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Education reform and the quality of kindergartens in Jordan

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Abstract

The present study evaluates a major education reform in Jordan—the implementation of public kindergartens—and provides an example of how evaluation can be incorporated into education reform. In the context of education reform in Jordan, 532 public kindergartens have been created over the last five years. A stratified random sample of kindergartens was selected to represent these new public kindergartens ($n = 84$) and previously existing private kindergartens ($n = 23$). Independent observers rated the quality of kindergarten environments in seven domains. Overall, 13% of public kindergarten environments were observed to be inadequate, 43% were of minimal quality, 43% were good, and 1% were excellent. In four of the seven domains, the quality of public kindergartens was significantly higher than the quality of private kindergartens; there were no significant differences in the other domains. Findings suggest the importance of continuing to implement high quality kindergartens in Jordan and of incorporating evaluations into education reform.

Keywords

education reform; evaluation; Jordan; kindergarten environment

Introduction

A large body of research demonstrates the importance of high quality early childhood education to prepare children for school and to launch them on a path leading to academic achievement. An important question that has been approached in a variety of ways in previous research is how best to provide quality early childhood education to children. Although there are some exceptions (e.g., Sassu, 2007; Yuen, 2008), the majority of this previous research has been conducted with American samples and has focused on questions of particular relevance in American schools. For example, attention has been devoted to questions such as whether the federal Head Start program or state-sponsored preschool programs better prepare children for entering kindergarten in the United States (Henry, Gordon, & Rickman, 2006), whether half-day or full-day kindergarten programs are related to better outcomes for children (e.g., Baskett, Bryant, White, & Rhoads, 2005), and whether particular manipulations in the school curriculum are associated with differences in child outcomes (e.g., Paris et al., 2004). Recent policy-focused analyses have considered education reform in the context of the 2001 American No Child Left Behind Act (Goldstein, 2008; Stipek, 2006). Because education settings are shaped to a large degree by cultural norms (Lee, 1996; Shirakawa, 1996; Wang & Mao, 1996) and public policies, it is important to understand education reforms within the cultural and policy contexts in which they occur.

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The purpose of this study was two-fold. First, we sought to evaluate a specific major education reform in Jordan: the implementation of public kindergartens. Second, we sought to provide an empirical example of how evaluation can be incorporated into education reform. Evaluation is especially important in the current climate that emphasizes evidence-based practices in education and is beneficial for all of the major stakeholders in education. Policy makers, teachers, and school administrators benefit in being able to make informed decisions regarding policies and practices that are warranted by the data, and children ultimately benefit in being provided with educational environments that are as conducive to their learning and academic achievement as possible.

The importance of early childhood education

The early years in children's lives are vital to brain development and academic achievement, and the quantity and quality of stimuli children receive during early childhood have important long-term physical, emotional, and cognitive consequences (e.g., Shonkoff & Phillips, 2000). Children who have attended high quality early childhood programs (including childcare, preschool, and early elementary school settings) display greater motivation to learn, higher achievement, and higher self-esteem than do children who have not attended such programs (National Research Council, 2001; Shonkoff & Phillips, 2000). High quality early education can help children to understand and use language, control aggression, play and work with other children, accept adult direction, focus attention, and behave independently (Stipek, 2006).

Effective early childhood classrooms can be characterized by several key features. For example, effective classrooms are places where children feel well cared for and safe, are valued as individuals, and where their needs for attention, approval, and affection are supported (Hamre & Pianta, 2005). They are also places where children can be helped to acquire a strong foundation in the knowledge and skills needed for school success. There is considerable evidence that high quality early childhood education can have long-lasting academic benefits for children (Barnett, 1995; Farran, 2000).

Children's experiences in a classroom are made up of different types of interactions: interactions with the teachers, interactions with other children, interactions with the physical space, and interactions with available materials. Such interactions can be of a social, academic, behavioral, or routine nature. The number and type of materials in a classroom, the ratio of teachers to children, and the educational attainment of the staff are often used as components of a classroom's quality assessment. However, these characteristics are only indirect measures of quality, which might affect children's learning through the types of interactions between teachers and children that they afford. Directly assessing teacher-student interactions provides an additional method of assessing classroom quality.

Education reform and the context of kindergartens in Jordan

Jordan represents an important and informative context in which to study the quality of early elementary education. Although first grade is mandatory in Jordan, kindergarten is not. Until recently, kindergartens were either not available to most children or were available only in the private rather than public sector. However, Jordan is now in a period of education reform. Since 2003, the Ministry of Education (MOE) has established 532 public kindergartens in Jordan. Nevertheless, this number remains small in comparison with 4,127 kindergartens owned and operated by the private sector. The number of teachers in the different sectors reflects this imbalance as well: Public kindergartens employ 506 teachers compared with 4,497 teachers in private kindergartens (MOE, 2008). It is important to note that almost 90% of families who have children in kindergarten send their children to private schools not because they are better but because there is no public kindergarten option

available to them. In Jordan, private kindergartens are not necessarily for profit. Charitable organizations run many of the kindergartens for free or for a very minimal payment. Thus, private kindergartens in Jordan should not be equated with private schools in countries in which private schools are primarily attended by higher SES students.

The expansion of kindergarten into the public sector is being implemented as part of a larger reform to address the vision of King Abdullah in making Jordan the information technology hub in the Middle East and in developing human capital for the knowledge economy. In July 2003 the Ministry of Education launched a five year project called Education Reform for the Knowledge Economy (ERfKE). The initial phase of the project is now complete, and a second phase of ERfKE will be launched in 2009. Enormous funds are being secured to enable the Ministry of Education to undertake education reform at the governance, program, and facility quality levels, in order to achieve sustainable learning outcomes relevant to a knowledge economy. This project is the first of its kind in the Middle East. Four major components are part of this broad reform: (1) Reorienting education policy objectives and strategies and reforming governance and administrative systems; (2) Transforming education programs and practices to achieve learning outcomes relevant to a knowledge economy; (3) Supporting the provision of quality physical learning environments; and (4) Promoting learning readiness through expanded early childhood education (MOE, 2002).

The fourth component focuses on implementing a comprehensive approach to improving the scope and quality of essential early childhood services. This component aims at increasing institutional capacity building (curriculum framework, licensing standards for kindergarten), building the capacity of kindergarten teachers and administrators, expanding kindergartens for the poor (construction, furnishing and equipping kindergarten classrooms in the most disadvantaged communities), and encouraging parent and community participation (MOE, 2002).

The present study

An important policy question within Jordan, as well as for other countries considering options during education reforms, is whether the quality of public kindergartens that can be established during a period of relatively rapid reform is high enough to warrant further expansion of public kindergartens to serve more children. If public kindergartens cannot attain the same levels of quality as private kindergartens, this would suggest that education reform might involve finding new funding streams to support the private sector in expanding kindergarten programs. On the other hand, if public kindergartens can attain levels of quality as high as (or higher than) what is currently being provided in the private sector, this suggests that education reform might continue to support the expansion of public kindergartens. The study addresses the following specific research questions: What is the quality of public and private kindergarten environments in Jordan? Does the quality of the environment differ significantly between public and private kindergartens?

Method

Sample

The sample of the present study was identified and selected by the National Center for Human Resources Development (NCHRD) from the Ministry of Education database. A stratified random sample of kindergartens was selected to represent: region (north, middle, south) and rural/urban locations. A sample was selected to represent the public kindergartens ($n = 84$) and mainstream private kindergartens ($n = 23$). These were private kindergartens located around the same geographic areas of the sample of public kindergartens. These

private kindergartens did not include the high-end private kindergartens, which are located primarily in the capitol city of Amman.

Procedure and research instrument

Data were collected by the end of the 2007–2008 school year. Field researchers collected the data through direct observation of the kindergarten environment, including interactions between teachers and children. Each kindergarten was observed for one school day. The field researchers all had university degrees in education or related fields, as well as specialized training in early childhood education. There were 25 field researchers. Most of the field researchers had participated as field researchers in previous national surveys. A one day training workshop was organized at the NCHRD for the purpose of training the field researchers on administering and scoring the research instrument. Each field researcher was assigned 4–5 kindergartens to evaluate.

The Early Childhood Environment Rating Scale, Revised Edition (ECERS-R; Cryer, Harms, & Riley, 2003) was used to assess the quality of the kindergarten learning environment. The ECERS has been translated into many languages and used in international studies involving many diverse cultures (e.g., Tietze, Cryer, Bairrio, Palacios, & Wetzal, 1996). In the present study, the measure was translated into Arabic and then given to a group of professionals in the fields of early childhood education and evaluation and measurement in order to validate the instrument's language clarity and the suitability of the items to what they are measuring in the Jordanian context. The feedback received by these experts was taken into account, and modifications were made to some items to make them more culturally appropriate.

The ECERS-R is used to rate the global quality of early childhood educational environments. It includes 43 items organized into seven subscales (total $\alpha = .94$). First, Space and Furnishings includes indoor space, furniture for routine care, play and learning, furnishings for relaxation and comfort, room arrangement for play, space for privacy, child-related display, space for gross motor play, and gross motor equipment (8 items, $\alpha = .83$). Second, Personal Care Routines refer to aspects of the kindergarten such as greetings/departures, meals/snacks, nap/rest, toileting, health practices, and safety practices (6 items, $\alpha = .69$). Third, Language-Reasoning includes books and pictures, encouraging children to communicate, using language to develop reasoning skill, and informal use of language (4 items, $\alpha = .80$). Fourth, Activities refers to fine motor, art, music/movement, blocks, sand/water, dramatic play, nature/science, math/number, use of computers, and videos (10 items, $\alpha = .84$). Fifth, Interactions includes supervision of gross motor activities, general supervision of children, discipline, staff-child interactions, interactions among children (5 items, $\alpha = .79$). Sixth, Program Structure includes the schedule, free play, group time, and provisions for children with disabilities (4 items, $\alpha = .68$). Seventh, Parents and Staff refers to provisions for parents, provisions for personal needs of staff, provisions for professional needs of staff, staff interaction and cooperation, supervision and evaluation of staff, opportunities for professional growth (6 items, $\alpha = .63$).

Scoring and recording procedures

The ECERS-R items are ranked from 1 to 7, with 1 = Inadequate (the kindergarten environment is lacking basic requirements and resources/materials indicating a lack of care that is not good for children's development), 3 = Minimal (the kindergarten environment has the minimum basic requirements and resources indicating care that meets, to some small degree, basic developmental needs), 5 = Good (the kindergarten environment has adequate and suitable requirements and resources indicating that the basic tenets of developmentally appropriate care exist), and 7 = Excellent (the kindergarten environment has outstanding resources that provide high quality care that expands children's experiences, extends their

learning, and provides warm and caring support). For categorical analyses, kindergarten environments were classified as inadequate (mean score < 2), minimal (mean score ≥ 2 and < 4), good (mean score ≥ 4 and < 6), and excellent (mean score ≥ 6).

Results

Analyses proceeded in two steps. First, we examined categorically the percentage of public and private kindergartens that were observed to be inadequate, minimal, good, or excellent in quality. Second, we compared continuous measures of the seven domains of kindergarten quality to test whether public and private kindergartens significantly differed.

Examination of the quality classifications revealed that 13.1% of public kindergarten environments in Jordan were observed to be inadequate, 42.9% were minimal, 42.9% were good, and 1.2% were excellent. In comparison, 21.7% of private kindergartens were observed to be inadequate, 60.9% were minimal, 17.4% were good, and 0.0% were excellent. Table 1 summarizes the percentage of public and private kindergartens that were classified as inadequate, minimal, good, and excellent on each of the seven subscales of the ECERS-R. In the description of findings that follows, we focus on the quality of public kindergartens. It should be noted that the quality of private kindergartens was generally worse than the quality of public kindergartens, as indicated by larger proportions of private kindergartens being classified as inadequate or minimal and smaller proportions of private kindergartens being classified as good or excellent (see Table 1).

Only 6% of public kindergarten environments were observed to be excellent and high quality with respect to space and furnishing, and 27.7% were good and adequate. However, 27.7% were observed to be minimal and less adequate, and 38.6% were inadequate with respect to space and furnishing. Within the space and furnishing subscale, the furniture for routine care, play and learning item had the highest mean (3.76), whereas space for gross motor play (2.51) and equipment (2.64) had the lowest means.

With respect to personal care routines, 13.3% of public kindergarten environments were observed to be excellent and high quality, and 42.2% were good and adequate. However, 34.9% were minimal and less adequate, and 9.6% of public kindergartens were inadequate with respect to personal care routines. Within the personal care routines subscale, greeting/ departing had the highest mean (5.48), and nap/rest (2.17) and toileting (2.64) had the lowest means.

In the language and reasoning domain, 22.9% of public kindergarten environments were observed to be excellent and high quality, and 31.3% were good and adequate. However, 32.5% were minimal and less adequate, and 13.3% were inadequate with respect to language and reasoning. Within the language and reasoning subscale, using language to develop reasoning skills had the highest mean (5.46), and books and pictures had the lowest mean (3.69).

None of the public kindergarten environments were observed to be excellent and high quality with respect to activities. Only 24.1% of public kindergarten environments were good and adequate with respect to activities. However, 39.8% were minimal and less adequate, and 36.1% of public kindergartens were inadequate with respect to activities. Within the activities subscale, use of TV, video, and/or computers had the highest mean (4.33), and dramatic play (1.31), music/movement (1.97), and sand/water (2.44) had the lowest means.

With respect to interaction, 43.4% of public kindergarten environments were observed to be excellent and high quality, and 39.8% were good and adequate. However, 12% were

minimal and less adequate, and 4.8% of public kindergartens were inadequate with respect to interaction. Within the interaction subscale, interactions among children had the highest mean (5.99), whereas supervision of gross motor activities had the lowest mean (4.87).

In the domain of program structure, 31.3% of public kindergarten environments were observed to be excellent and high quality, and 26.5% were good and adequate. However, 22.9% were minimal and less adequate, and 19.3% of public kindergartens were inadequate with respect to program structure. Within the program structure subscale, schedule had the highest mean (5.28), and provisions for children with disabilities had the lowest mean (1.20).

Only 2.4% of public kindergarten environments were observed to be excellent and high quality with respect to the parents and staff subscale; 16.9% were good and adequate. However, 67.5% were minimal and less adequate, and 13.3% of public kindergartens were inadequate with respect to the parents and staff subscale. Within the parents and staff subscale, supervision and evaluation of staff had the highest mean (5.39), and provisions for personal needs of staff (1.36) and provisions for professional needs of staff (1.46) had the lowest means.

Using the continuous measure of quality, a *t*-test revealed significant differences between public ($M = 145.4$, $SD = 51.10$) and private ($M = 114.5$, $SD = 52.41$) kindergartens in overall quality, $t(105) = 2.56$, $p < .05$. As shown in Table 2, additional *t*-tests revealed no significant differences between public and private kindergartens with respect to space and furnishing, personal care routines, and parents and staff. However, there were significant differences between public and private kindergartens with respect to language-reasoning, activities, interaction, and program structure. For all four of these indicators of kindergarten quality, the public kindergartens were rated as being higher in quality than were the private kindergartens.

Discussion

The present study addressed several questions related to kindergarten quality in the context of the major education reform in Jordan of implementing public kindergartens. In particular, we evaluated the quality of the newly implemented public kindergartens in relation to already established private kindergartens in seven domains. Through addressing these questions, we provide an example of how evaluation can be incorporated into education reform.

Overall, 13% of public kindergarten environments were observed to be inadequate, 43% were of minimal quality, 43% were good, and 1% were excellent; 22% of private kindergartens were observed to be inadequate, 61% were of minimal quality, 17% were good, and none were excellent. On the one hand, these results suggest a clear need to keep working to improve kindergarten quality in Jordan because of the high proportion of both public and private kindergartens observed to be inadequate or providing only minimal quality. On the other hand, these results are encouraging in suggesting that in only five years, it has been possible to implement public kindergartens that exceed the quality of available mainstream private kindergartens, suggesting that continuing to implement public kindergartens will serve the needs of Jordanian children better than will the private sector. Previous research has demonstrated that high quality early childhood education environments can have positive implications for children's future school success and behavioral adjustment; however, children without access to high quality early education opportunities often start school behind their peers and often do not catch up (e.g., Reynolds,

Ou, & Topitzes, 2004). Thus, continuing to improve the quality of kindergarten education in Jordan is an important task.

The best aspects of public kindergarten environments were interaction, program structure, personal care routines, and language-reasoning. The aspects of public kindergarten most in need of improvement were in the domains of parents and staff, activities, and space and furnishing. These findings suggest the need to improve provisions for parents and staff, including providing opportunities for staff interaction and cooperation and professional growth, and to develop in kindergarten classrooms a wide range of activities involving fine motor skills, art, music, movement, blocks, sand, water, dramatic play, nature, science, numbers, and the use of television and computers. The findings also highlighted the need to improve aspects of the kindergarten space and furnishings, including furniture for routine care, play and learning, furnishings for relaxation and comfort, room arrangements for play, space for privacy, child-related display, space for gross motor play, and gross motor equipment. Improving the quality of the physical environment and the available materials, including technology, is crucial to serve the needs of Jordanian children better and provide them with a solid foundation on which to advance in school.

The findings revealed significant differences between the quality of public and private kindergarten environments in favor of public kindergartens. More “good” and “excellent” kindergartens were found in the public sector than in the private sector. Despite the fact that around 50% of public kindergartens need improvements and some need immediate interventions, around 60% of the private kindergartens met only minimal quality standards and around 20% need even more urgent improvements as they were rated as being inadequate. These findings may seem surprising in some contexts in which public kindergartens are standard and private kindergartens are available primarily to families from higher socioeconomic backgrounds who are able to pay sometimes expensive tuition fees. However, in the context of Jordan, where private kindergartens often are provided by charitable organizations for minimal or no fees, attendance at a private kindergarten does not imply the same degree of socioeconomic advantage as in some other national contexts.

These conclusions should be considered in light of the study’s limitations. The private kindergartens included in this study were randomly selected from the same geographic regions in which the public kindergartens were opened, and the included private kindergartens served children who were demographically similar to those served by the public kindergartens. There are also high-end, expensive private kindergartens in Jordan, primarily in the capitol city of Amman. These high-end kindergartens were not included in the study because they serve a demographically different population and are not comparable to either the mainstream private kindergartens or public kindergartens.

The higher quality observed in the public than in the private kindergartens could have reflected several policies and institutional practices. Teachers at mainstream private kindergartens are not well trained, most of them do not have a degree in early childhood education or a similar field, and they are rarely provided with professional development opportunities. Relatedly, private kindergartens pay very low salaries to teachers; in the case of for-profit kindergartens, it is up to the owner to decide what to pay, and in the case of not-for-profit kindergartens run by charitable organizations, most are operated on very limited budgets and do not have the financial resources to pay teachers more than minimal salaries. In contrast, teachers at the public kindergartens are considered public employees who must have a minimum of a bachelor’s degree in early childhood education, and these teachers are subject to the same salary scale adopted by the government for other public employees. Thus, differences in teachers’ training, salaries, and other professional opportunities could have accounted for the higher quality we observed in public than in private kindergartens.

For example, higher salaries are likely to attract more motivated and qualified teachers to public settings, and teachers with a background in early childhood education are more likely than untrained teachers to understand how to structure classroom settings and teacher-student interactions in a way that benefits children's learning (Hooks, Scott-Little, Marshall, & Brown, 2006). Testing these hypotheses empirically will be an important direction for future research.

Conclusions and recommendations

Taken together, these findings lead to several conclusions and recommendations for the Ministry of Education in Jordan and for education reform in other countries. The quality level of the physical environment—space and furnishing, personal care routines, and activities—was observed to be inadequate or minimal in a large proportion of schools. Therefore, it is crucial to improve the educational and recreational materials and equipment available for children in both public and private kindergarten settings. In any attempt at education reform, it is important to build evaluation into the reform efforts from the outset, as was done in the Jordanian reform described here. Without building evaluation into the reform, it is not possible to know whether the reform is meeting its intended goals or whether changes in approach are warranted.

It was clearly demonstrated in this study that the public kindergartens outperformed the private ones in the program structures, interactions, activities, and in the language and reasoning domain. However, the private sector continues to enroll almost 90% of all kindergarten students. Thus, a two-part recommendation for the Ministry of Education would be to expand access to public kindergartens and to implement policies such as licensing requirements to improve the quality of private kindergartens whenever possible.

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References

- Barnett S. Long-term effects of early childhood programs on cognitive and school outcomes. *Future of Children* 1995;5:25–35.
- Baskett R, Bryant K, White W, Rhoads K. Half-day to full-day kindergarten: An analysis of educational change scores and demonstration of an educational research collaboration. *Early Child Development and Care* 2005;175:419–430.
- Cryer, D.; Harms, T.; Riley, C. All about the ECERS-R. Lewisville, NC: Pact Press; 2003.
- Farran, D. Another decade of intervention for children who are low-income or disabled: What do we know now?. In: Shonkoff, J.; Meisels, S., editors. *Handbook of early childhood intervention*. 2. New York: Cambridge University Press; 2000. p. 510-548.
- Goldstein LS. Kindergarten teachers making “street-level” education policy in the wake of No Child Left Behind. *Early Education and Development* 2008;19:448–478.
- Hamre B, Pianta R. Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development* 2005;76:949–1127. [PubMed: 16149994]
- Henry GT, Gordon CS, Rickman DK. Early education policy alternatives: Comparing quality and outcomes of Head Start and state prekindergarten. *Educational Evaluation and Policy Analysis* 2006;28:77–99.
- Hooks LM, Scott-Little C, Marshall BJ, Brown G. Accountability for quality: One state's experience in improving practice. *Early Childhood Education Journal* 2006;33:399–403.

- Lee KS. Culture and the Korean kindergarten curriculum. *Early Child Development and Care* 1996;123:167–182.
- Ministry of Education. The Education Reform for the Knowledge Economy Project. Ministry of Education; Amman, Jordan: 2002. Available online: http://www.moe.gov.jo/a_erfke/a_er.htm
- Ministry of Education. The annual statistical book. Ministry of Education; Amman, Jordan: 2008.
- National Research Council. *Eager to learn: Educating our preschoolers*. Washington, DC: National Academic Press; 2001.
- Paris, SG.; Pearson, PD.; Cervetti, G.; Carpenter, R.; Paris, AH.; DeGroot, J.; Mercer, M.; Schnabel, K.; Martineau, J.; Papanastasiou, E.; Flukes, J.; Humphrey, K.; Bashore-Berg, T. Assessing the effectiveness of summer reading programs. In: Borman, GD.; Boulay, M., editors. *Summer learning: Research, policies, and programs*. Mahwah, NJ: Erlbaum; 2004. p. 121-161.
- Reynolds AJ, Ou SR, Topitzes JW. Paths of effects of early childhood intervention on educational attainment and delinquency: A confirmatory analysis of the Chicago Child-Parent Centers. *Child Development* 2004;75:1299–1328. [PubMed: 15369516]
- Sassu R. The evaluation of school readiness for 5–8 year old children: Cognitive, social-emotional, and motor coordination and physical health perspectives. *Cognitive Creier Comportament* 2007;11:67–81.
- Shirakawa Y. Culture and the Japanese kindergarten curriculum: A historical view. *Early Child Development and Care* 1996;123:183–192.
- Shonkoff, J.; Phillips, D. *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press; 2000.
- Stipek D. No Child Left Behind comes to preschool. *The Elementary School Journal* 2006;106:455–465.
- Tietze W, Cryer D, Bairrao J, Palacios J, Wetzel G. Comparisons of observed process quality in early child care and education programs in five countries. *Early Childhood Research Quarterly* 1996;11:447–475.
- Wang J, Mao S. Culture and the kindergarten curriculum in the People's Republic of China. *Early Child Development and Care* 1996;123:143–156.
- Yuen G. Education reform policy and early childhood teacher education in Hong Kong before and after the transfer of sovereignty to China in 1997. *Early Years: An International Journal of Research and Development* 2008;28:23–45.

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Table 1

Percentages of the four quality levels of environment according to kindergarten type.

Quality Subscale	Inadequate		Minimal		Good		Excellent	
	Public	Private	Public	Private	Public	Private	Public	Private
Space and furnishing	38.6	47.8	27.7	30.4	27.7	17.4	6.0	4.3
Personal care routines	9.6	21.7	34.9	26.1	42.2	26.1	13.3	26.1
Language-reasoning	13.3	39.1	32.2	34.8	31.3	17.4	22.9	8.7
Activities	36.1	69.6	39.8	26.1	24.1	4.3	0.0	0.0
Interaction	4.8	17.4	12.0	21.7	39.8	39.1	43.4	21.7
Program structure	19.3	52.2	22.9	17.4	26.5	17.4	31.3	13.0
Parents and staff	13.3	30.4	67.5	60.9	16.9	4.3	2.4	4.3

Table 2

Differences between public and private kindergartens.

Quality Subscale	Public (<i>n</i> = 84) <i>M</i> (<i>SD</i>)	Private (<i>n</i> = 23) <i>M</i> (<i>SD</i>)	<i>t</i> (105)
Space and furnishing	23.67 (13.57)	20.04 (12.01)	1.17
Personal care routines	20.72 (8.85)	19.91 (9.66)	0.38
Language-reasoning	17.59 (7.86)	11.95 (7.74)	3.06**
Activities	25.92 (14.35)	16.95 (10.76)	2.79**
Interaction	26.14 (8.36)	21.52 (9.82)	2.26*
Program structure	13.48 (6.10)	8.73 (7.02)	3.20**
Parents and staff	17.84 (7.44)	15.34 (9.11)	1.36

*
 $p < .05$.**
 $p < .01$.