# Education under five in Spain: A study of preschool classes in Seville

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This article presents the results of an assessment of the Quality of Infant Education done in the Seville area. Quality was defined in structural and process variables. Structural variables were the ratio, group size and training of teachers; process variables included classroom quality, assessed with the ECERS scale (Harms and Clifford, 1980), and educational practices, observed with OAP (Palacios and Lera, 1991). The sample was composed of 59 preschool units of five-year-old children. Data show a description of the structural and process variables of quality, the interrelations between both sets of variables, and differences in the quality of provisions offered by public and private sectors. The results indicate a general low quality of care and that there is a need for further improvement in the quality of day-care provision.

# Introduction

Education for the under fives in Spain is a high profile issue at the moment. Since the formulation of the LOGSE¹ in 1990, a new educational system has been designed. This new system guarantees the right to education for children between 0-18 years old, and is defined as having three educational levels: Infant Education (0-6), Primary School (6-12) and Secondary School (12-18). Infant Education is divided into two stages: the first level for children under three, and the second level for children three to six. Although Infant Education is not compulsory, it is now considered to be an educational stage that will support the children's psychological development (MEC, 1991). Infant Education is provided by public and private sectors. The public sector is composed of preschool units dependent on Educational Authorities, infant centres run by Welfare Authorities and, occasionally, Local Authority centres. The private sector involves centres dependent on the Catholic Church and other private initiatives. Whereas the first stage of Infant Education is provided, in the main, by the private sector (85%), the second level is mainly funded by the public sector (66%) (Munoz-Repiso, 1992).

Although the provision of education for young children has been an important issue generally for some time, in the 1990s the quality of this provision is assuming a greater importance (Clarke-Stewart, 1991; Melhuish, 1991; Moss & Pence, 1994; Phillips & Howes, 1987). According to Howes (Howes, Phillips, & Whitebook, 1992) quality can be defined with either

Measures

structural or process variables. Structural variables include child ratios, group size and the training of the teachers. These structural variables can be regulated. Process variables include the behaviour of the teacher and the provision of activities for the children. Process variables require interpretation and judgment by experts and are thus more difficult to regulate.

The quality of education provided by public and private sectors may differ. Structural variables in the public sector are regulated by the Authorities; they require a qualified staff member per group of eight to 15 children (for children under three), or 25 children (for children three to six) (MEC, 1989). Therefore it is assumed that public centres have quite similar structural quality. However, private centres are regulated by their individual policy and, consequently the qualifications of the staff, ratios and group size could vary from one centre to the next. Process variables are difficult to regulate and assess. Although an assessment of the quality of education is highly important, only a few attempts have been carried out in Spain (Palacios, 1989).

This project set out with the aim of assessing the quality of Infant Education (with particular reference to the role of structural and process variables), in both private and public sector provision. However, if we are to correctly interpret the results here presented, it is important to bear the following two caveats in mind. One is related to the implementation of the LOGSE, which was phased-in from 1992 onwards. The data on which this project is based was collected in 1991 and so it is possible that the situation described below does not correspond exactly with the current situation in Spain. Secondly, Spain is administratively composed of 17 different Regional Autonomous Governments, and the implementation of the LOGSE is not happening in parallel in all of them. This, obviously, increases the difficulty of making any general assessment of the overall situation of Infant Education in Spain. The data presented here relates to the provision of Infant Education in Seville in 1991. This province belongs to the Andalusian Autonomous Government.

The study analyses the quality of 59 preschool classrooms for 5-year-old children. Quality was defined in terms of the two variables, structural and process. Structural variables consisted of the ratio, group size and training of teachers. Process variables were studied looking at the quality of the classrooms and educational practices. The relationships between structural and process variables have been analyzed as well. Interpretation of the data is presented in two ways: 1) Quality of education for five-year-old children: structural variables, process variables and their interrelationship; 2) Quality of education provided by different sectors (public, private linked to the Catholic Church and private independent).

# Method

# Educational settings

To explain the selection of the sample, the contextual background of this research must be mentioned. This study belongs to a longitudinal project started in 1985; that project had as its aims the study of the quality of developmental contexts for young children. The sample was composed of 139 sets of parents, randomly selected from those who were having a baby in the main Hospital of Seville. Family contexts were studied twice, in that time (Palacios, 1988) and when the babies were two years old (Gonzalez, 1993). When these children were five, their school contexts were analyzed (Lera, 1994), these are the educational settings studied in this research.

The sampling procedure followed two steps: 1) the parents were contacted to find out if their children were attending school and the addresses of these schools; 2) the schools were invited to participate in the study (85% of schools agreed). Finally, the sample consisted of 59 settings, of which 66% were public centres run by Educational Authorities (39), 18% were private, run by the Catholic Church (11), and 15% private run by other initiatives (9).

Structural quality variables were assessed with the ratio (number of children per teacher in the class), group size and professional training of teachers. Process variables were assessed with two measures: the quality of the classrooms and educational practices. The quality of the classrooms was rated with the Early Childhood Environmental Rating Scale (ECERS) (Harms & Clifford, 1980), and the educational practices with an observational instrument (OAP) (Palacios & Lera, 1991).

The Early Childhood Environment Rating Scale, ECERS, is an instrument designed to give an overall picture of the environment of children and adults in preschool settings. It includes the assessment of use of the space, materials and activities to enhance children's development, daily schedule, and children's supervision. The ECERS consists of 37 individual items. Each can be rated as 1 (inadequate), 3 (minimum), 5 (good) or 7 (excellent). These items are organised into seven sub-scales: (1) Personal Care routines, (2) Furnishing and Display, (3) Language-reasoning, (4) Fine and Gross motor activities, (5) Creative Activities, (6) Social Development, and (7) Adult needs.

Observation of the Activities in Preschool, OAP, is a time-sampling observational instrument developed for describing educational practice. Teachers and children are observed to know how they spend a typical morning in the school. OAP is composed of three categories relating to the teacher's activities (role, relations towards children and organization of the space), and four related to children's activities (content of activity, type or structure, execution and expression required). Each of these categories is defined by different labels; for example, "role of the teacher" is composed of structuring activities, supervising, sharing the activity with the children, arranging materials and absence. The observation procedure requires a trained external observer who must observe the teacher and child-target during one minute; after that he or she must identify a predefined label in each category and mark them on the Registration Sheet. OAP requires to take the observations in a typical school day; therefore, special events (e.g., Christmas parties or trips) cannot be observed, and consequently the observer would return at a later date. Observations should focus at least two target-children of the same age but different sex. The observations moments have to be spread out during the whole day, and at least twelve observations per class should be taken (more detail in Palacios & Lera, 1991).

# Procedure.

Data collection required visiting the classes during a typical day, when the ECERS scale and the OAP observational grid were simultaneously administered. The observations of children's activities took place twelve times, the first observation being fifteen minutes after the children arrived and the last fifteen minutes before their departure. The other ten observations were spread out during the school-day excluding break-times (see Lera, 1994).

#### Results

# Structural variables

The ratio of teachers to children has been considered a typical indicator in the study of quality in the classroom (Ruopp, Travers, Glantz, & Coelen, 1979). Its association with other aspects, such as better adult-child interaction and less anxiety on the teachers, has been frequently demonstrated (Howes, Phillips, & Whitebook, 1992; McGurk, Mooney, Moss, & Poland, 1995; Scarr, Eisenberg, & Deater-Deckard, 1994).

In this study the ratio was observed in the 59 settings visited. The average found was 25 children per teacher. Six classes had less than 20 children and 10 more than 30 (see Figure 1).

All the settings were staffed by a single adult; therefore, ratio and group size are consistent in this study.

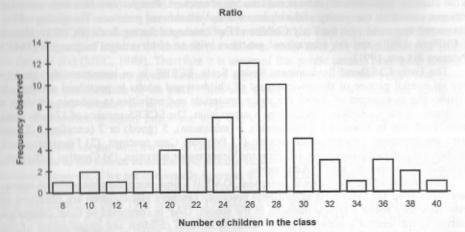


Figure 1. Ratio observed in the 59 classrooms

According to Sylva (Sylva, Roy, & Painter, 1980) three to five year-old children in classrooms with a ratio 1:5 and 1:7 had twice as many conversations with adults, and engaged in
more intellectually challenging activities compared with children in groups 1:8 or 1:10.
Considering that all the classrooms visited had lower ratios than 1:8, this will influence the
quality of adult-child interaction and the nature of the activities taking place in the classroom.
In fact, low ratios are particularly associated with greater numbers of adult-led activities
(Sylva, Roy, & Painter, 1980); therefore, it follows that children in these classrooms are likely
to receive a greater degree of adult direction and be involved in more structured activities.

The training of teachers has been proved to be related to the quality of adult-child interaction (Arnett, 1987; Goelman & Pence, 1987; Kontos & Fiene, 1987). Teachers with specific training in Early Education are more sensitive and responsive to children's needs and, consequently, have better interactions with the children. In this research, training was defined on two levels: 1) General Teaching Degree (three years of University studies) and 2) Specific training in Infant Education (Postgraduate course or special training as part of the General Teaching Degree). Of the 59 teachers in the sample, all but one teacher (who had no qualification at all) had the General Teaching Qualification, which allows them to teach in Infant and Primary Education. In relation to specific training, thirty-three teachers (57%) did not have any specific training in preschool education, whereas twenty-five (43%) did. Although most of the teachers were highly qualified (General Teaching degree), only 43% of them had specific training in education for young children. Training for the General Teaching Degree focuses mainly on formal education in the primary school, and, as such, may influence the approach taken by these teachers to the less formal world of infant education.

# · Process variables

To assess quality, many studies have used a global quality assessment instrument based on observational ratings such as the ECERS. The validity of the ECERS has been proved in several ways: first, by ratings of all the scale items by seven recognized experts; second, a comparison of expert opinions with scale scores; finally, considerable evidence from studies documenting the relationship of ECERS scores to child outcome measures and teacher process

variables attest to its validity (Goelman & Pence, 1988; McCartney, Scarr, Phillips, Grajeck, & Schwarz, 1982). The ECERS scores in the 59 classrooms were analyzed looking at the average achieved in the seven sub-scales (see Figure 2).

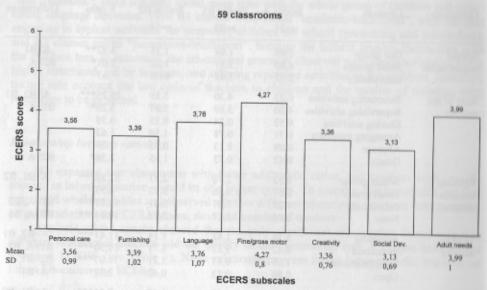


Figure 2. Mean scores of ECERS

The global average obtained in ECERS was 3.58, and the standard deviation 0.69. This indicates that the classrooms were relatively deficient in diversity and quantity, such as materials and activities. It should be mentioned that most of the classes did not have adequate home-corner areas, sand and water, blocks, or clothes for dressing up. On the other hand, materials to display fine-motor activities, prewriting and prereading were over represented. This could explain the higher score in the gross/fine motor subscale.

These results probably reflect a concern among teachers to stress the preparation of children for school, rather than to provide a balanced curriculum which, apart from the preparation for formal education, focuses on the development of social and creative skills.

A study of the quality of Infant Education requires an analysis of both children and teachers' activities. The quality of educational practice was defined by looking at both, the children's activities (variety and diversity) and the teachers' activities (role and interaction with the children). Children and teachers were observed during a typical morning in the class twelve times. Due to the late with drawal of one teacher the sample was reduced to 58 class rooms. The data was analysed statistically to reduce the quantity of information and isolate differences in educational practice. To do this, a classification analysis (quick-cluster) was carried out. The quick cluster performs clusters' analysis using an algorithm that can handle a large number of cases. The goal of this procedure is to identify relatively homogenous groups of cases based on selected characteristics. For example, here we could group educational practices into homogenous categories based on the scores in OAP. Initially a double classification was preferred and two profiles were obtained: profile A corresponding to 21 of the classes and profile B for the other 37. Group B was divided into two groups, B1 and B2, formed by 23 and 14 classes respectively. Then there were three different profiles concerning the educational practices: A, B1 and B2 with 21, 23 and 14 classrooms for each (for a more detailed analysis, see Lera, 1994). The next table (see Table 1) shows the data of the averages observed in each type of educational practice, and the differences between the groups.

Table 1 Frequencies observed in each Educational practices

		Educa	ational practic				
Categories	Contents	Profile A	Profile B1 n=23	Profile B2 n=14	F ratio	Differences	
Cantlel	One group	3.09	1.04	1.35	3.97**	A>B1	
Spatial	Small groups	4.00	3.47	1.08	3.01*	B2>A	
	Individually	2.72	3.45	0.00	.67		
Role of the	Structuring activities	6.23	4.30	3.35	10.75***	A>B2, B1	
teacher	Supervising activities		5.69	5.07	3.20*	B1>A	
teacher	Sharing activities	0.52	0.34	0.35	0.39		
	Arranging materials	0.71	0.78	1.50	1.62		
	Absence	0.09	0.13	0.35	1.29		
	Others	0.42	0.73	1.35	2.36*	B2>A	
Relation	Whole group	6.33	2.78	2.57	32.88***	A>B1, B2	
towards	Small group	0.57	0.56	0.92	0.37		
children	Individually	4.23	7.47	5.21	12.87***	B1>A, B2	
children	None	0.85	1.17	3.28	10.84***	B2>A, B1	
Type of	Attending	3.38	1.43	1.14	11.41***	A>B2, B1	
activity	Structured	6.42	9.17	6.71	10.50***	B1>A, B2	
	Semistructured	1.09	0.47	3.21	14.07***	B2>B1, A	
	Open	0.80	0,13	0.42	2.52*	A>B1	
Content of	Verbal language	2.85	1.47	1.50	8.06***	A>B1, B2	
activity	Pre-writing	2.38	3.95	1.14	8.52***	B1>B2, A	
	Plastic	1.95	2.52	5.57	14.68***	B2>A, B1	
	Math	1.80	1.86	2.21	0.14		
	Creativity	1.52	0.69	0.50	2.18		
	Others	1.47	1.47	1.07	0.37		
Execution	Collectively	5.28	2.95	2.21	21.37***	A>B2, B	
	Per groups	1.00	0.26	0.50	3.37*	A>B1	
	Individually	5.71	8.78	9.28	25.29***	B1>A B2>A	
Expression	Oral	4.09	2.30	1.57	14.93***	A>B2, B	
Expression	Plastic	5.90	8.04	8.92	16.31***	B1>A B2>A	
	Body	1.52	0.86	0.92	1.59		

Note. \* p<.05, \*\* p<.01, \*\*\* p<.001.

An analysis of the data observed in the type A classes, show that teachers usually organize the children into a large group, spending a considerable part of their time structuring activities and giving information to them (e.g., talking about daily events, story time, structuring activities, etc.), involving the whole group at the same time practising verbal-language activities, and requiring their oral participation.

Type B1 classes have teachers whose main role is to supervise and correct children's work, interacting with the children on an individual basis. The children's activities are highly structured, with an emphasis on prewriting skills carried out by children individually. In type B2 classes the children sit in small groups, the teacher's role is less clearly defined than in others, these kinds of teacher often spend significant amounts of time arranging materials or doing things unconnected with the children (such as walking around or talking with other adults). In these classes, children are more implicated in semistructured activities than the others, activities have a plastic content (such as drawing, pasting, cutting or modelling), requiring individual performance, and graphic expression.

Educational practices were labelled and put into categories: type A classes being named "less traditional" since teachers spend more time with the whole group of children and struc turing language activities. Type B1 classes were called "academic-traditional", with teachers engaging in typical activities for preparing children for school (prewriting and prereading); and B2 classes called "permissive-traditional", because the techers involve themselves with the children less. In summary, the educational practices observed were characterized as being highly structured, led by teachers, and offering repetitive activities to the children. However, taking into account the low ratio of teachers to children and the quality of training, such results are to be expected.

# Relationship between variables

We expected that classrooms with better adult:child ratios, and teachers with specific training in Infant Education, would be of a higher quality. To examine this hypothesis, we first correlated whole variables and observed whether different educational practices were connected with variations in ECERS scores, ratio and training of teachers.

Analysis of the results showed that the only significant relationship found was that between educational practice and the quality of the classrooms: type A classes have higher scores in ECERS (see Table 2). None relationships were found between ratio, training on Infant Education and ECERS.

Table 2 Relationships between variables

		ECERS				
Educational practices	n	M	SD	Ratio	Teachers with Specific Trainin	
A "less traditional"	21	3.93 a	.48	1:26	47%	
B1 "academic traditional"	23	3.31 b	.78	1:25	43%	
B2 "permissive-traditional"	14	3.59 b	.65	1:23	35%	

Note. Means with different letters are significantly different at p<.01.

A detailed analysis of the mean scores in ECERS showed differences between classroom quality and educational practice. The best scores corresponded to less-traditional classes. whereas academic-traditional had the lowest scores of all the subscales of ECERS (see Table 3).

Although the overall quality of the classrooms is quite low (3.58), and the general educational practices have a common traditional orientation, some differences could be observed; only the less-traditional classes have slightly better quality.

# Quality of Education provided by different sectors

The final step of our analysis explored the nature of classrooms belonging to different sectors (public, private linked to Catholic Church and private independent), looking at differences in the ratio, training of the teachers, quality of the classes and educational practices (see Table 4). We observed the ratio in the different types of classrooms. Preschool classrooms belonging to the independent private sector had the best ratio (less than 20 children per teacher), public sector classes had between 20-30 children, and those dependent on the Catholic Church had the most overcrowded rooms (more than 30 children).

Table 3

ECERS scores and educational practices

The second second second second		Educational practices						
Colo el da Servicio de Servici	Less traditional (A) n=21		Academic traditional (B1) n=23		Permissive traditional (B2) n=14		Significant differences (ANOVA)	
ECERS subscales	M	SD	M	SD	M	SD	F ratio	Groups
1. Personal care	3.87	.85	3.31	.83	3.59	1.2	1.80	inter Section
2. Furnishing display	3.76	.88	3.13	1.1	3.35	.84	2.22*	A>B1
3. Language activities	4.39	.94	3.33	.99	3.6	.95	6.86***	A>B1, A>B2
4. Fine/gross motor activities	4.6	.63	3.9	.91	4.3	.68	4.10**	A>B1
5. Creative activities	3.58	.70	3.22	.87	3.29	.60	1.30	
6. Social development	3.42	.54	2.89	.73	3.16	.75	3.29*	A>B1
7. Adults needs	4.11	1.2	3.84	.81	4.10	.99	0.48	erentifi teplan
Global Average	3.93	.48	3.31	.78	3.59	.65	4.89**	A>B1

Note. \* p<.05, \*\* p<.01, \*\*\* p<.001.

No significant relationship between training of the teacher and type of school was found. However, the distribution of teachers is worth comment. In the public schools, 49% of the teachers did not have specific training, in the private religious sector the percentage was higher, 63%, and in the independent sector even higher, 77%. Therefore, public sectors have more specialist teachers than the rest.

The quality of the classrooms (ECERS scores) was very similar in the different types of schools. Nevertheless, the better scores were obtained by the private independent sector (3.95) and the worst ones by the Catholic one (3.29). Significant differences between the types of classes were in fine/gross motor activities (private independent centres had higher scores than the Catholic ones, 4.75 versus 3.98) and creativity (3.92 versus 2.94).

No relationship between educational practices and type of provision (public sector, private independent and private Catholic) was found. Perhaps some tendencies can be taken into consideration, such as: slightly more classrooms traditional-academic in the public schools, rarely traditional-permissive in the religious sector, and equal representation of all of them in the private independent sector.

In summary, classes belonging to the public sector have around 24 children per class, half of them managed by Infant Education qualified teachers, the quality of the classrooms is minimum and, perhaps, some tendency to be academic-traditional. Classes belonging to the private religious sector have lower ratios (1:31), only 36% of them have specialist teachers, the quality of the classrooms is the lowest, and some educational practices tend to be less-traditional. Classes in the independent sectors, have the best ratio (1:20), the better quality (ECERS scores), but only 22% of teachers have specific training in Infant Education, and no tendency for one or another educational practices is observed.

Table 4

Type of settings and quality: ratio, staff training, classrooms and educational practices

				Quality of the classrooms (ECERS)		Percentages of Educational practices		
Types of settings	N	Ratio	Training of teachers	M	SD	A	В1	B2
Public sector	39	1:24	51%	3.59	.53	33%	41%	23%
Private religious	11	1:31	36%	3.29	.85	45%	36%	18%
Private independent	9	1:20	22%	3.59	1.0	33%	33%	33%

# Conclusion

The general quality of education provided for five-year-old children is low. Structural variables of quality, ratio and teaching training, were inappropriate: the ratio was too low (1:25), and the greater proportion of teachers did not have specific training in preschool education (57%). Process variables of quality, quality of the classrooms and educational practices, were neither adequate: quality of the classrooms was just above minimal (3.5), and educational practices were very traditional, heavily focused on improving preschool abilities and preparing children to go into the school system.

Interrelationship between process and structural variables has not been found; probably because all the settings visited were very similar. Related to the ratio, with the exception of ten classrooms (ratio higher than 1:20), the rest of them had in common the great number of children per adult. The training of teachers was also very similar, 95% of them were qualified Primary Teachers. Differences between teachers, in terms of specific training in Infant Education, did not correlate with any process variableswith neithes educational practices nor quality of the classrooms. It may be that the specific training in Infant Education given by the University has been too general in natural, and that differences between teachers with or without such training are irrelevant; or perhaps, there are external aspects of the school (such as philosophy, parents interests or teacher's independence for developing their own ideas about teaching) that force teachers to behave in the same way, independently of their former teaching training. Only one significant correlation involving process variables was found: classrooms with less-traditional educational practices had better quality. However, average quality was not, in absolute terms, very different; in fact, their average quality was just above minimum (3.6).

Overall, preschool children in Seville are in crowded classrooms, with minimal physical provision and materials. They spend most of their time sitting down, doing highly structured activities (drawing, cutting and prewriting). The whole-day activities are unbalanced, and social and creative activities are under-represented. Teachers are predominantly trained in Formal Education instead of Infant Education; however, teachers with a specialist training were no different in practice to other. In order to generalise these results, it should be remembered that data collection for this research project started a year before the implementation of LOGSE, and the current situation may be different. Nevertheless, preliminary results of a new Spanish project, are not showing any relevant change in terms of ratio, training of the teachers, educational practices and classroom quality (Palacios, 1995).

Differences between the quality of provision in different sectors, showed that those classrooms belonging to the public sector had similar structural quality; whereas, differences were
found in classes belonging to the private sector. In fact, all public classes had a ratio of 1:25,
and the proportion of teachers with specific training in preschool education was the highest.
Classes belonging to the private sector were more heterogeneous; the ratio oscillated from 1:8
children to 1:40 per class, and the percentage of qualified teachers was lower than in the public sector. Process variables were quite similar in both sectors (public and private), with slight

differences in classroom quality. Nevertheless, classes belonging to independent private sectors had slightly better quality than classes in the public sector, and these were slightly better classes belonging to the Catholic sector. Educational practices observed were very traditional; probably, the old historical tradition of preschool education in Spain could explain this strong adult-led orientation.

In conclusion, it seems that structural variables of quality, ratio and training of teachers, should be regulated and also reconsidered by Authorities. On the basis that an educational approach to children's needs is desirable, Authorities should reconsider the established ratio (1:25) and increase the number of adults in the classes. Training of teachers in Infant Education should be reviewed by Authorities and by researchers; more attention must be paid to the quality of Infant Education Training and the appropriateness of educational practices developed in the classrooms. Process variables of quality (educational practices and quality of the classrooms) need to be seriously improved; educational practices should be more child oriented, and classrooms need more materials. Children need to carry out a diverse and balance set of activities, for encouraging their whole development, including social, emotional, creative, physical and cognitive skills.

Finally, results of this research indicate that the new regulation for Infant Education in Spain was an urgent issue. The LOGSE recognises that the education for under five is a genuine level with its own characteristics and intrinsic values; however, basic provisions need to be improved in order to put these principles into practice (change in the ratio, materials and activities available, regular professional training). Although the LOGSE is a positive and unique frame of reference for Infant Education in Spain, a decisive commitment is also necessary to implement it completely and improve the quality of the education provided for young children.

#### Notes

LOGSE: Organic Law for the General Ordering of the Educational System, passed in both houses of the Spanish parliame.

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Cet article présente les résultats d'une évaluation de la qualité de l'éducation préscolaire dans la région de Séville. La qualité a été appréciée à l'aide de variables concernant la structure et le fonctionnement des établissements. Les variables de structure retenues ont été le taux d'encadrement, la taille des groupes et la formation des enseignants; les variables de fonctionnement ont concerné la qualité de la classe comme l'environnement éducatif (évaluée par l'échelle ECERS de Harms & Clifford, 1980) et les pratiques éducatives observées (grille OAP de Palacios & Lera, 1991). L'échantillon était composé de 59 classes préscolaires d'enfants de 5 ans. Les données concernent les deux types de variables et de leurs relations ainsi qu'une comparaison entre le secteur privé et le secteur public. Les résultats montrent que le niveau de qualité est en général assez bas, que les dispositions légales introduites récemment étaient indispensables et que des progrès sont encore à réaliser dans la qualité de la prise en charge institutionnelle des jeunes enfants.

Key Words: Assessment of quality, Educational practices, Preschool education.