A.1 Educational Philosophy

Description of Arizona Autism Charter Schools' Philosophical Approach

The primary mission of the Arizona Autism Charter School (AZACS) is to educate students with autism and related disorders by using best practices and the principles of Applied Behavior Analysis delivered by highly trained teachers and staff. AZACS's goal is to make this high-quality, special education tuition-free and accessible to all students with Autism Spectrum Disorders across Arizona. Initially, we plan to open our flagship campus in the Phoenix Metro area, within the Phoenix Union High School District.

Autism (sometimes called "classical autism") is the most common condition in a group of developmental disorders known as the autism spectrum disorders (ASDs). Autism is a developmental disability that is usually apparent to doctors that are versed in autism within a child's first three years. It is characterized by impaired social interaction, problems with verbal and nonverbal communication, and unusual, repetitive, or severely limited activities and interests. Other ASDs include Asperger syndrome, Rett syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified (usually referred to as PDD-NOS). Autism occurs in all racial, ethnic, and socioeconomic groups and is five times more likely to occur in boys than girls. The Center for Disease Control and Prevention's (CDC) Autism and Development Disabilities Monitoring (ADDM) Network released data in March of this year revealing that the prevalence of Autism Spectrum Disorder in Arizona is **1 in 64 children**, a rate that is significantly higher than the national average which is 1 in 88. This population of children must be addressed. The need is urgent for excellent schools focused on educating children with autism using evidence-based strategies.

The core philosophy of Arizona Autism Charter Schools is our commitment to helping children with ASD rejoin the world and function within it to the best of their abilities. AZACS believes that with the proper intervention, individuals with ASD are very capable and, with the proper training, they can contribute to society in a meaningful way. It is our intention to facilitate this for our students. We will offer an integrated educational approach for our children, offering them the best chance at reaching their fullest potential, both academically and vocationally. Our science-based methodologies will include, but are not limited to: Applied Behavior Analysis (ABA), Verbal Behavior, Augmentative Alternative Communication (AAC) training, structured social skills training, and Natural Environment Teaching (NET), as well as speech, and occupational therapy. All of these strategies fall under the umbrella of Applied Behavior Analysis (ABA), which has been proven by empirical studies to be the most effective methodology for children with autism. We will work in collaboration with our professionals and parents in an effort to provide an integrated, science-based approach towards assisting each student in reaching their full potential.

The assessment indicators that will be utilized to provide students with the opportunity to achieve the highest standards of achievement include, but are not limited to: the Assessment for Basic Language and Learning Skills – Revised (ABLLS-R), the Verbal Behavior - Milestones Assessment and Placement Program (VB-MAPP) the AIMS and AIMS-A.

AZACS's staff will be well versed in our mission and well trained in their respective fields. Continuing education for all staff will be provided, promoted, and reflected in the school calendar. This will ensure that all individuals are up-to-date on the latest techniques and methodologies for their position.

ABLLS and/or VB-MAPP skill tracking sheets will be created and maintained for all students, which will track date of introduction of new program and date of mastery of skill, and maintenance of skill thereafter, i.e., weekly, monthly. Results will be graphed on an ABLLS graph to monitor progress. Staff will meet on a weekly basis to discuss progress and appropriate modifications to individual curriculum.

AZACS will provide educational programs for students with ASD, which will raise the standard of educational excellence for students with ASD in our community. The charter school will serve as a role model for other public schools in regards to the education and treatment of ASD. As the latest CDC statistics indicate, ASD is currently affecting one **1 in 64** children in our state. This is creating an unprecedented stress on the public school system. Serving this population will remove the strain from the traditional public school system, and offer an alternative school choice to special needs students and their families.

AZACS will welcome input and support not only from parents, but from professionals that treat students outside of the school setting as well, including but not limited to Physical Therapists, Speech Therapists, Occupational Therapists and Behavior Therapists.

Because AZACS will use science-based methods, accountability will be provided through data collection, data management and data analysis. Data will be collected on a daily basis and analyzed by personnel who will make decisions for all individual educational programs based on results. Our data driven approach will provide academic success as well as financial efficiency, and will encompass all aspects of the organization in the following manner: faculty training for all assessment and curriculum tools utilized, development of an implementation timeline, data analysis and dissemination, and scheduled communication with personnel regarding student progress and achievements.

AZACS will provide students with progress reports, interim progress reports and report cards in compliance with Arizona State guidelines as follows:

• Report Cards every 9 weeks (4 times per year)

• Interim Progress Reports (4 times per year)

• IEP goals will be reviewed at the time of Interim Progress Reports and Report Cards (8 times per year).

In addition, AZACS will provide an ABLLS graph detailing student progress in the ABA portion of their IEP at the time of enrollment and at the end of the school year.

Principles and Concepts Fundamental to the AZACS Program of Instruction

Arizona Autism Charter Schools will improve student learning and academic achievement through the following:

• **Assessmen**t: Each student will be assessed at enrollment, and this assessment will determine what goals are included in the student's IEP or PEP (Personalized Education Plan for students not on an IEP). In addition, this assessment will provide insight about the child's individual needs.

• **Methods**: We will implement mastery-based learning grounded in ABA through the use of ABLLS, VB-MAPP, Discrete Trial Teaching, Direct Instruction, Video Modeling, Peer Modeling, Natural Environment Learning, Incidental Teaching, Social Learning, and computer-based instruction. The variety of methods will cater to the individual needs of our students.

• **Data collection**: Data will be collected on a daily basis and analyzed weekly by personnel who will make decisions for all individual educational programs based on results. Our data driven approach will provide academic success. Each student will have an individualized binder detailing their educational program and it will state specifically what his or her program is comprised of, as well as their special needs.

• **Reinforcement**: Individualized systematic positive behavior support plans, which include reward systems, will be implemented to reinforce student academic and social achievements.

Because AZACS anticipates serving a predominantly special needs population (students with ASD), we will provide learning opportunities for students of all levels of functioning with an emphasis on academics, communication, language and literacy. This will be accomplished through the application of best practices, including a curriculum based on standard and modified Arizona State guidelines as well as the educational curriculum programs best suited to the individual student's needs. Numerous instruction methods, all falling under the umbrella of Applied Behavior Analysis, will be employed at AZACS in order to implement our curriculum.

Measurement of learning outcomes at AZACS will be achieved through daily data collection, biweekly and monthly data analysis, and pre and post tests to measure yearly achievement. Goals will be implemented as detailed in the IEP. All academic goals will be aligned with state Common Core Standards. Constant supervision and reassessment will be maintained throughout the year in order to ensure progress is maintained. Mastery goals will be reassessed on a rotating basis to ensure they are maintained and generalized across environments.

The existence of Arizona Autism Charter Schools will open up new employment opportunities for professionals dedicated to the autism population. Our organization will also serve as a model of excellence for the intervention and education of individuals with ASD, and promote the latest methodologies and techniques being utilized.

AZACS aims to empower students to reach their full potential in motivating, compassionate school environments so that children with ASD gain the skills to integrate into the community and become fulfilled, productive citizens. Students on the lower functioning end of the spectrum will be targeted, who may have deficits in communication and self-help skills, as well as behavioral challenges, and who are not easily supported in the public school environment. The school will enroll students in Kindergarten through 5th grade and will be housed in an academically-friendly, secure and stimulating

learning environment. The curriculum of the school will be compliant with Arizona State standards for Special Education students on a modified curriculum, and the Common Core Standards for students working at grade level. Instruction will be delivered in conjunction with the most current best practices from the field of ASD research and will be applied in a comprehensive, yet individualized manner, as this is a unique population which requires specialized instruction and educators. In addition, as a public charter school, AZACS will be equipped to educate any student who wishes to enroll, including typically developing students and special needs students working at grade level. For these students, Arizona Common Core Standards will be applied with equal rigor as other high caliber schools serving general education students. Depending on enrollment, AZACS plans to offer at least two general education classrooms for students working at grade level. These classrooms will operate as similarly as possible as typical classrooms in public schools and will be used for students that are getting ready to transition back to a typical public school setting. Students who are not currently on an Individualized Education Plan (IEP) will nevertheless have customized education plans in the form of Personalized Education Plans or PEPs. Our programs of instruction will be tailored to the individual's abilities and needs, data driven and results oriented for all students. By using differentiated instruction and ability grouping, students with varying capabilities will be engaged and challenged so they are learning and growing to the best of their abilities.

Rationale for a Charter School Focused on Students with Autism Based on an Applied Behavior Analysis (ABA) Model

The intervention and education that AZACS will offer is unique to Arizona and not otherwise available in a public school setting. Currently, public schools have difficulty focusing on the unique needs of students with autism because only a small subset of the student body in each school district is affected by this condition. Often, students with autism are placed in special education classrooms with students with varying disabilities, making it difficult for teachers to focus on best practices for autism. Although some school districts offer dedicated self-contained programs for students with autism, none are based on Applied Behavior Analysis (ABA), the most successful and well documented teaching strategy for educating students with ASD. In addition, there are no autism programs in public schools in our target area supervised by a Board Certified Behavior Analyst (BCBA), the most qualified professionals in the area of ABA. In addition, most districts can only offer very limited training and supports for teachers and paraprofessionals working with autistic children because of limited budgets and the small percentage of students with autism they are servicing.

AZACS will offer a unique model by taking advantage of the economies of scale that will come into play when allowing students with autism to attend a school focused on their needs. By having students with ASD together on one campus, teacher and staff training in best practices for autism will be optimal. Teachers will be able to focus on the best strategies for this population and work as a collaborate team to meet the needs of this specific population. A Master's level BCBA will always be on staff to develop individualized instructional programs for students and to ensure teachers and paraprofessionals are implementing programs correctly. Furthermore, AZACS will also contract with a Ph.D level BCBA to ensure the highest level of fidelity to ABA education strategies. The school leadership will share one common goal—educating children with autism by using evidence based approaches that are results

driven. For students with autism, this means offering a program based on Applied Behavior Analysis (ABA).

What is Applied Behavior Analysis?

Behavior Analysis is the science of behavior. Applied behavior analysis (ABA) is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree (Baer, Wolf & Risley, 1968/1987; Sulzer-Azaroff & Mayer, 1991). Specifically, ABA refers to a systematic approach to the assessment and evaluation of behavior, and the application of interventions that alter behavior. ABA is an objective discipline focused on the reliable measurement and objective evaluation of observable behavior. Programs based upon ABA methodologies are grounded in the well-established principles of learning and operant conditioning, as influenced by the works of researchers such as Edward L. Thorndike and B.F. Skinner. The use of single case experimental design to evaluate the effectiveness of individualized interventions is an essential component of ABA programs.

Students with autism who have difficulties accessing curriculum via traditional methodologies offered in public schools can often thrive with ABA methodologies. These techniques break down tasks into understandable pieces that can be mastered one step at a time. By rewarding the completion of each step, students understand what is being asked of them and become engaged in learning. These techniques can be used to teach students everything from vocabulary words and math facts to complicated grammar rules and algebraic concepts. ABA is also instrumental in extinguishing undesirable behaviors that interfere with learning.

In short, ABA is the use of behavior analytic (learning) methods and research to change socially important behavior in meaningful ways. These "socially important behaviors" may include communication and language, academic skills such as reading and math, and social skills. The field of ABA is broad, addressing socially important behaviors across a wide range of people and settings. While most recognizable in the treatment of children with developmental disabilities such as autism, the science of ABA is regularly used to improve performance in a variety of fields such as education, organization and business management, and sports.

Research Supporting Applied Behavior Analysis for Students with Autism

Current research proves ABA to be a best practice in the intervention and education of autism. By incorporating the principles of ABA into Arizona State Standards, our students will benefit from individualized programming they would not experience otherwise. ABA-based techniques are often used to treat autism and are currently considered the only “evidence-based” treatments for autism spectrum disorders.

One of the most influential and widely cited review of the literature regarding efficacy of treatments for Autism is the National Research Council's book Educating Children with Autism (2001) which clearly concluded that ABA was the best research supported and most effective treatment for the main characteristics of Autism. Recent reviews of the efficacy of ABA-based techniques in autism include:

- A 2007 clinical report of the American Academy of Pediatrics concluded that the benefit of ABA-based interventions in autism spectrum disorders (ASDs) "has been well documented" and that "children who receive early intensive behavioral treatment have been shown to make substantial, sustained gains in IQ, language, academic performance, and adaptive behavior as well as some measures of social behavior." (Myers & Johnson, 2007)

- Researchers from the MIND Institute published an evidence-based review of comprehensive treatment approaches in 2008. On the basis of "the strength of the findings from the four best-designed, controlled studies," they were of the opinion that one ABA-based approach (the Lovaas technique created by Ole Ivar Lovaas) is "well-established" for improving intellectual performance of young children with ASD. (Rogers, S.J.; Vismara, L.A. (2008)

- A 2009 review of psycho-educational interventions for children with autism whose mean age was six years or less at intake found that five high-quality ("Level 1" or "Level 2") studies assessed ABA-based treatments. On the basis of these and other studies, the author concluded that ABA is "well-established" and is "demonstrated effective in enhancing global functioning in children with autism when treatment is intensive and carried out by trained therapists." Eikeseth, S. (2009)

- A 2009 paper included a descriptive analysis, an effect size analysis, and a meta-analysis of 13 reports published from 1987–2007 of early intensive behavioral intervention (EIBI, a form of ABA-based treatment with origins in the Lovaas technique) for autism. It determined that EIBI's effect sizes were "generally positive" for IQ, adaptive behavior, expressive language, and receptive language.

- A 2009 meta-analysis of nine studies published from 1987–2007 concluded that EIBI has a "large" effect on full-scale intelligence and a "moderate" effect on adaptive behavior in autistic children. Eldevik, S.; Hastings, R.P.; Hughes, J.C.; Jahr, E.; Eikeseth, S.; Cross, S. (2009)

- In 2011, investigators from Vanderbilt University under contract with the Agency for Healthcare Research and Quality performed a comprehensive review of the scientific literature on ABA-based and other therapies for autism spectrum disorders; the ABA-based therapies included the UCLA/Lovaas method and the Early Start Denver Model. They concluded that "both approaches were associated with... improvements in cognitive performance, language skills, and adaptive behavior skills." Warren, Z., et al. (2011)

Intensive intervention will be provided in keeping with Arizona State Standards/Common Core Standards, as well as B.F. Skinner's Theory of Applied Behavioral Analysis (ABA). AZACS will utilize the methodologies and best practices of ABA in the implementation of the curriculum. The classrooms will be both small in number, and small in terms of their operating student-to-teacher ratio. Instruction, using highly structured curriculum, will be delivered by an academic team that is qualified, highly trained and, in the case of teachers, certified in Special Education and/or General Education. All will be trained by a Board Certified Behavior Analyst (BCBA) in the implementation of ABA programs.

A 2008 report by the National Association of State Directors of Special Education indicates that there are at least 20 other charter schools with a focus on children with autism in 13 other states. The AZACS

team has researched some of these schools including South Florida Autism Charter School, New York Center for Autism Charter School, Foundation School for Autism in Texas, Autism Academy of Learning in Ohio, Spectrum Charter School in Pennsylvania and Lionsgate Academy in Minnesota. AZACS has learned that all of these schools must conduct a lottery for available spots because of the high demand for their specialty in autism education. It is time to offer the same level of school choice for students with autism in Arizona, and the Arizona Autism Charter Schools team has the expertise and unwavering desire to empower parents and students with this option in our state.

REFERENCES

Shreck, K.A.; Metz, B.; Mulick, J.A.; Smith, A. (2000). "Making it fit: A Provocative Look at Models of Early Intensive Behavioral Intervention for Children with Autism". The Behavior Analyst Today 1 (3): 27–32.

Mary Jane Weiss & Delmolino Lara (2006). "The Relationship Between Early Learning Rates and Treatment Outcome For Children With Autism Receiving Intensive Home-Based Applied Behavior Analysis". The Behavior Analyst Today 7 (1): 96–105.

Myers, S.M.; Johnson, C.P.; Council on Children with Disabilities (2007). "Management of children with autism spectrum disorders". Pediatrics 120 (5): 1162–82.

Rogers, S.J.; Vismara, L.A. (2008). "Evidence-based comprehensive treatments for early autism". J Clin Child Adolesc Psychol 37 (1): 8–38.

Eikeseth, S. (2009). "Outcome of comprehensive psycho-educational interventions for young children with autism". Res Dev Disabil 30 (1): 158–78.

Reichow, B.; Wolery, M. (2009). "Comprehensive synthesis of early intensive behavioral interventions for young children with autism based on the UCLA Young Autism Project model". J Autism Dev Disord 39 (1): 23–41.

Howlin, P.; Magiati, I.; Charman, T. (2009). MacLean, Jr., William E.. ed. "Systematic review of early intensive behavioral interventions for children with autism". Am J Intellect Dev Disabil 114 (1): 23–41.

Eldevik, S.; Hastings, R.P.; Hughes, J.C.; Jahr, E.; Eikeseth, S.; Cross, S. (2009). "Meta-analysis of Early Intensive Behavioral Intervention for children with autism". J Clin Child Adolesc Psychol 38 (3): 439–50.

Warren, Z.; Veenstra-VanderWeele, J.; Stone, W.; Bruzek, J.L.; Nahmias, A.S.; Foss-Feig, J.H.; Jerome, R.N.; Krishnaswami, S.; Sathe, N.A.; Glasser, A.M.; Surawicz, T.; McPheeters, M.L. (2011). Therapies for children with autism spectrum disorders. AHRQ Publication No. 11-EHC029-EF, Comparative Effectiveness Review No. 26. Rockville, MD: Agency for Healthcare Research and Quality.