public health benefits.

Texas Health and Human Services (HHSC) sponsored a multi-year population-level prevention initiative involving the PAX Good Behavior Game in schools and PAX Tools in the community as a part of the State Opioid Response initiative in 2021. This initiative provided PAX Tools for Human Services training throughout the state at no cost to human



service professionals for use in their professional practice. The initiative also provided PAX Tools for Community Educators training at no cost. Participants in these trainings rated a number of constructs such as strategy comprehension and their intention to implement using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Texas human services professionals had generally favorable impressions of the PAX Tools trainings with strategy comprehension, utility of the strategies, and appropriateness of the strategies rating highest. Texas community educators had generally favorable impressions of the PAX Tools trainings with the utility of the strategies, appropriateness of the strategies, and the effectiveness of the platform rating the highest. The following tables identify how many Texas PAX Tools for Human Services and PAX Tools for Community Educators training participants as well as percent of the whole rated low, medium, or high on the constructs listed after training.

Table 1
Texas PAX Tools for Human Services Training Outcomes

Construct	Low	%	Med	%	High	%
Strategy comprehension	1	0.23	74	16.78	366	82.99
Concept/strategy appropriateness	5	1.20	96	23.08	315	75.72
Utility	3	0.76	93	23.43	301	75.82
Intention to implement	6	1.51	221	55.67	170	42.82
Trainer effectiveness	1	0.76	60	45.45	71	53.79
Platform effectiveness	2	0.45	100	22.57	341	76.98

Note: Respondents=443; Total Trained=1144

Table 2
Texas PAX Tools for Community Educators Training Outcomes

Construct	Low	%	Med	%	High	%
Strategy comprehension	1	0.80	18	14.40	106	84.80
Concept/strategy appropriateness	0	0	13	10.74	108	89.26
Utility	1	0.80	7	5.60	117	93.60
Intention to implement	2	1.60	57	47.73	66	52.80
Trainer effectiveness	2	1.60	34	27.20	89	71.20
Platform effectiveness	1	0.80	14	11.2	110	88.00

Note: Respondents=125; Total Trained=415

The state of Arizona sponsored a multi-departmental, multi-year population-level prevention initiative involving the Arizona Health Care Cost Containment System (AHCCCS), the Governor’s Office of Youth, Faith and Family (GOYFF) and the Arizona Department of Education (ADE) beginning in 2019. The state utilized both State Opioid Response funding as well as the Substance Abuse and Treatment Block Grant to provide PAX Good Behavior Game training in schools and PAX Tools training to human service professionals and community educators. Participants in these PAX Tools trainings rated a number of constructs such as strategy comprehension and their intention to implement using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Arizona human service professionals and community educators both had generally favorable impressions of the PAX Tools trainings with the utility of the strategies, appropriateness of the strategies, and the effectiveness of the platform rating the highest. The following tables identify how many Arizona PAX Tools for Human Services and PAX Tools for Community Educators training participants as well as the percent of the whole rated low, medium, or high on the constructs listed after training.

Table 3
Arizona PAX Tools for Human Services Training Outcomes

Construct	Low	%	Med	%	High	%
Strategy comprehension	2	1.09	72	39.56	108	59.34
Concept/strategy appropriateness	4	3.25	27	21.95	92	74.80
Utility	5	4.07	25	20.33	93	76.61
Intention to implement	5	2.75	94	51.65	83	45.60
Trainer effectiveness	2	1.19	66	39.29	100	60.24
Platform effectiveness	2	1.63	25	20.33	96	78.05

Note: Respondents=182; Total Trained=811

Table 4
Arizona PAX Tools for Community Educators Training Outcomes

Construct	Low	%	Med	%	High	%
Strategy comprehension	0	0	31	24.22	98	76.56
Concept/strategy appropriateness	0	0	21	16.51	107	83.59
Utility	1	0.92	13	11.93	95	87.16
Intention to implement	1	0.78	86	67.19	41	32.03
Trainer effectiveness	0	0	40	31.25	88	68.75
Platform effectiveness	0	0	20	18.35	89	81.65

Note: Respondents=128; Total Trained=417

Consistent with the pilot model in Ohio in 2017, PAX Tools Community Educators trained within the Arizona and Texas initiatives went on to provide PAX Tools Workshops for parents, caregivers, and other interested members of their communities at no cost. These 2-hour workshops featured training for the caregivers to utilize PAX Tools strategies to improve relationships, cooperation, and experiences with their children. Many of these caregivers provided feedback on their impressions of the PAX Tools Workshop and implementing PAX Tools using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Caregivers had generally favorable impressions of the PAX



Tools Workshop with the helpfulness of the training rating highest. The following table identifies how many caregivers as well as the percent of the whole rated low, medium, or high on the constructs listed after attending a PAX Tools Workshop performed by a PAX Tools Community Educator.

Table 5
PTCE Workshop Outcomes from Caregivers

Construct	Low	%	Med	%	High	%
Helpfulness of training	20	4.84	88	21.30	265	64.16
Training content supported need for PAX Tools strategies	33	7.99	127	30.75	213	51.57
Concept/strategy appropriateness	19	4.6	96	23.24	258	62.46

Note: Respondents=373

Caregivers also provided qualitative feedback from open-ended items on their post-workshop surveys.

PAX Tools in Boys & Girls Clubs

Among the stakeholders who have adopted and integrated PAX Tools into their settings, Boys & Girls Clubs have found PAX Tools to be a particularly appropriate fit for their professionals and the children and youth they serve. PAX Tools have likely resonated with Boys & Girls Clubs because of the consistency in the aims and objectives of the program with that of Boys & Girls Clubs. Boys & Girls Clubs seek to provide all children and youth, including those who need the greatest support, with a nurturing environment to succeed to the best of their abilities. They do this by providing targeted programming to improve youth outcomes such as improved academic performance and graduation rates, reduced school and community violence, reduced suicide, improved social-emotional skills, and improved mental health. Boys & Girls Clubs utilize trauma-informed, evidence-based strategies to create these long-term outcomes. While a number of curricula and

programs meet these needs, PAX Tools became a natural fit due to the flexible approach that allowed for the integration of the intervention into all their targeted programmatic elements.

Flexibility in application also ensured cultural competence and allowed Clubs to meet the unique needs of their professionals and young people by providing strategies and solutions that they experienced most. This provided for a unified approach with corresponding strategies and language for all staff members. That is, PAX Tools offered a variation and training for everyone from Club leadership and directors all the way through to seasonal and part-time youth development professionals. This represents a vast range in professional and educational experience, and PAX Tools allowed all of these professionals to adopt a uniform approach to behavior regardless of their role. This uniform approach was vital in that Boys & Girls Clubs, like other youth-serving programs, experience a great deal of difficulty retaining their front line, entry-level professionals who ultimately interface with the children the most. PAX Tools served as a trauma-informed, evidence-based approach that was consistent with Boys & Girls Clubs' aims and objectives, met an array of needs, and also represented a low-cost investment for the development of the section of their staffs with the highest turnover and even offering promise for decreasing that annual turnover.

Boys & Girls Clubs have utilized all PAX Tools training options for their various staff members. This includes PAX Tools for Human Services training for directors and managers as well as youth development professionals and part-time staff. Many clubs elected to have a PAX Tools Community Educator trained to interface with the families of the children they serve. Clubs now also utilize a pilot version of PAX Tools for Youth Workers which targets the youth worker demographic with a more flexible training format. Table 6 shows the number of Boys & Girls Club participants trained in PAX Tools programming in select states and nationwide in 2021-2022.

Table 6
Boys & Girls Club Employees Trained in PAX Tools 2021-2022

Program	Arizona	Colorado	Ohio	Washington	Total BGC Trained Nationwide
PAX Tools for Human Services	24	35	467	84	614
PAX Tools Community Educator	21	-	13	-	45
PAX Tools for Youth Workers	104	-	-	5	109

The state of Ohio Mental Health and Addiction Services (OMHAS) again sponsored a scaled initiative of PAX Tools by providing access to PAX Tools training to all Ohio Boys & Girls Clubs beginning in 2021. These out-of-school sites opted in to have their directors, managers, and youth development professionals trained in PAX Tools for Human Services as uniform trauma-informed, evidence-based behavioral support programming across clubs. Ohio clubs also sought to reduce the turnover of their youth development professionals from year to year. Participants in these trainings rated a number of constructs such as strategy comprehension and their intention to implement using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Ohio Boys & Girls Clubs employees had generally favorable impressions of the PAX Tools trainings with confidence to implement, utility of the strategies, and appropriateness of the strategies rating highest. The following table identifies how many Ohio Boys & Girls Club participants in PAX Tools for Human Services training as well as the percent of the whole rated low, medium, or high on the constructs listed after training.

Table 7*Ohio Boys & Girls Clubs PAX Tools for Human Services Training Outcomes*

Construct	Low	%	Med	%	High	%
Strategy comprehension	2	1.38	59	40.69	84	57.93
Concept/strategy appropriateness	2	1.38	36	24.83	107	73.79
Utility	1	0.69	28	19.31	116	80.00
Intention to implement	3	2.07	39	29.60	103	71.03
Confidence to implement (Unique Ohio Construct) (n=65)	1	1.54	8	12.31	56	86.15
Trainer effectiveness	2	1.38	53	36.55	90	62.07
Platform effectiveness	4	2.76	33	22.76	107	73.79

Note: Respondents=145; Total Trained=467

These Ohio Boys & Girls Club implemented PAX Tools with the youth in their respective clubs and reported their outcomes after eight weeks of implementation. Implementers rated several constructs such as implementation level and decreases in peer conflict using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Ohio Boys & Girls Clubs employees had generally favorable impressions of implementing PAX Tools with program efficacy and increase in adult confidence rating highest. The following table identifies how many Ohio Boys & Girls Club participants trained in PAX Tools for Human Services as well as the percent of the whole rated low, medium, or high on the constructs listed after implementing PAX Tools for eight weeks.

Table 8*Ohio Boys and Girls Clubs PAX Tools for Human Services Implementation Outcomes*

Construct	Low	%	Med	%	High	%
Implementation level	26	42.62	29	47.54	6	9.84
Program efficacy	2	3.28	24	39.34	35	57.38
Decrease in redirections	35	57.38	22	36.07	4	6.56
Decrease in peer/peer conflict	15	24.59	40	65.57	6	9.84
Decrease in child/adult conflict	16	26.23	34	55.74	11	18.03
Increase in adult confidence	13	21.31	29	47.54	19	31.15

Note: Respondents=61, Total Trained = 467

The state of Washington Boys & Girls Clubs began a population-level implementation of PAX Tools in 2022. This initiative provided for PAX Tools for Human Services training for all managers and directors as well as a pilot of PAX Tools for Youth Workers training that sampled select sites for testing. This pilot, which preceded the statewide implementation, was the first such implementation of the self-paced online training to specifically target youth workers. PAX Tools was selected as trauma-informed, evidence-based programming to improve employee efficacy and retention as well as augment their robust suicide prevention programming. Participants in these trainings rated a number of constructs such as strategy comprehension and their intention to implement using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. The initial Washington Boys & Girls Clubs employees had generally favorable impressions of the pilot version of PAX Tools for Youth Workers training with strategy comprehension and training effectiveness rating highest. The following table identifies how many Washington Boys & Girls Club participants in PAX Tools for Youth Workers training as well as the percent of the whole rated low, medium, or high on the constructs listed after training.

Table 9*Washington PAX Tools for Youth Workers Pilot Training Outcomes*

Construct	Low	%	Med	%	High	%
Strategy comprehension	0	0	0	0	25	100
Transferability	0	0	11	44.00	14	56.00
Utility	0	0	11	44.00	15	56.00
Confidence to implement	0	0	12	48.00	13	52.00
Training effectiveness	0	0	3	12.00	22	88.00

Note: Respondents= 25; Total Trained= 32

The Washington Boys & Girls Club participants in the PAX Tools for Youth Workers pilot training implemented with the youth in their respective clubs and reported their outcomes after eight weeks of implementation. Implementers in the pilot study rated a number of constructs such as implementation level and decrease in peer conflict using a Likert-type scale. Those responses were condensed into low, medium, and high ratings. Washington Boys & Girls Clubs employees had generally favorable impressions of implementing PAX Tools for Youth Workers Training. The following table identifies how many Washington Boys & Girls Club participants trained in PAX Tools for Youth Workers as well as the percent of the whole rated low, medium, or high on the constructs listed after implementing PAX Tools for eight weeks.

Table 10*Washington PAX Tools for Youth Workers Implementation Pilot Outcomes*

Construct	Low	%	Med	%	High	%
Implementation level	2	7.14	19	67.86	7	25.00
Program efficacy	1	3.57	20	71.43	7	25.00
Decrease in redirections	3	10.71	25	89.29	0	0
Decrease in peer/peer conflict	0	0	27	96.43	1	3.00
Decrease in child/adult conflict	0	0	26	92.86	2	7.14
Increase in adult confidence	0	0	23	82.14	5	17.86

Note: Respondents= 28, Total Trained = 32

As part of the Washington Boys & Girls Club pilot initiative for PAX Tools for Youth Workers, the potential effects of PAX Tools on young people were tested using an adapted form of the Strengths and Difficulties Questionnaire (SDQ). The SDQ is a behavioral screening instrument often employed by researchers, clinicians, educators, and medical professionals for use in clinical assessment, evaluating outcomes of interventions, epidemiology, research, and screening. The questionnaire consists of items in subscales including emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. These subscales consist of items such as “often unhappy, depressed or tearful” and asks adult participants to rate how well these statements describe a specific child on a 3-point Likert scale from “Not true” to “Certainly true.” When used in a pre/post design, as in this study, the SDQ can be used to evaluate the effect of interventions. The SDQ can also be used to predict the presence of psychiatric disorders (Goodman, *et al.*, 2000).

In this study, Washington Boys & Girls Club PAX Tools participants selected an anonymous young person in their care to rate using an abridged form of the SDQ immediately following the completion of the PAX Tools for Youth Workers self-paced online training. Then, after implementing PAX Tools as part of their normal tasks in caring for young people in the club, the participants again rated the same young person six weeks later. An independent *t*-test demonstrated movement in the desired direction indicating improvement approaching significance on four of the five items tested as well as the total overall score. The test revealed significance for the item of “Often unhappy, depressed or tearful.” The results of the SDQ can be found in Table 11.

Table 11
SDQ items and pre/post mean scores

Construct	Pre (28)	Post (32)
Often unhappy, depressed or tearful	0.84	0.50**
Often fights with other children or bullies them	0.75	0.53
Constantly fidgeting or squirming	1.09	1.00
Picked on or bullied by other children	0.69	.054
Considerate of other people's feelings*	0.71	0.59
Total	4.08	3.16

*Reverse-scored item listed in reverse for clarity and consistency

**p<0.05

These population-level PAX Tools implementations for human service workers, community educators, and youth workers generated similar and comparable post-training outcomes in each instance. Strategy comprehension, appropriateness, and utility rated highly in each implementation. Intention to implement typically rated lowest of the constructs with only a “medium” intention to implement all strategies. In Boys & Girls Clubs implementations, program efficacy and increases in confidence rated highly after implementing for eight weeks.

Future Implications

As of this publication, both Washington and Ohio Boys & Girls Clubs have partnered with PAXIS Institute for ongoing research beyond this pilot implementation to track reported youth worker outcomes associated with the National Youth Outcomes Initiative, social emotional development, children's risk probability for mental, emotional behavioral disorders, and employee burnout upon the beginning of the upcoming statewide initiatives. These findings will help determine the impact on the proximal and distal outcomes for children exposed to adults who use PAX Tools. These studies will also examine the mutual and transactional benefits for the youth workers implementing PAX Tools including improvement in a number of areas that lead to employee retention.



Ultimately, these studies will help determine the viability of PAX Tools as a universal preventive intervention when implemented as part of a population-level, public health initiative.

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