

PRESCHOOL ACCESS FEASIBILITY STUDY: EXECUTIVE SUMMARY

This study is the result of a partnership funded by the Department of Defense between the Office of Military Community and Family Policy and the USDA's National Institute of Food and Agriculture through a cooperative agreement with Purdue University.

The Department of Human Development and Family Studies and the Military Family Research Institute at Purdue University conducted a Preschool Access Feasibility Study (PAFS) on behalf of the Department of Defense Education Activity (DoDEA) under the Department of Defense (DoD)-United States Department of Agriculture (USDA) military extension partnership agreement.

The objectives of the PAFS were to:

- a)** identify and operationalize empirically proven elements of high-quality preschool programs,
- b)** summarize preschool programs currently available outside of the contiguous United States (OCONUS) installations with DoDEA schools,
- c)** identify options for improving access to high-quality preschool at these installations,
- d)** identify efficacious models and associated costs for these options, and
- e)** produce a final research report summarizing the study and recommendations.

We focused the PAFS research on OCONUS installations that contain primary schools in Europe (31 installations with 41 primary schools) in the Pacific (17 installations with 24 primary schools.)

To support the PAFS objectives, Purdue undertook a comprehensive literature review on preschool quality and systematically gathered input from stakeholders within DoDEA and Child and Youth Programs (CYP). Purdue compiled and summarized available administrative data, conducted key informant interviews with early education leaders, and made site visits to selected installations (five in Europe and four in the Pacific) to observe classrooms and facilities, interview administrators and staff, and talk with parents.

WHAT IS QUALITY PRESCHOOL?

High-quality preschool indicators are directly or indirectly linked to important developmental outcomes for young children: school readiness, psychological health, and well-being.

Building on an earlier literature review of quality in early care and education programs, the Purdue University team searched peer-reviewed articles and technical reports published within the last 15 years.

The review found evidence for nine key preschool quality indicators:

1. **High-quality teacher-child interactions.** There is **substantial evidence** that the quality of daily teacher-child interactions contributes to overall preschool program quality and positive child outcomes. High-quality teacher-child interactions are responsive, supportive, and focused on specific learning goals.
2. **Highly-qualified preschool teachers.** There is **substantial evidence** that teachers' level of education, including specialization in early childhood education, is linked to quality teacher-child interactions, is linked to other aspects of preschool quality, and leads to better child outcomes. Teachers with four-year college degrees in early childhood education are most likely to provide preschool classrooms that offer rich learning opportunities for young children.
3. **Content-focused, evidence-based preschool curriculum.** There is **substantial evidence** that implementation of a developmentally appropriate, evidence-based, content-focused preschool curriculum produces measureable gains for children. Effective preschool curriculum can focus on one content area, such as mathematics, or include a number of academic or developmental goals for children. Important features of effective curricula include specific learning objectives for children, learning activities designed to meet those objectives, and benefits of the curriculum that have been rigorously evaluated.
4. **Ongoing in-service training for teachers.** There is **substantial evidence** that ongoing teacher in-service training, including continuity in coaching or mentoring, increases preschool program quality and leads to better outcomes for children. The most effective preschool curricula are implemented with a significant teacher training component, and initial training is followed by ongoing support and coaching by experienced trainers.
5. **Smaller class sizes and child/teacher ratios.** There is **moderate evidence** that smaller class size groups (and lower child to teacher ratios) are related to both classroom interaction quality and better child outcomes. When teachers work with small groups, they are able to interact more frequently with each child, and the quality of their interactions tends to be higher. There is not sufficient evidence to support a specific optimal class size recommendation for 4-year-olds, but "smaller is better," and we recommend class sizes between 15-20 children with a qualified lead teacher and an assistant teacher.
6. **Length of school day.** There is **moderate evidence** that a longer school day (in a high-quality preschool program) provides additional benefits for children, particularly for children from low income families. A full school day of preschool includes 6 hours of planned activity. However, measureable benefits have also been found in high-quality preschool programs that meet for 2½ to 3 hours per day.
7. **Family engagement and support.** There is **moderate evidence** that parent-provider communication and parental involvement are key components of overall preschool quality and lead to better child outcomes. Family engagement in a preschool program takes staff time and resources, so working with families must be a program priority, and staff time and training should be devoted to the goal of maximizing the amount and quality of family involvement.



- 8. Ongoing, appropriate child assessment.** There is **emerging evidence** that developmentally-appropriate assessments are associated with improved child development outcomes for preschool children. Child assessments that are completed by teachers on a continual basis, using daily observations and collaboration with families, and that are linked to the program's curriculum offer a number of benefits. Teachers and families can share information about each child's strengths and needs, promoting collaboration and shared goals. Planned educational activities can address specific learning objectives for each child. Teachers and programs can demonstrate children's progress in systematic ways.
- 9. Strong preschool leadership.** There is **emerging evidence** that the principal's or director's educational qualifications and support of the preschool program are related to other aspects of preschool quality. Strong, positive leadership in the preschool program helps teachers focus on children's and families' needs, engage in continuous quality improvement, and perform more effectively in a supportive work environment.

PROGRAMS FOR PRESCHOOLERS: THE CURRENT SITUATION

In October 2014, within DoDEA schools located OCONUS, approximately 909 4-year-olds were attending Sure Start, and 793 children 3 to 5 years received special education services through Preschool Services for Children with Disabilities (PSCD). Additional numbers of 4-year-olds attended the Child Development Centers (CDCs) for either full-day or part-day care and education, or in some cases for part-day preschool school readiness programs such as the Army's Strong Beginnings. The research team was not able to obtain accurate data about the total number of 4-year-olds currently attending CDCs on these installations.

To increase our understanding of the current state of preschool on overseas installations, we invited DoDEA principals and CYP supervisors on OCONUS bases to participate in a survey or interview; 80 percent responded. We also visited nine installations (five in Europe and four in the Pacific) to observe classes and talk with staff, administrators, and family members. On each installation we visited both DoDEA schools and CDCs.

To estimate the total demand for universal preschool, in consultation with DoDEA staff, we calculated 90 percent of the current DoDEA kindergarten enrollment, assuming that preschool would be voluntary and that some families would choose to keep their 4-year-olds home or place them in family child care. We estimated that a total of 4,150 4-year-old children would enroll in preschool if a program were universally available on OCONUS installations (2,222 in Europe and 1,928 in the Pacific). Key informant survey respondents, however, indicated variation in demand, depending on location.

Locations with a small number of young children and those with other acceptable preschools locally available reported lower demand for preschool on the installation. More than 80 percent of the respondents had knowledge of at least some children attending preschool off-installation, but could not quantify the numbers. Overall, 39 percent of our respondents indicated they had a waiting list for preschool, ranging between two and 36 children. However, some respondents stated that waiting lists are an unreliable indicator of need, since families are often discouraged from applying due to limited slots or restricted eligibility criteria. Therefore future implementation planning for expanded preschool options should begin with a thorough and systematic census of eligible 4-year-olds and a survey of parents' intentions to enroll their child in preschool, installation by installation.

We found that the existing programs serving 4-year-olds in DoDEA schools and CDCs have particular unique strengths, resources, and limitations. These strengths and limitations should be considered as DoD plans possible expansion of preschool options. Each program is able to provide at least some of the preschool quality indicators we identified.

Sure Start in DoDEA schools currently meets many of the preschool quality criteria we identified. Sure Start has a stable corps of highly-qualified preschool teachers holding at least a four-year college degree, with certification in early childhood education, and the DoDEA provides pay and benefits sufficient to attract and retain these qualified educators. They are able to advertise and recruit qualified teachers worldwide. The classrooms are well-equipped, the program is offered free of charge to eligible families, and there are school-based support staff available to provide teacher training and auxiliary services as needed. Sure Start is able to collaborate with PSCD services to children with special needs to provide early education in the least restrictive environment under one roof. Current limitations include eligibility restrictions favoring enlisted personnel that preclude participation by many children, lack of space for expansion within many schools, and limitations on the number of hours per day a program can be provided, limited to the typical school day (6 hours) and calendar (9 months).

Child Development Centers (CDCs) offer full-day programming to anyone on the installation 12 months per year, and are able to respond flexibly to families' needs for care during hours parents are working. CDCs have a well-developed entry-level staff training program plus ongoing in-service training provided by qualified on-site trainers and their classrooms are well-equipped. CDC programs are administered by experienced, well-educated directors, and they often have space available that could be used for additional preschool classes, if sufficient qualified staff and funding were available. Current limitations include policy and funding constraints that prevent CDCs from recruiting and retaining highly-qualified preschool teachers on a large scale. Also there is a tuition cost to families for CDC programs, which is offered on a sliding scale.

Any expansion of preschool on OCONUS installations could require additional classrooms. Many local informants reported space would be a significant constraint to expanding preschool for 4-year-olds. Currently most DoDEA schools use only one or two classrooms for their 4-year-old programs and do not have additional suitable space. Similarly, most CDC programs use only one classroom for preschool programming, although they more often reported having additional classrooms available to expand preschool programming.

RECOMMENDATIONS:

EXPAND ACCESS TO HIGH-QUALITY PRESCHOOL ON OCONUS INSTALLATIONS

Based on current scientific evidence identifying elements of quality preschool and this current study of preschool programs on the OCONUS installations, we recommend DoD consider implementing a preschool program for all resident children for a full school day, at least nine months per year, considering also children and families' needs for additional wraparound and summer programming. This is the recommended option outlined below. If cost and staffing constraints limit the possibility to implement the recommended option immediately, we suggest DoD consider a phased implementation, possibly employing the alternative options, also outlined below.

	Key Quality Features	Quality & Cost Advantages/Disadvantages
<p>Recommended Option: Full-Day, Advanced Quality</p>	<ul style="list-style-type: none"> • lead teachers have four-year degrees in early childhood education • children attend five days per week for a full school day • a class size of 15-18 students and student:teacher ratio of 8:1 • each classroom staffed with a lead teacher and assistant or aide • professional development by coaches/mentors at ratio of one per 10 instructional staff; some hours of in-service training requiring substitute teachers 	<ul style="list-style-type: none"> • highly qualified lead teachers, prepared to implement evidence-based curriculum, individual child assessment, and other recommended quality elements • smaller class sizes and child/teacher ratios lead to effective teacher-child interactions • ongoing professional development via mentoring/coaching improves and maintains quality • more instructional time available each day • daily stability and continuity, especially important for military children • more family support and engagement time for staff; smaller number of students and families per teacher <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> • sufficient numbers of highly qualified early childhood lead teachers to staff full-day classrooms may be challenging to hire in current job market • cost per child is higher for a full-day program than for a half day

	Key Quality Features	Quality & Cost Advantages/Disadvantages
<p>Alternative Option 1: Part-Day, Advanced Quality</p>	<ul style="list-style-type: none"> • lead teachers have four-year degrees in early childhood education • children attend five days per week for a half day • class size of 15-18 students and student:teacher ratio of 8:1 • each classroom staffed with a lead teacher and assistant or aide • professional development by coaches/mentors at ratio of one per 10 instructional staff; some hours of in-service training requiring substitute teachers 	<ul style="list-style-type: none"> • highly qualified teachers, able to implement evidence-based curriculum, individual child assessment, and other quality elements • smaller class sizes and child/teacher ratios lead to quality teacher-child interactions • costs are lower for a half-day program than for a full-day • ongoing professional development via mentoring/coaching improves and maintains quality • costs are lower for less qualified teachers and for a half day program compared to a full-day • lower school-based costs are somewhat offset by costs of wrap-around ECE at CDCs <hr/> <ul style="list-style-type: none"> • hiring and retaining sufficient numbers of highly-qualified early childhood lead teachers to staff half-day classrooms may be challenging in current job market • less instructional time each day, resulting in less optimal outcomes for children • less family engagement possible with twice the number of students and families per teacher, if teachers do double sessions each day • requires additional wrap-around programming at CDCs for some children, with increased costs for families and DoD • wrap-around ECE is specified at a minimum adequate level of quality and cost

	Key Quality Features	Quality & Cost Advantages/Disadvantages
<p>Alternative Option 2: Part-Day, Improved Quality</p>	<ul style="list-style-type: none"> • smaller share of lead teachers with four-year degrees in early childhood education, employing teachers with two-year associate degrees in early childhood education • children attend five days per week for a half-day • class size of 18-21 students and student:teacher ratio of 9:1 • each classroom staffed with a lead teacher and assistant or aide • professional development by coaches/mentors at ratio of one per 10 instructional staff; fewer hours of in-service training requiring substitute teachers 	<ul style="list-style-type: none"> • lead teachers have associate-level formal education in early childhood education, thus are prepared to implement curriculum, assessment, and other quality elements more effectively than teachers without ECE degree • hiring and retaining sufficient numbers of improved quality early childhood lead teachers to staff part-day classrooms would be easier in current job market, if sufficient salary and benefits are offered • costs are lower for less qualified teachers and for a half-day program compared to a full-day • somewhat offset by costs of wrap-around ECE <hr/> <ul style="list-style-type: none"> • not as highly-qualified teachers can produce less desirable student outcomes and require additional training, coaching/mentoring • higher student/teacher ratios not as desirable for student-teacher interactions and outcomes

THE DOD COST AND STAFFING CALCULATOR

The research team developed and applied the Cost and Staffing Calculator as a tool for policy makers to quantify the staffing and cost requirements of unlimited numbers of options for increasing access to high-quality preschool for children and families on OCONUS installations. The calculator is a set of spreadsheets designed with the flexibility to compare different policy strategies for user-defined geographic units ranging from a specific installation to regions or all OCONUS installations. It consists of **policy inputs** (parameters such as length of day, days per year, quality supports, and family eligibility) and **staffing and cost outputs** (staffing requirements and associated costs, in aggregate and per student). The Cost and Staffing Calculator also generates estimates for the number of classrooms required to meet the combined objectives of access (share of children attending) and quality (class size, student:teacher ratio and full- vs. half-day programs) for various options. The calculator is built using an unfolding approach, allowing the user to focus on major policy inputs and examine aggregated outputs or to delve into more detail.

For example—using the DoD Cost and Staffing Calculator we estimated total OCONUS staffing and costs required to implement the three recommended and alternative preschool options in this report, including the personnel costs per child. In this example, preschool provision is combined by both DoDEA (75%) and CDCs (25%):

	Recommended option: Full-day, advanced quality		Alternative option 1: Part-day, advanced quality		Alternative option 2: Part-day, improved quality	
	Total cost (\$ millions)	Cost per child (\$ personnel only)	Total cost (\$ millions)	Cost per child (\$ personnel only)	Total cost (\$ millions)	Cost per child (\$ personnel only)
DoDEA school-based basic preschool (75%; 9 months)	90.5	17,900	45.8	9,100	38.0	7,000
CDC-based basic preschool (25%; 12 months)	22.0	18,200	11.2	9,200	9.1	7,500
Subtotal, basic preschool costs	112.5	--	57.0	--	47.1	--
Supplemental hours for CDC, additional ½ day at minimum adequate standards	--	--	8.6	7,100	8.6	7,100
Combined basic preschool with DoDEA and CDC, including supplemental hours	112.5	--	65.6	--	55.7	--

These example estimates are for one set of policy specifications. Other policy specifications can easily be estimated using the Cost and Staffing Calculator. These are estimated gross costs for providing universal preschool on OCONUS installations, not considering the budgets already in place for preschool programs provided by DoDEA schools and CDCs or potential offsets from parent fees. Staffing implications of these options are discussed in the full report.



CONCLUSIONS

- 1. There are compelling reasons for DoD to consider expanding the availability of preschool for 4-year-olds on OCONUS installations.** Based on current DoDEA kindergarten enrollments and usage patterns for preschool in the continental U.S., we estimate that 4,150 (90 percent) 4-year-olds would attend a high-quality voluntary preschool program if it were universally available on these installations.
- 2. DoD should staff preschool classrooms with teachers with four-year degrees in early childhood education who are prepared to implement an evidence-based curriculum.** Along with educational qualifications, ongoing professional development and coaching have been shown to be essential components of a high-quality program and should be built into DoD quality standards. Recognizing it may be impractical to recruit sufficient numbers of teachers with four-year degrees, DoD should also consider hiring two-year degree teachers in early childhood education or a related field, providing those teachers with additional professional development support, including ongoing coaching and mentoring, to increase their teaching expertise.
- 3. DoD should carefully consider class sizes and teacher to child ratios, a developmentally-appropriate child assessment system, knowledgeable supportive administrators, and an emphasis on family engagement.** The research evidence points to the impact of these factors on quality preschool education. It is important for DoD to intentionally address these factors in preschool planning. The DoD Preschool Cost and Staffing Calculator provides a tool to assist DoD in weighing and balancing these quality factors.
- 4. The most efficient solutions for expanded preschool will involve collaboration of DoDEA and CYP, combining strengths and available resources.** Key problems to solve include classroom space and families' needs for full-day, wrap-around, and summer programming for many children while their parents are at work. The possibility of preschool expansion presents an opportunity for DoDEA and CYP to collaborate in inventive ways to provide high-quality preschool for all 4-year-olds in the most cost effective manner.
- 5. The DoD Preschool Cost and Staffing Calculator provides a planning tool** that can be used to consider a variety of preschool policy parameters and programming options to determine associated costs and staffing requirements, all tailored to the currently existing conditions of OCONUS installations and programs. It can also be used to alert policy makers to situations where the combination of improved access and desirable class sizes will require additional classroom space.
- 6. Examine a range of policy options.** Based on our assessment of available preschool services and needs, and our review of preschool quality, we suggest as starting points one recommended option for high-quality preschool and two alternative lower-cost options, varying in specific quality details and associated costs. We offer these options as starting points for planning, as there are necessary trade-offs considering quality and cost. It is also possible to design intermediate options by varying only some of the set of policy parameters differentiating the advanced and improved levels of quality specified for this report.