Smaller classes.
Brighter futures.

The Benefits of Reducing Class Size in Arizona

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About Arizona Children First

Arizona Children First is a coalition of parents, educators and community members working together to improve the educational outcomes of Arizona's children. Arizona Children First is currently working to increase awareness of the benefits of smaller classes and to promote reducing class size in the primary grades as a way to improve student achievement.

Acknowledgements

Arizona Children First would like to thank a number of people and organizations for sharing data and information, reading drafts of this report, and working with us to better understand the barriers to educational success in Arizona. We would like to thank Mike Kidder; Cindy Resnick of the University of Arizona, Rural Health Office; Penelope Jacks and Elizabeth Hudgins of the Children's Action Alliance; Daphne Atkeson and Mary Kay Haviland of the Arizona Education Association; Claire Scheuren and Harry Kressler of the Pima Prevention Partnership; and Timothy Fuller for phototography.

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For more information about this topic, to order additional copies of this report, or receive information on how to become involved, please call Arizona Children First at (520) 324-0881 or (602) 241-1911.

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Fiscal administration of Arizona Children First is provided by Pima Prevention Partnership.

Executive Summary

Too many Arizona children are failing to achieve a level of education that will ensure future success, both economically and socially. Currently, many Arizona children do not have the opportunity to learn effectively because of class sizes so large that teachers are no longer able to meet the individual needs of children.

This report describes the importance of a good educational foundation, examines the state of education in Arizona, describes research on the benefits of smaller class sizes, and provides recommendations for change.

Key Findings

Students Struggling to Achieve

- Of Arizona fourth graders, fewer than one out of four were proficient in reading and fewer than one out of seven were proficient in math.
- Arizona ranks 50th in the percentage of teens who are high school dropouts.

Limited Financial Support

- Arizona ranked 49th in per-pupil education expenditures in 1997.
- While education accounts 44% of the state budget, the fastest growing areas are judiciary and corrections — up 193% and 144% respectively between FY1989 and FY1999.

Smaller Class Sizes Work

- **Achievement** — *Wisconsin's* effort to reduce class sizes in low-income districts found a 12-14% increase in average test scores in just one year.
- **Behavior** — In Burke County, *North Carolina*, teachers in smaller classes were able to reduce the amount of time spent on discipline by 30%.
- **Earnings** — National research by economists found that boys who attended schools with lower pupil-teacher ratios stayed in school longer and as a result earned higher wages.

Too Many Large Classes

- 45% of Arizona kindergarten through sixth grade classrooms have more than 30 students. This is the second highest proportion of large classes in the country.

Lack of Policy Direction

- While Arizona has limited the number of cosmetology and barber school students to 20 per teacher, there is no limit on the number of elementary school students in a class.

Ensuring that all our children achieve in school is the key to their success as well as the long-term economic vitality of the state of Arizona. If we expect our children to be able to compete successfully in the 21st Century, we need to be sure they get a good education today.

reducing class sizes is a proven strategy for improving a child's success in school

The Importance of a Good Education

A good education is one of the most important keys to a child's success. The foundations of a good education begin very early in a child's life and continue throughout the primary years. During this time children are provided with the tools and skills needed to pursue higher education or employment. While a good education sets the stage for success, a poor quality education in the primary grades can lead to disengagement, educational failure, and other social problems.

Brain Development: Recent developments in brain research help us to understand just how critical the early years are to later development and ability to learn. During the first years of life, a child's brain undergoes a fantastic transformation. At birth, the brain contains 100 billion neurons — the electrical connections that help us to move, speak, feel, and think. However, if a child isn't provided with early stimulation, these neuron connections may never form. This electrical package of seeds, when planted and nurtured, helps children to grow and develop. After age 10, a child's brain begins to stop new neuron development.

children who score well on tests early in their education are more likely to do well in high school and graduate

Early childhood is a window of opportunity. With the brain growing and developing at a tremendous rate, early childhood is the time to lay the foundation for educational success.

Early Education: When a child gets off to a good start in the early grades he or she is more likely to succeed in school and achieve higher levels of education. Research finds that early ability is related to later school achievement. That is, children who score well on tests early in their educational career are more likely to do well in high school and graduate.[1] As children grow and learn, a strong educational foundation will help them to move on to more complex tasks and learn new skills. While early educational achievement may not be a full determinant of later success, it is clear that failure early in the educational career will hamper a child's ultimate success.[2]

Helping our children achieve early success is even more important for children who come from impoverished communities. Children who live in poverty are one-and-a-half times as likely to have developmental delays or learning disabilities. Children who live in poverty are two times as likely to repeat a grade, be expelled or become high school dropouts.[3] These children in particular need and benefit from good early childhood educational experiences.

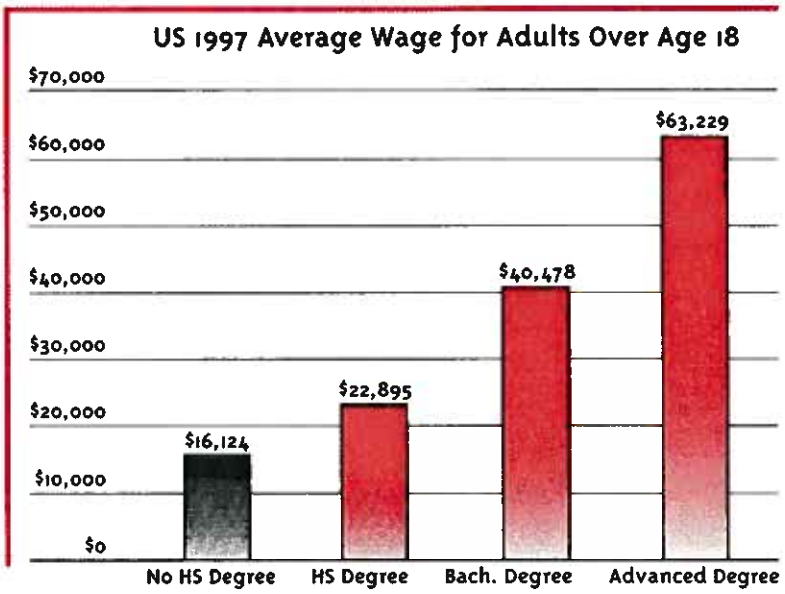
Learning Disabilities: Some children do not learn as easily as other children. Many have physical or mental disabilities which make it difficult for them to hear, to speak, or to absorb new information. Children with learning disabilities are more likely to drop out of school[4] or engage in delinquent behavior than their peers.[5] Fortunately, early intervention is effective for many learning disabled children. When children with mild or moderate learning disabilities receive early educational services some disabilities do not worsen and others even improve.

Teen Births: Recent research demonstrates that girls who succeed in school are much less likely to have a child as a teen. This research finds that nationally 60% of pregnant teens had dropped out at some point between the 8th

and 12th grades. More than a quarter of these teens dropped out before they were pregnant. Strong performance in school and high levels of school involvement are associated with staying in school and reduced risk of pregnancy for teen girls.[6] A good quality early educational experience helps young girls to see the benefits of education, achieve in school, and complete high school. This is particularly important in Arizona which has the third highest teen birth rate in the nation.[7]

Earnings and Productivity: Education has a significant impact on the earnings of workers as well on the economic viability of the state. For years, studies have demonstrated that the more schooling you have the more opportunities are open to you and the higher your chances of gainful employment. According to the U.S. Census, the average wage for people who have a college degree is more than twice that of individuals who have not completed high school.

Economists note that a more educated workforce not only improves individual earnings but has a positive effect on productivity, business earnings, and reduced costs to public entities. For example, research finds that the rate of return on investment in additional schooling is in about 11%. Increases in educational attainment of American workers account for as much as a quarter of the growth in output per person employed. This is greater than the contribution of physical plant and equipment investment to overall business earnings.[8]



Source: U.S. Bureau of Census

In addition, increased education is associated with lower crime rates, better health, lower rates of welfare receipt, and other positive trends. While these non-monetary gains are hard to measure, research has found that the total monetary and non-monetary annual rates of return to education are between 21 and 25%.[9]

The Next Generation: One of the greatest determinants of educational attainment and economic stability is parental educational level. In general, parents who have higher educational attainment are more likely to have children who graduate from high school, avoid teen birth, are employed, not on welfare, and are less likely to participate in criminal activity.[10] Arizona's own statistics prove this point. Children whose parents have a college degree were three times as likely to score as "proficient" grade on the 4th grade reading exams than children whose parents have not completed high school." By helping this generation of students achieve in school, we work to ensure that the next generation improves their chances of success.

Education plays a major more in the lives of our children, businesses, and communities. As children grow and develop, a strong educational foundation is critical to later educational success and economic stability. The more we are able to help our children learn and achieve the more likely they are to succeed in school and the less likely we will have to face problems of teen pregnancy, juvenile delinquency, or welfare.

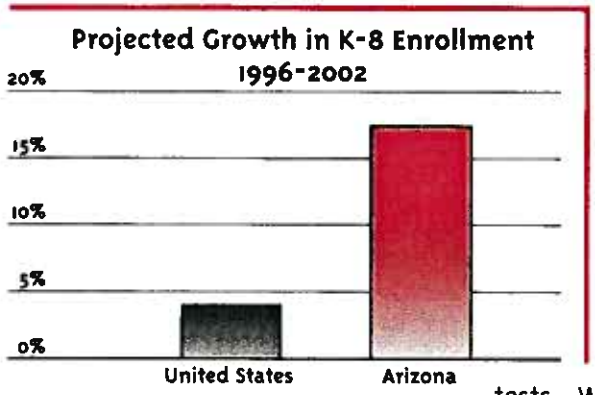
The State of Education in Arizona

Over the past several years and in recent statewide elections, improving the education of Arizona's children has been a central theme. Public officials and parents agree — helping our children become well educated is of critical importance. While education has been the subject of much discussion, real attention to the needs of our children, the status of education in Arizona, and what the future may hold have yet to be addressed.

as of 1997, Arizona ranked 49th in per-pupil education expenditures

Characteristics of Arizona Students: Arizona's more than 790,000 public school students attend 1,133 schools in 223 districts across the state. Of these children, 582,000 — or about three out of every four students — are in kindergarten through eighth grades. And, while each individual child has his or her own strengths and weaknesses, some general student characteristics help us understand the educational challenges facing Arizona.

- **30%** of school age children live in poverty — the second highest child poverty rate in the nation.[12]
- **31%** of Arizona public school students are Hispanic, 7% are American Indian or Alaskan Native, and 4% are Black.[13]
- **88%** of Arizona schools had limited English proficient students in 1993-1994. This is the 3rd highest portion in the nation.[14]
- **There are more than 83,800** special education students in Arizona — an increase of 10% in just three years.[15]
- **At 74 births per 1,000** teenage girls, Arizona has the 3rd highest teen birth rate in the nation.[16]
- **More than 34,000** children dropped out of Arizona schools last year.[17]



Source: National Center for Educational Statistics

Arizona is the second fastest growing state in the nation. This growth will undoubtedly impact our schools. In Arizona, between 1990 and 1996, the kindergarten through eighth grade enrollment grew 17%. Between 1996 and 2002, enrollment is projected to grow another 17% — more than three times the national average.[18] This tremendous growth will necessarily impact our schools, classrooms, and ability of our children to learn.

Educational Achievement in Arizona: Arizona students have struggled to achieve in school and do well on national competency tests. While our students have been making improvements over the years — improved achievement test and SAT scores — many Arizona children still are struggling to get a good education and keep pace with their peers nationally.

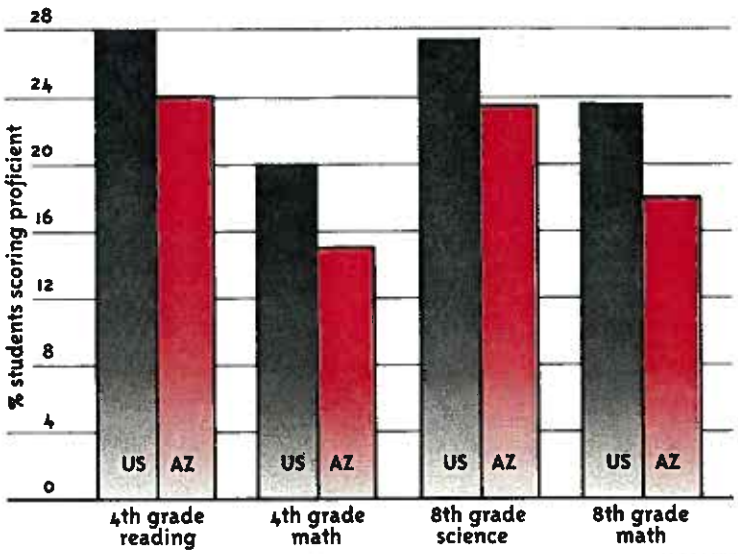
Consider these recent performance statistics from the National Assessment of Educational Progress[19]:

- **Only one out of four** Arizona fourth graders were proficient in reading in 1994 — 14% below the national average.
- **Fewer than one out of seven** Arizona fourth graders were proficient in math in 1996 — 33% below the national average.
- **One out of four** Arizona eighth graders were proficient in science in 1996 — 15% below the national average.
- **Fewer than one out of five** Arizona eighth graders were proficient in math in 1996 — 22% below the national average.

Children from low-income communities in Arizona — both rural and urban — fared worse on these tests. In comparison to non-poor fourth graders, one half as many poor children achieved a basic level of proficiency in reading and math tests.

In order to understand the status of Arizona students we need to look beyond tests scores. Unfortunately, the picture is dismal. Arizona has the highest percentage of teens who are high school dropouts in the nation.[20]

Student Proficiency in Reading, Math and Science



Source: National Center for Education Statistics, 1994 and 1996

Funding of Arizona Schools: Arizona's annual state budget of almost $5.7 billion funds services and programs we all benefit from including, education, public safety, road construction, agricultural projects, health care, and water safety. Of the total funds expended by the state about 44% — or about $2.5 billion — goes toward primary and secondary public education. The next largest area of expenditure is higher education at 13% of the total state budget.

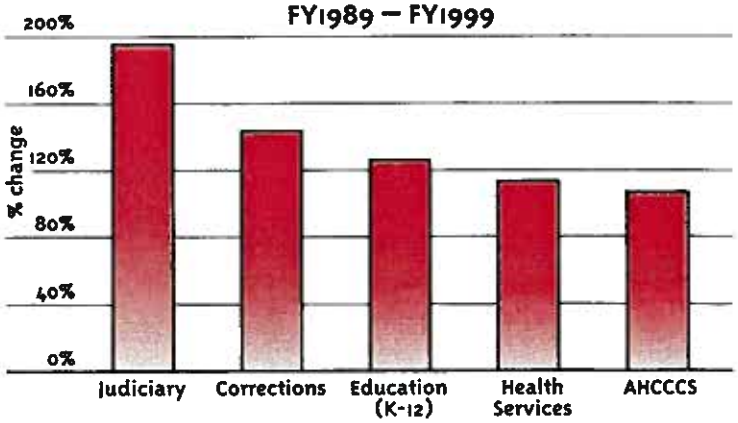
While education accounts for the largest amount of spending, the fastest growing areas of the state budget are judiciary and corrections — up 193% and 144% respectively between FY1989 and FY1999. In comparison, primary and secondary education grew only 128% during that same period.

A large portion of the growth in spending on kindergarten through 12th grade education occurred in FY1999 with the addition of $313.2 million as part of the Students First policy initiative. Without that recent increase, the primary and secondary education budget would have had one-half the growth rate of the judiciary department.

more than 45% of Arizona classrooms had more than 30 students

While Arizona is spending a significant amount of the state budget on education, our per-pupil support for education is much lower than in other states. As of 1997, Arizona ranked 49th in per-pupil education expenditures. The state ranked 25th (Georgia) spends $1,500 more per pupil than Arizona. New Jersey, number one in per-pupil spending, spends about $9,455 per pupil — or 134% more than Arizona.[21]

Growth in Funding of Selected State Agencies FY1989 — FY1999



Source: Joint Legislative Budget Committee

Class Size and Success in School

approximately 24 states are enacting legislation to reduce class size

It is critical that Arizona find ways to improve educational outcomes for children. Over the years many states have struggled with this dilemma, but one strategy is emerging as central to improving a child's school experience — reducing class sizes.

Class Size Reduction Efforts Across the Nation: States across the nation have begun to implement class size reduction programs. As of mid-1998, approximately 24 states were enacting legislation to reduce class size.[22] These efforts are varied — some have been voluntary while others mandatory. These state program include:

Indiana One of the earliest class size reduction efforts, Indiana began its program in 1984 with a two year pilot project called Prime Time. Here the state lowered class sizes in 24 kindergarten through second grade classrooms to 14 students. The legislature expanded this effort statewide reducing classes to 18 students in kindergarten and first grade and 20 students in second and third grades.

Tennessee Started in 1985, Tennessee has a substantial class size reduction program and is evaluating the effect of the policy change. Hoping to improve test scores but not yet confident of the class size policy change, Tennessee undertook an experiment, referred to as Project STAR, to measure the effect of class sizes on an estimated 7,000 students in 79 sites over four years. This program randomly assigned schools to have kindergarten through third grade classes with sizes of 13-17 students, 22-25 students or, 22-25 with the addition of a teacher aide.

Minnesota In 1993, Minnesota targeted funds to reduce class sizes in kindergarten through sixth grades. Local school districts compete for state grant funds to reduce class sizes to a recommended student-teacher ratio of 15:1 with a maximum of 16:1.

Wisconsin Started in 1996-1997 schoolyear, Wisconsin's SAGE program lowered class sizes to 15 students in kindergarten through third grade classes in 30 lower-income schools across the state. This effort was expanded to a total of 74 schools in the 1998-1999 school year. State aid to fund class size reduction is provided through a 5-year grant to approved schools.

California In 1996, California set aside funds to help schools that reduce classrooms to fewer than 20 students in the first and second grades. Participating schools are then allowed to reduce class sizes in the third grade and kindergarten. These schools receive $800 per pupil in aid to help offset the costs of class size reduction.

New Federal Funds For Class Size Reduction

In the 1999-2000 school year, school districts across the nation will receive $1.2 billion to reduce class sizes and hire more teachers in first through third grades. Arizona will receive an estimated $17.5 million beginning July 1, 1999. The state will target funds to schools districts with high concentrations of low income students and districts with growing enrollments. Local schools will be able to use these funds to hire teachers and provide professional development and training opportunities.

The Benefits of Reduced Class Sizes:
As with most educational reform efforts, the impact of reducing class sizes has been studied by program administrators as well as academics.

Although not all of the questions about class size reduction have been settled, states have begun to conduct their own research. Their results find that reducing class size:

- **Improves student achievement** — *Michigan's* pilot project to reduce class sizes in Flint has meant that 43% more fourth graders are passing the state's reading test. *Wisconsin's* effort to reduce class sizes in low-income districts found a 12-14% increase in average test scores in just one year.
- **Has long-lasting benefits** — In *Tennessee*, where children in smaller classes scored significantly better on standardized tests than children in larger classes, has continued to study the effect of smaller classes sizes. The *Lasting Benefits Study* found that the benefits of smaller class size has continued into the ninth grade, even after children were returned to larger classes in the fourth grade.[23]
- **Improves behavior** — In Burke County, *North Carolina*, researchers found that teachers spent 30% less time on discipline when class sizes in first through third grades were reduced. In addition, teachers participating in *California's* class size reduction effort cited fewer student disruptions and that students were more motivated to learn.
- **Encourages students to stay in school which improves earnings** — National research by economists found that boys who attended schools with lower pupil-teacher ratios stayed in school longer and as a result earned higher wages.

boys who attended schools with lower pupil-teacher ratios stayed in school longer and earned higher wages

Class Sizes in Arizona: While the benefits of small class sizes, especially for younger children, has been found to improve educational outcomes, Arizona continues to struggle with many large classrooms. In comparison to states across the nation, Arizona has one of the highest class sizes. A recent study of kindergarten through sixth grade classrooms found that on average Arizona had about 28 children per class, but more than 45% of classrooms had more than 30 students. This is the second highest proportion of large classrooms in the nation.[24]

A recent survey of Arizona educators found that the average class size was 26 students.[25] While class sizes appear to be slightly smaller in kindergarten through third grade classrooms (an average of 24 students in a class) the size was still larger than the research indicates is beneficial for young children. Of the districts with kindergarten through third grade classrooms:

- **7%** had an average class size of fewer than 20 students
- **74%** had an average class size of between 20 and 25 students
- **19%** had an average class size of greater than 25 students.

These large classes can be found in large and small districts, rural and urban areas, and in wealthy and poor neighborhoods.

Arizona Law
Teacher to Student Ratio

Barber Schools	**1 : 20**
Cosmetology Schools	**1 : 20**
Primary & Secondary Schools	**NO LIMIT**

Source: ARS 32-553 and ARS 32-325

Arizona currently has no state law providing guidance on the recommended number of primary and secondary students per classroom or per teacher. These critical decisions are left to local school districts and school boards to identify as well as fund. Interestingly, state policy does limit the number of cosmetology and barber school students to 20 per teacher.

Recommendations

A good education is critical to the success of our children and the long term economic vitality of our state. But too many Arizona children score poorly on tests, are disengaged from school, and drop out.

If we want to turn the statistics around we must improve the school experience and help our children to achieve. Reducing class sizes in the early grades is one clear step in the right direction.

Reducing class sizes is supported by parents and teachers across the state and nation. A March 1997 *Wall Street Journal* poll found that 70% of adults believe that reducing class size would result in big improvements for public schools. Similarly, Arizona teachers are so supportive of class size reduction efforts that a 1994 survey found that 75% would turn down a $2,500 raise in exchange for smaller classes.

It is critical that policymakers act now to help our children learn and achieve. By observing other states we can learn some critical lessons about class size reduction efforts:

- Class size reduction efforts should be concentrated in the primary years, particularly kindergarten through third grade.
- Classes should be reduced to hold fewer than 18 students in a classroom.
- While all students benefit from smaller classes, at-risk, urban, minority and children growing up in poverty — those children most in danger of failure — seem to benefit the most.
- Class size reduction efforts work best when coupled with training opportunities for teachers, allowing them to take advantage of smaller class sizes.

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States across the nation have seen the benefits of smaller class sizes. **The state of Arizona should allocate funds to limit class sizes to under 18 in kindergarten through third grades.**

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