Pre-Service Teacher's Attitudes toward the Role, Value, Utility, and Contribution of Nurseries

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Abstract

The theme of our project is care and treatment infants receive in nurseries. More specifically, the objective of the study was to investigate the attitudes of pedagogical departments' students toward the role, value, utility, and in particular, contribution of nurseries. The sample consisted of 61 students of the Department of Early Childhood Education School University of Western Macedonia, Florina and 105 students of the Department of Educational and Social Policy, University of Macedonia. To illustrate the results, techniques of multivariate statistical analysis were used which showed that the area of the nursery operates not only as a space of babysitting but plays an important role in shaping a healthy infant's personality, as well.

Introduction - Literature Review

It is a fact that initially nurseries were a shelter which allowed employees to confide their children in a safe environment during their work time. But the nursery, which is identified to the collective consciousness as a space of group babysitting is not just this, but it is a place which offers the cultivation and development of children's ability and is a valuable help to their socialization. In ancient Greece, one of the first major educators who emphasized the value of the nursery was Plato who argued that the infant is able to develop physically, socially and mentally through the game in the space of nurseries. Other pedagogists, who followed Plato's ideas, were Aristotle and Plutarch who emphasized the value of storytelling and reading fairy tales with moral. Foreign educators such as John Locke, Jean Jacques Rousseau and Maria Montessori also dealt with the right training and conduit means that should be provided by a nursery. Nowadays surveys as the surveys of Marsh, C. (1995) are conducted on quality relationships and quality practice in the nursery school. Sylva et al. (2010) continues to support the value of the nursery as a training center for babies with various treatments such as the game and fairy tales in order to develop the infant's intellectuality and socialization.

These surveys are complemented by corresponding surveys of Pantazis et all. (2007), Balleyguier (1991), Bjurek et al. (1992), which recorded how the nurseries work depending on the country in which they are and on the means of treatment used individually. Other studies such as that of Makraki, (1998) emphasized the value of the use of technological means at nurseries.

According to the research, there are three categories of approaches that can be used: The " technocentric " or " vertM JKL;/LKJHGTHYJOLK ical " approach which focuses on using the computer as a an independent module, the " integrated " or " horizontal " approach where the use of the computer incorporates the individual modules of the program and finally the " disposable-mixed " or the " pragmatic " approach that uses the computer as a tool to support the independent course. These approaches are related to the understanding and mastery of knowledge provided by individual teaching ability and assessment of knowledge and skills of the young child (Raptis, 1998). These studies are complemented by the surveys of McCraw and Meyer (1995) and DeVoodg and Kritt (1997), Rodriguez S., (1997) also expressed the desire of many educators for more use of the computers during the lesson for better understanding of the knowledge offered.

Encouraging children to turn to Natural Sciences is equally important as resulting from investigations of Gelman S. A. (1998), Concept development in preschool children, *Dialogue on early childhood science, mathematics, and technology education*, Washington, DC: project 2061, American Association for the Advancement of Science, Johnson, J. R. (1998), Ravanis, K. & Bagakis G. (1998), Ravanis. (1994), Chatzinikita, et all.,. (1996), Apostolidou, et all., (2000), Kagan, (1992), Kalleri & Psillos (2001). It is important and interesting for children after observation and acquisition of some knowledge to get the chance of a real study on this issue through appropriate activities that are recorded in surveys of Ravanis (1996), Ravanis & Bagakis (1998), Voutsina & Ravanis (1998), Apostolidou, M., Asvesta, E. & Ravanis, K. (2000). Through the analysis of all the above, the literature we used and the completion of the questionnaires by students of two pedagogical departments, we concluded our research on the nursery's offer in shaping the cognitive, social, emotional world of the infant's personality.

Research Methodology

Sample. The sample consisted of 166 students of two pedagogical departments, the Department of Early Childhood Education University of Western Macedonia and the Department of Educational and Social Policy, University of Macedonia, Greece. The Department of Early Childhood University of Western Macedonia aims at training students, future kindergarteners while the Department of Educational and Social Policy, University of Macedonia aims at training students who will work for the education of children with special needs or continuing education. More specifically, 61 (36.7%) are students of the Department of Early Childhood in Florina and 105 (63.3%) of the Department of Educational and Social Policy, University of Macedonia. 22 out of the 166 respondents (13.3%) are male students and 144 (86.7%) are female students. 61 (36.7%) students are freshmen, 85 (51.2%) are sophomore, 15 (9%) are third-year students, 2 (1.2%) are fourth-year students and finally 3 of them (1.85%) are graduate students. Regarding the age of the surveyed students, 53 of them (31.9%) are 18 years old, 76 of them (45.8%) are 19, 26 of them (15.7%) are 20, 3 of them (1.8%) is 21, one (0.6%) is 22, one (0.6%) is 23, one (0.6%) is 25, one (0.6%) is 27, one (0.6%) is 28, one (0.6%) is 30, one (0.6%) is 32 , one (0.6%) is 38 years old.

Questionnaire: The survey questionnaire consists of 24 questions. Four of these questions concern the demographics of the social subjects of research like sex, the department attended, year of study and finally, age. The remaining 20 questions detect the surveyed students' beliefs on the nursery's offer, its operation, and finally the school infrastructure.

Methodology of analysis. This stage was the field research. The sampling took place during October and November of the academic year 2011. During these months 166 valid questionnaires were collected. The sample size is very satisfying because it is eight times the questions of the questionnaire (Hair et al., 2005; Coakes et al., 1999, p.157). To control the factorial validity of the structure or the construction (Carmines et al., 1979, Bryant 2000) of the proposed measurement scale, the Principal Component Analysis was applied - Principal Components Analysis (Kim et al., 1978, Norusis 1992). Axis rotation was performed by using Varimax (Rotation of maximum variation). This means that the agents (components) that were exported are linearly uncorrelated. The criterion of eigenvalue or characteristic root (Eigenvalue) over 1 was used to determine the number of the factors remained (Sharma 1996, Hair et al., 1995). Then the reliability of questions on this sample was calculated with the help of coefficient "a "of Crondach's and the principal components analysis was applied (PCA) with Varimax rotation to determine whether the agents are in accordance with the theoretical model.

SAMPLE suitability indicators used are: a. the Kaiser-Meyer-Olikin (Kaiser-Meyer-Olikin Measure of Sampling Adequacy) (KMO) (Kaiser, 1974). to test whether the data were suitable to undergo factor analysis and b. sphericity index of Bartlett's (Bartlett's test of Spherisity), which controls whether the correlation matrix of variables involved in the analysis differs significantly from the unit and therefore it makes sense to analyze the data. Regarding the Statistical analysis of the survey data, we applied the program Statistical Package of Social Sciences (S.P.S.S.) Version 11.5. For the whole analysis 5% was defined as the level of significance, ie p=0.05 level, besides controlling sphericity significance level that was defined as 1% ie p = 0.01 level.

Results

The indicator of the adequacy of the sample KMO=0.737>0.60 showed that the sample data were fit to undergo factor analysis and control sphericity Bartlett's (x2 = 666.911, df = 210, p <0.01) also showed that principal components analysis is meaningful. (Bartlett's). In this analysis the data were grouped according to their correlation with the aim to capture those factors that describe more fully the attitudes of respondents to the subject of the survey.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,737
Bartlett's Test of Sphericity	Approx. Chi-Square	666,911
	df	210
	Sig.	,000

The analysis (Table 2) revealed four uncorrelated factors that explain the 66,019% of the total inertia of the data.These factors are described separately below.

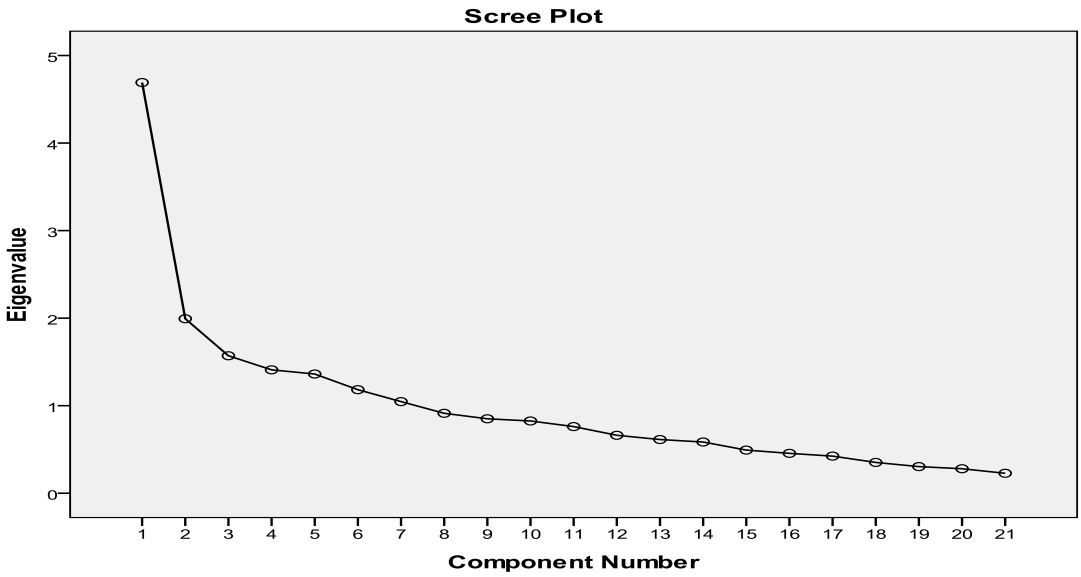
Table 2: Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,691	22,338	22,338	4,691	22,338	22,338	3,095	24,737	24,737
2	1,993	19,492	41,830	1,993	19,492	41,830	2,460	21,714	46,451
3	1,570	7,477	49,308	1,570	7,477	49,308	2,076	19,884	56,335
4	1,409	6,712	56,019	1,409	6,712	56,019	2,034	9,684	66,019
5	1,362	6,484	62,503						
6	1,183	5,631	68,135						
7	1,046	4,983	73,118						
8	,913	4,347	77,465						
9	,850	4,049	81,515						
10	,825	3,930	55,444						

Extraction Method: Principal Component Analysis.

The Scree Plot graph: The graph below making a graphical representation of the eigenvalues, leads us to determine the number of substantive factorial axes.



The above graph shows a distinctive break up until the fourth factor whereas after the fifth it follows a nearly linear portion of the curve of eigenvalues. So, considering the eigenalues which for the eight factors are more than one (3.095, 2,460, 2,076, 2,034) for the 1st, 2nd, 3rd and 4th respectively), affirming that they interpret the data satisfactorily (Anastasiadou et all, 2011).

The coefficient of internal consistency (reliability) Crobach's a is statistically significant and equal to 70.43% for all the questions and therefore the scale of 20 questions was considered reliable in the sense of internal consistency (Croanbach, 1984). The reliability coefficient (Crobanch's a) is statistically significant and equal to 71.98%, 73.56%, 69.07%, 70.35% for the first, second, third, fourth factorial axis respectively. Finally, the values of the common factor variance (Communality) for each question lead us to the fact that most of them have a value greater than 0.50 which indicates satisfactory quality of the measurements from the model - model of the 4 factors - components (Hair et al., 1995).

Table 3: Communalities

Communalities

	Initial	Extraction
q1	1,000	,542
q2	1,000	,398
q3	1,000	,667
q4	1,000	,662
q5	1,000	,693
q6	1,000	,665
q7	1,000	,725
q8	1,000	,601
q9	1,000	,494
q10	1,000	,593
q11	1,000	,605
q12	1,000	,550
q13	1,000	,570
q14	1,000	,579
q15	1,000	,623
q16	1,000	,546
q17	1,000	,594
q18	1,000	504
q19	1,000	,551
q20	1,000	,544

Extraction Method: Principal Component Analysis.

In particular, according to the placement of students, as revealed by the factor analysis, the first axis-factor F1 with 3,095 Eigenvalues, that explains, after rotation Varimax, 26.32% of the total variance is loaded mainly by questions q7, q6, q8, q1 , q12 and with very high loadings (0.812, 0.715 0.664, -0.652, 0.353, respectively). The factor F1 captures the views of the nursery which declare that: the nursery offers learning principles and values (q7), growth and development of the child's ability are offered in nurseries, in nurseries the child exploits the emotional world (q8), the nursery is not just for safekeeping (q1a), in nurseries there is active participation of the child in the events (q12). Therefore this factor can be characterized as a factor of development of the emotional world of the child. The reliability factor is a = 0.7198 and is particularly satisfactory.

Table 4: Results of Principal Component Analysis

Rotated Component Matrix[a]

	Component			
	1	2	3	4
q7	,812			
q6	,715	,302		
q8	,664	,345		
q1	-,652			
q12	,353		,312	
q2		-,613		
q10		-,572		
q9	,357	,541		
q16		,538		
q18		,444	,373	
q20		-,382		
q15			,769	
q14			,611	,307
q13	,517		,535	
q19		,340	,498	
q5			-,309	
q17				,691
q11		,313		,689
q4				-,590
q3	,332	-,420		,533

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

In the second factor F2 with eigenvalues 2,460, explaining 21,714% of the total variance questions q2, q10, q9, q16, q18 and q20 are loading with high loading (-0.613, -0.572, 0.541, 0.538, 0.444, -0.382 respectively).
The second factor F2 consists of the students' denotations about what exactly takes place in the nursery. These statements argue that the nursery guarantees the provision of modern educational programs (q2) so that not only does physical relief of the child take place(q10) but linguistic awakening (q9) and preparation of the child for entering the school environment (q16) happen as well, because the kid in the nursery learns to communicate with other children(q18) and consequently it can be prepared for the learning school environment(q20). These statements show that students of both pedagogic departments highlight the nursery as a factor of integration into the school environment, which constitute the axis F2. The reliability of the factor is a = 0.7356 and is also very satisfactory.

The third factor F3 with eigenvalue 2,076, which explains the 19,884% of the total variance questions q15, q14, q13, q19, q5 is loaded with high loadings (0.769, 0.611, 0.535, 0.498, -0.309), respectively.

The third factor F3 consists of the statements of students who say that the children in the nursery freely express themselves through painting (q15), reading stories and/fairy tales in nurseries is a benefit for language development (q14) and helps to boost children's self-esteem because in the station they undertake various initiatives (q13) that lead to learning order and discipline rules(q19) and in no case they constitute an emergency solution for working parents(q5).

The third factor F3 outlines the views of students who demonstrate the nursery as an agent of self-expression and language development showing that painting and reading fairy tales are the principal means of education to infants up to 6 years old. (The reliability of the third factor is a = 0.6907 and is satisfactory)

The fourth and final factor F4 with eigenvalue 2,034, which explains the 9,684% of the total inertia of the data, is constructed and interpreted by the questions q1b,q11,q4,q3 with high loadings (0.691, 0.689, -0.590, 0.533, respectively).

The fourth factor F4 consists of the statements of students who argue that the nursery is a center for Early Childhood Education (q1b), a pre-socialization of the child (q11) and that the secondary socialization of the child begins with entering the nursery (q4) although the nurseries do not always have appropriately structured and equipped spaces(q3).

The fourth factor F4 refers to students' views that demonstrate the nursery as a significant center of social and pedagogic education. The reliability of the fourth factor is a = 0.7053 and it is satisfactory.

Analysis of Students' Results towards Nurseries

1.Utilization factor of the emotional world of the child

Results: To process the data we used the total scores of the above set of questions in order to obtain the level of agreement and the standard deviation of each group. At this point we should mention that these groups emerged from Factor Analysis. Also using the statistical tests t-test and ANOVA with post-hoc audits for independent samples and with dependent variable the values of the axes-groups we examined whether the variables that examine gender, year of study, age and part of the 166 students of both pedagogic departments affect their views on the role and function of the nursery. The reliability coefficient (Crobach's a) for all the statements-questions in the questionnaire are statistically significant and equal to 70.43%. The first group consists of five questions relating to the exploitation of the emotional world of the child and they are the following five questions that are presented in Table 5.

Table 5. Exploiting the emotional world of the child.

Exploiting the emotional world of the child.	$\bar{X}$=19,23	sd=3,377
q7. The nursery offers learning principles and values	3,63	,883
q6.In nurseries growth and development of the child's ability are offered.	3,90	,857
q8.In nurseries the emotional world of the child is exploited	3,72	,793
q1a.The nursery is just for baby sitting	2,03	,904
q12.In nurseries there is active participation of the child in the events	3,70	,724

The reliability (Crobach's a) of the first group is a = 0.7198 and it is satisfactory. The social subjects of this study express a high agreement with statements regarding the significance level of the first group because the average level of this group is $\bar{X}$=19.23 (sd=3.377) (Table 5). More specifically, regarding everything related to the utilization of the emotional world of the child, the respondents argue that the nursery offers learning principles and values ($\bar{X}$=3.63, sd=0.883) (q7). According to the respondents' answers, it is apparent that the nursery offers cultivation and development of the child's competences ($\bar{X}$=3.90, sd=0.857) (q6), and the child's emotions are developed ($\bar{X}$=3.72, sd=0.793) (q8). In no case is the nursery just for babysitting ($\bar{X}$=2.03, sd=0.904) (q1). And finally, the student respondents argue that in the nursery there is active participation of the child in the events ($\bar{X}$=3.70, sd=0.724) (q12). Using statistical tests t-test and ANOVA with post-hoc audits for independent samples and with the values of the axes-groups as the dependent variable we found that the variables that examine gender (t = 3.082, df = 164, p = 0.002 <0.05) and year of study (F = 2.621, df = 4, p = 0.037 <0.05), affect teachers' views on making use of the emotional world of children in the nursery. More concrete in terms of gender, female students appear to be more strongly convinced that within the nursery there is emotional development of the child up to 6 years old (F=20.26, sd=3.336) than their fellow students (M = 18.63, sd = 3.268).

Contrary, the part (t = -0.002, df = 164, p = 0.998> 0,05) and age (F = 0.907, df = 11, p = 0.535> 0.05), do not affect the views of teachers surveyed on making use of the emotional world of children in the nursery.

2. Factor incorporation into the school environment.

Results: The second group consists of six questions relating to the inclusion of children up to 6 years in the school environments which are as follows and are presented in Table 6.

Table 6: Inclusion in the school environment

Inclusion in the school environment	$\bar{X}$=19,27	sd=1,882
q2. The nursery guarantees the provision of modern trained programs	2,75	,911
q10. In nurseries only physical relief of the child is carried out	2,30	1,069
q9. But linguistic waking happens	3,61	,952
q16. The child is preparing for entering the school environment	4,07	,756
q18. The child in the nursery learns to communicate with other children	4,26	,651
q20. The child in the nursery prepares for the learning school environment	2,28	,996

The social subjects of this study express a relatively high agreement with statements regarding the degree of significance of the first group because the average level of this group is $\bar{X}$=19.27 (sd=1.882) (Table 6). Most notably as regards the incorporation into the school environment and whether the nursery guarantees the provision of modern educated programs, a moderate agreement is expressed ($\bar{X}$=2.75, sd=0.911), and disagreement regarding whether the nursery offers only physical relief to the child ($\bar{X}$=2.30, sd=1.069). Instead, there is an agreement on whether the nursery helps the linguistic awakening ($\bar{X}$=3.61, sd=0.952), high agreement on whether the child is prepared for entering the school environment ($\bar{X}$=4.07, sd=0.756), and even higher agreement on whether the child in the nursery learns to communicate with the other children ($\bar{X}$=4.26, sd=0.651). Conversely, there is disagreement as regards the argument that the children in the nursery can't be prepared for the learning school environment ($\bar{X}$=2.28, sd=0.996).

Using statistical tests t-test and ANOVA with post-hoc audits for independent samples and the values of the axes-groups as the dependent variables we found that the variables that consider the gender (t=1.859, df =164, p=0.065>0,05), (t = -0.014, df = 164, p = 0.989> 0,05), age (F = 1.406, df = 11, p = 0.175> 0,05) and year of study (F = 0.948, df = 4, p = 0.438> 0,05), do not affect the views of potential teachers surveyed on integration into the school environment through nurseries.

3. Factor of self-expression and language development

Results: The third group consists of five questions relating to Self-expression and language development and are as follows, presented in Table 7.

Table 7. Self-expression and language development

Self-expression and language development	$\bar{X}$=19.35	sd=2.261
q15. The child in nurseries is freely expressed through painting	4.21	0.695
q14. Reading stories / fairy tales in nurseries is a benefit for language development	4.27	0.646
q13. The nursery helps to the development of the self-esteem of children for undertaking various initiatives	3.66	0.844
q19. The children in the nursery learn the rules of order and discipline	3.89	0.827
q5. The nursery is a resort for working parents	3.33	1.046

The reliability (Crobach's a) of the third group is a = 0.6907 and it is satisfactory. The results of the investigation of the third group of statements about Self-expression and language development have shown that students respondents express a high agreement with the statements of the group because the average level of this third group is $\bar{X}$=19.35 (sd=2.261) (Table 3).

More specifically the potential teachers who were asked,express high agreement as regards the child's freedom of expression through painting in the nursery ($\bar{X}$=4.21, sd=0.695), and the benefits for language development by reading stories / fairy tales in the nursery ($\bar{X}$=4.27, sd=0.646). Highly agreement is expressed by students respondents in everything pertaining to the nursery contribution to developing the self-esteem of children as undertaking various initiatives ($\bar{X}$=3.66, sd=0.844) and learning rules of order and discipline ($\bar{X}$=3.89, sd=0.827), while they keep a neutral attitude regarding whether the nursery is a resort for working parents ($\bar{X}$=3.33, sd=1.046).

Using statistical tests t-test and ANOVA with post-hoc audits for independent samples and the values of the axes-groups as the dependent variables we found that variables that examine sex (t = -0.676, df = 164, p = 0.5> 0.05), department (t = 0.333, df = 164, p = 0.740> 0,05), age (F = 1.048, df = 11, p = 0.408> 0,05) and year of study (F = 0.210, df = 4, p = 0.993> 0,05), do not affect the views of potential teachers surveyed in terms of self-expression and language development in the nursery.

4. Factor of preschool education

Results: The fourth group consists of 4 questions relating to the Factor of early childhood education and is as follows and is presented in Table 8.

Table 8. Factor of preschool education

Factor of preschool education	$\bar{X}$=16,63	sd=1,930
q1b. The nursery is a center of preschool education	3,80	,767
q11. The nursery is a good start for socialization	4,03	,726
q4. Secondary socialization of the child doesn't begin with entering the nursery	2,37	1,053
q3. The nurseries do not always have appropriate configured and equipped spaces	3,67	,916

The results of the investigation of the fourth group statements regarding the factor of the preschool education showed that potential teachers express a high agreement on the statements of the group because the average level of this fourth group is $\bar{X}$= 16.63 (sd=1,930) (Table 8).

More specifically, potential teachers surveyed express their high agreement in terms that the nursery is a center for early childhood education ($\bar{X}$=3.80, sd=0.767) and a good start for socialization ($\bar{X}$=4.03, sd=0.726). On the other hand, they express low agreement regarding the question whether the secondary socialization of the child begins with entering the nursery ($\bar{X}$=2.37, sd=1.053). Finally, agreement is highly expressed through the responses of the surveyed students of both pedagogic departments, the Department of Early Childhood Education School, University of Western Macedonia and the Department of Educational and Social Policy, University of Macedonia regarding that the nursery does not always have appropriate configured and equipped spaces ($\bar{X}$=3.67, sd=0.916).

Using statistical tests t-test and ANOVA with post-hoc audits for independent samples and values of axes-groups as the dependent variables we found that the variables that examine the department (t=-3.557, df=164, p=0.00<0.05) and the year of study (F=3.746, df=4, p=0.006<0.05) affect teachers' views with regard to the factor of preschool education.

More specifically, with regard to the Department, students from the Department of Educational and Social Policy seem to occur more strongly convinced that the nursery is a factor of preschool education for children up to 6 years old ($\bar{X}_{\varepsilon\kappa\pi}$=17.02, sd=1.891), than their fellow students from the Department of Early Childhood ($\bar{X}_{\nu\eta\pi}$=15.95, sd=1.820). Conversely, gender (t=-1.939, df=164, p=0.054>0.05) and age (F=1.196, df=11, p=0.294>0.05), do not affect the views of potential teachers surveyed regarding the factor of preschool education.

Conclusion

The project provides some very important aspects of the Kindergartens importance and role in today's society. More specific today's Kindergartens redound the spiritual and psychological health of children. Furthermore abilidence of them come into the light and improvidence can be observed. Their amelioratence in the society's accommodation is an undisputed fact. Kindergartens improve their knowledge, consummate their characters and make it easier to continue successful at a primary school. In light of this evidence, the role of today's Kindergarten is more important and complex than ever before. They underlay the groundwork for a Childs successful life and career.

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