A Comparison of Classrooms' Layout Based on The Requirements of Preschool Literacy

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Abstract

Classroom design has claimed to be an important factor in supporting the pre-schoolers' literacy development. While many studies had focused on improving the overall environment of the classrooms, few studies are established with the focus on design characteristics that enhance early literacy. Comparative studies that reveal similarities and differences of design in different contexts and culture would be a significant attempt to provide a knowledge about the proper physical environment for literacy. This study is set out to compare the appropriateness of classroom design in two private and two public preschools in North Cyprus, by evaluating the necessary design characteristics for literacy activities. The study proceeds by developing an evaluation framework that analyses the design characteristics of classroom in terms of literacy learning, then followed by evaluating the design of each classroom by using this framework. The study is finalized by comparing the findings and discussing the similarities and differences of design in examined classrooms. Findings revealed that the layout of private classrooms were more literacy-oriented in compare to public classrooms, however in none of the classrooms there was any records of specific design considerations with the focus of literacy. In general, it was concluded that in all four classrooms layout of the classrooms lacked a

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sensitive design with concern of literacy activities. Results also demonstrated that only focusing on classroom will not be enough and considering the support for learning literacy in all the available spaces in preschool will establish more comprehensive results.

INTRODUCTION

Physical space of preschool classroom plays a significant role on defining the quality of literacy learning activities and there are studies that claim physical environment has a crucial role on children's behavior as well as their education (Maxwell & Evans, 2002, Lundquist, Kjellberg & Holmberg, 2002, Södersten, Granqvist, Hammarberg & Szabo, 2002). It is demanded that without an appropriate planning and organized environment, providing a successful literacy education for pre-schoolers will be difficult (Hart & Risley, 1995, Dickinson & Tabors 2001, Dickinson & Sprague 2002, Morrow, 2002, Cunningham, 2005, McGee & Morrow, 2005, Morrow, Roskos, & Gambrell, 2015). Regardless of the importance of physical space in improving the quality of early literacy development, it has been claimed that physical environment of the classroom is generally considered as background scenery and most of the concerns is given to pedagogy and interpersonal factors (Marrow, 1990).

Improving the design quality of classrooms to provide effective literacy is nearly now a universal goal, but achieving this goal requires assessments with a thoughtful focus on characteristic of the physical space. While a large amount of research has focused on testing the effect of changing the organization of the classroom, a few researches had concentrated in studying the design characteristics that improve the learning environment of the classrooms (Cortes, 2013).

Creating a framework that evaluates the design characteristics of the classroom by considering the pedagogical requirements would be a significant attempt to provide a knowledge about proper physical environment for literacy. This study aims to compare four different preschool classrooms by evaluating the appropriateness of their design characteristics for a quality literacy environment. The study proceeds by developing an evaluation framework that evaluates design characteristics of a preschool classroom in terms of literacy learning, then followed by using this framework to measure the differences between public and private preschool classrooms in North Cyprus. Finally, the results will be discussed to find out the similarities and differences in terms of design in examined classrooms.

Background of the Research

A growing body of studies indicate the importance of literacy practices in preschool age for children to become skilled reader in their future and therefore the number of empirical researches that focus on improving children's early literacy instructions and practices is increasing (Lonigan, Allan & Lerner 2011). Huge number of literacy researchers addressed that social context had an important influence on literacy practices and since the place is always been part of this social context, the impact of place on literacy practices is undeniable (Graff 1991, Street 1995, Heath's, 1983 (cited in Nichols 2012)).

Lawn (1999, 78) defined the classroom as combination of "hard-ware and soft-ware". According to him hard-ware referred to physical structure of the space and soft-ware referred to the learning experiences operating within the physical structure, but Nichols and Nixon (2013) claimed that, existing literature related with early literacy had mainly considered the soft side of a classroom. Existing checklists and assessments such as 'Early Literacy Assessment Systems: Essential Elements', 'Early Language and Literacy Classroom Observation ELLCO', 'Preschool Educational Environment Rating System' and 'Literacy Rating Scale' items for evaluating children's developmental achievements in early literacy, mainly are related with soft-ware of the classroom while classroom's hard-ware remains un-noticed or at the background.

Geosemiotic analysis, which has been originally introduced by Scollon, Scollon and Wong Scollon (2003) as a framework to understand the meaning of signs and language by considering their physical and spatial context, has become a new methodology in early literacy and it. The bright side of geosemiotic analysis is that, this method does not only focus on 'what' has been doing related with literacy, but also it focusses on 'where' these practices are taking place (Albers, Holbrook & Flint 2014). Since geosemiotic analysis considers physical dimension of the space, researchers started to use the principles of this methodology in architectural researches. Nichols (2014, 184) classified the geosemiotic's layers of meaning for architectural studies as semiotic of place (Meanings produced through physical environment including zones, areas, pass ways, seating and etc.), visual semiotic (the placement and visual qualities of objects and materials) and interaction order (the relation and impact of semiotics of place and visual semiotics with social interaction and practices). From the time Scollon, Scollon and Wong Scollon (2003) has established Geosemiotic analysis method, the number of studies that use this method remains few and this might be due

to the considerable amount of time geosemiotic analysis requires for a proper evaluation.

Parallel with the scope of geosemiotic but with a closer focus on design characteristics of the space and less amount of time for evaluation, Shirin Izadpanah (2016) proposed post occupancy evaluation for preschool settings' interior space (PSIS) model that includes a systematic structure for quick evaluation of preschool spaces' design quality. Design characteristics that are considered in the structure of this model was established based on the common patterns of preschool learning experiences. Post occupancy model's section related with preschool's literacy centre include design characteristics that are necessary for supporting common patterns of learning experiences during preschool literacy. The structure of this model is useful since it is up to date, studies mainly focused on suggesting design requirements of spaces for a better early literacy learning, while there is also a need for evaluating the condition of existing preschool classrooms by considering suggested design requirements.

Studies claim that improving the quality of educational spaces requires understanding of leearning and education (Gifford's, 2002, Boys, 2010 & Hill, 2011). In this aspect, the intention of current study is to compare the appropriateness of classroom design in two private and two public preschools in North Cyprus, by evaluating the presence of necessary design characteristics for pre-school literacy learning. Asking teachers' idea about design characteristics of their classroom for literacy activity is one of the important concerns that was included in the structure of the evaluation model used in the current study. Studies claimed that in order to shape a better learning environment, it is crucial to take into consideration teachers' perspectives in design (Könings Brand-Gruwel & Merriënboer, 2005).

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METHODOLOGY

Design characteristics that are defined as items for evaluating the design of preschool literacy centre in 'Post Occupancy Evaluation model for PSIS' has been used to develop the evaluation framework for current study. Since 'Post Occupancy Model' suggests that it is necessary to consider teachers' indication and children's interactions during learning activities for evaluating the appropriateness of design, current study has developed an evaluation framework that would evaluate design characteristics of the classrooms by considering teachers' indications and children's interactions in the classroom. Figure 1 shows the

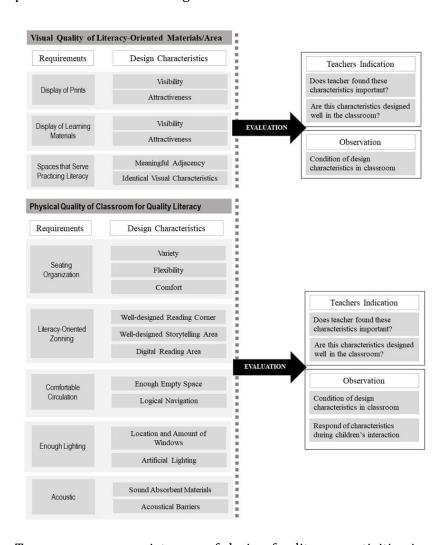structure of the framework that is developed for evaluating the preschool classroom's design.

Figure 1. Framework for evaluating design characteristics of literacy learning in preschool classrooms, Developed based on post occupancy evaluation model for PSIS (Izadpanah, 2016)

To compare appropriateness of design for literacy activities in public and private preschool classrooms in North Cyprus, it was decided to choose four different preschools (two public and two private) as smaple studies. To choose these samples, kindergartens that are originally designed and built as kindergarten and located in Lefkosa, capital city of North Cyprus were defined as a main criteria for selection. Therefore, the cases that had been converted from a different function to kindergartens were eliminated. In second step, to choose the samples that are popular for their design, a classified list from previous step was presented to 40 families who live in Lefkosa and recently had preschool age children. In a quick survey they were asked to vote for two private and two public kindergartens with the best design. Two public and two private kindergartens which got the highest votes were chosen for the current study.

In North Cyprus children attend preschool class (Okul Öncesi) at the beginning of the age of five, and therefore this study focused

on four classrooms where 5-year-old students attend. General information about literacy in selected samples is shown in Table 1.

Due to different amount of time that public and private preschools consider for weekly literacy activities, this study also intended to learn if these difference had played any role in improving the design characteristics of private classroom for a better literacy experience.

Table 1. General statistics related to community experience of the three groups (source: Yimuyuan community survey in 2013

Preschool Classroom	Weekly hour dedicated to Literacy	Number of children	Number of teachers	Patterns of literacy activities
Classroom in Private Kindergarten 1 (P1)	6 hours	18	2	Reading Writing Talking Storytelling
Classroom in Private Kindergarten 2 (P2)	6 hours	15	2	Reading Writing Talking Storytelling
Classroom in Governmental Kindergarten 1 (G1)	3 hours	12	2	Reading books and poems Writing Talking Dialogs over topics Storytelling
Classroom in Governmental Kindergarten 2 (G2)	3 hours	14	2	Reading books and poems Writing Talking Dialogs over topics Storytelling

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The evaluation process included two stages. First stage was evaluating the classrooms through observation. In first step of observation, the conditions of design characteristics identified in evaluation framework (Figure 1) were examined by visiting the classrooms while there were no children. During this step, the presence or absence and position of design characteristics was recorded. In the second step, each classroom was visited during literacy activities and children's interaction with design were recorded for six weeks. It was intended to continue the visits until the records for interactions (during activities mentioned in Table 1) started to repeat themselves. After the week four, patterns have already started to repeat. During the visits, design characteristics were re-evaluated based on the support they have provided for literacy activities. Based on the support each design characteristics provide for literacy activities; each characteristic was identified as:

(1) Supportive: Classroom has the characteristic and this characteristic supports patterns activities during literacy learning

(2) Neutral: Classroom has the characteristic but this characteristic is not used to support the patterns of activities during literacy learning

(3) Misleading: Classroom has this characteristic but this characteristic prevent or even disturb the patterns of activities during literacy learning

(4) Missing: Classroom doesn't have this characteristic

In second stage of the research, teachers were informed about the observation records of their classrooms and they were asked to comment on the outcome of evaluation. Teachers comment included two parts. In first part, they were asked to comment on the evaluation status of each characteristic and share if they agree or object. In second part they were asked about the structure of the evaluation model. The intention for this part was evaluating the accuracy of the evaluation model according to teachers' experience.

FINDINGS

Private preschools were named as P1 and P2 and public preschools are named as G1 and G2, because all of them requested to remain anonymous. The findings were divided into three categories, visual quality, physical quality and teachers' indications.
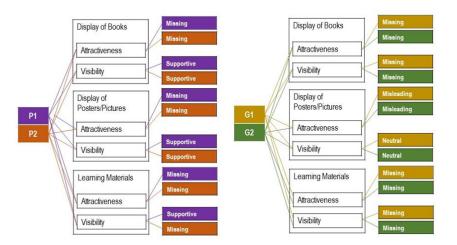
Visual Quality of the Classrooms

Posters and books were considered as printed materials and the way they have displayed in each classroom were evaluated. As it was shown in figure 2, private classrooms had a better literacy-oriented display in compare to public classrooms but the visual quality of display was weak in all of the classrooms. While creating an attractive display for books seemed not to be a concern in any of the classrooms, lack of a visible display for books was a very negative issue in public classrooms.

P1 had the best display solution for posters, because both fixed and movable surfaces were available. Teachers were arranging the pictures on movable surfaces with children and use them during the group talks. In none of the other classrooms, any interactions with surfaces were recorded during literacy activities. Teachers in P2, G1 and G2 said that they arranged the surfaces monthly mainly by using children's art works. Display of learning materials was also very weak in most of the classrooms.

Only P1 had a visible way of display for literacy learning materials, but even in this classroom no special design was considered and top of the surfaces were used as display for pens and pencils.

Figure 2. Visual quality of literacy-oriented displays in private and public preschools

Sub-spaces of literacy in private preschools were limited to seating area (writing, discussions/talks and poems reading) and reading corner and a separate drama/theatre space was used for storytelling activities. Since the focus of the study was classroom, private classrooms were evaluated based on available sub-spaces.

None of the literacy sub-spaces had a special visual/physical look that would make those areas stand out and the physical relationship between the areas was not specifically considered. Teachers believed that since classrooms have limited space, special adjacency between areas was not that necessary, because

they distribute the materials and lead children to necessary locations. Teachers in public classrooms believed that identical look of the sub-spaces only make the classroom look good and does not improve the support for literacy, however private classroom teachers believed identical look of sub-spaces will help children understand the content of literacy better. Figure 3 shows finding related with materials' display and visual quality of sub-spaces.

Figure 3. Visual quality of literacy sub-spaces in private and public preschools
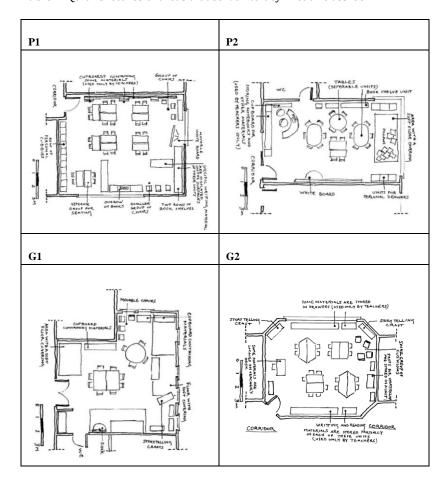
Physical Quality of Classroom

To evaluate the physical quality of the classrooms, condition of the design requirements that have been identified in the evaluation framework were analysed and interaction of children and teachers with the design characteristics was recorded. At the end of the 5th week the records started to repeat the previous records and therefore observation has been ended. Table 2 shows the quick sketches of the classrooms' layout. Areas that served literacy were identified in each classroom.

Table 2. Quick sketches of areas that serve literacy in each classroom

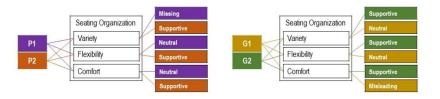## Seating Organizations

Seating organization was the first requirement and it was rated by teachers as the most important item. P1 had a comfortable yet single type of seating organization, therefore a single type of seating organization was recorded during all the activities and the condition had identified as neutral. P2 had the best seating solution among all the classrooms. There were different types of seating arrangements and due to various shapes of the tables three different seating arrangements (circular, rectangular and semi-circular) could be organized by teachers. During group talks teachers were creating circular arrangements and during the writing activities, teachers and children were changing the arrangements to rectangular and semi-circular. An area with a soft floor covering next to the window were used for story reading and locating some pillows in this area had even increase the comfort during this activity. P2 was also the only classroom that was allowing children for free-exploration inside the classroom. This activity lasted 30 minutes each day and it was noticed that children who engaged with reading and writing had preferred sitting on the floor.

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G1 had a promising seating organization. Both circular and rectangular tables were available, but during writing and group talks it was recorded that only the rectangular seating arrangement was recorded. Interestingly in this classroom there was a high table and children were writing on sand boxes that teachers located on this table in standing position. The level of socialization and interaction was very high during this activity. Same as P2, when teachers were distributing books to children, most of the children were sitting on the floor in an area with a soft floor covering. G2 had four rectangular and four semi-hexagon tables and children were allowed to sit at any of these tables. All tables could join together and shape a big circular table, however during observation this arrangement was not recorded and therefore variety and flexibility has identified as neutral. In this classroom since there was no area with a soft floor covering, four small-scaled individual sofas, which were looking very comfy, were located at the corner of the classroom. Children who were entering the classroom were sitting at these sofas first, but they had to leave these sofas and join the groups because the number of these sofas were limited, so the comfort was rated as misleading in this classroom. Children were asked if they would prefer to change the plastic chairs with the sofas and most of the answers were positive. Figure 4 shows the ratings for seating arrangement in the classrooms.
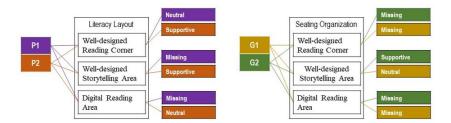

Figure 4. Visual quality of literacy sub-spaces in private and public preschools

Space Organization

Private preschools were using separate area for drama and story-telling activities, therefore storytelling areas were missing in private classrooms. Only in P2, twice a week teachers and children were sitting on the floor at the area with soft covering and one of the teachers were reading a book to children. Children seemed to be interested in this activity since they were engaging by asking questions. In public preschools, storytelling was happening once a week in G1 and once a month in G2. Both classrooms were using puppet show crafts for storytelling. In G2 children and teachers were moving the tables towards the centre and moving the chairs in front of the puppet show craft. Teachers were asked if the difficulty in organizing the space was the reason to have this activity once a month and both teachers agreed.

Layout of G1 and G2 lacked a well-designed reading corner because there was no library or visible display of books. Every day during play time, teachers were leaving number of books on the tables so If in case of children would be interested to look at the books. Children's interaction with books were rare in both classrooms, but observation showed that in G1 children were preferring to sit on the floor while reading the books. Both private classrooms had daily reading time, but most of the time children and teachers were reading the text books in groups and only in P2 individual reading was a free choice during the free play. In P2 locating the bookshelves next to area with soft flooring seemed to be a good solution, since most of the children who were looking at the books during free play were lying or sitting at the soft area. P1 lacked an area with a soft flooring and book-shelves were not arranged as a corner and instead located in different units with open shelves separate from each other.

An area for digital reading was missing in all the classrooms and only in P2 a computer was located for teachers, but it was located only for adults' use. All the teachers believed that digital reading has a negative influence. However, recent researches suggested that digital reading and writing could actually improve children's literacy learning (Verhallen, Bus & de Jong, 2006, Wood, Specht, Willoughby & Mueller 2008, Ciampa, 2012, Beschorner, Hutchison, 2013). Figure 5 shows the condition of literacy-oriented sub spaces in four classrooms.

Figure 5. Condition of literacy-oriented sub-spaces in public and private classrooms

Circulation

Paths of movements in none of the classrooms were systematically arranged to navigate children to literacy-oriented activities and materials, but in general all the classrooms had enough amount of empty space for children's safe and comfortable movement. Findings from observations showed that since only private classrooms children were allowed to get the writing materials, children were actively moving around during writing activities. However, observing movement of children during writing activities showed that circulation paths in both classrooms do not provide a logical navigation for an easy access to the materials

In public classrooms children's movement during writing sessions were recorded as movements out of distraction or a need for using the toilet. Teachers in public classrooms believed that if they had open display located in a safe place, they still wouldn't allow children to get and return the materials themselves, because they had to use the time efficiently. Figure 6 shows the condition of circulation network in classrooms.

Figure 6. Condition of circulation network in public and private classrooms

Lighting

Lighting in all four classrooms were was a positive feature. Most of the year Cyprus is sunny and this potential was used efficiently in all of the classrooms. According to the records, teachers were arranging the activities by considering the time of the day and the amount of light. For example, in G2 teachers were closing the curtains between 11 to12 to reduce the glow for children's writing activities or in P2 teacher and children were sitting on the soft flooring next to the window around 15.00 because during this time the amount of light was very pleasant and would not bother them. All teachers believed that light was the second important item for providing a quality literacy-oriented classroom. Figure 7 shows the condition of lighting solutions in all the classrooms.

Figure 7. Condition of lighting solutions in public and private classrooms

Acoustic

Consideration of acoustical barriers was missing in all four classrooms. However, in P1, P2 and G1 availability of certain features like surface materials, scale of the room, number and locations of elements and furniture was unintentionally controlling the level of noise and echo. In G2 due to lack of soft materials and existence of ceramic tiles as floor covering, the amount of echo and noise was recorded as high during group talks. Teachers in G2 also agreed with this weakness. Figure 8 shows the condition of acoustic solutions in all the classrooms.

Figure 8. Condition of acoustic solutions in public and private classrooms

Teachers' Indications

The only design requirement that teachers believed is not necessary for preschool literacy-oriented environment was including an area for digital literacy. Table 3 shows teachers' rating for each design characteristics. All the teachers believed that even though their classrooms lack certain characteristics, the educational strategies that they used created a quality environment for children's literacy learning. At the same time teachers accepted that if the design of their classrooms was improved based on the design characteristics included in evaluation framework, children would experience a better literacy environment.

DISCUSSIONS

Results of comparisons showed that private classrooms' design characteristics have created a better support for literacy activities in compare to public classrooms. On the other hand, interpretation of the overall records led to a conclusion that creating a literacy-oriented physical space was not the concern in designing any of the classrooms. For example, common design characteristics that was missing in all the classrooms was lack of physically and visually accessible displays for literacy-oriented materials and creating a sub-space with identical look. This shows that representing literacy in space was not the intention. Another missing characteristic in all the classrooms was lack of a logical navigation towards literacy materials. While in public classrooms teachers were distributing the materials, in private classrooms children were allowed to get and return the literacy materials. However, even in private classrooms the units where the materials were stored could be placed in a better location for a more comfortable access. These missing characteristics matched with the findings of Marrow (1990) in which he claimed that physical space remained as background scenery.

According to the records in the classrooms several conclusions can be made. Observing children during the activities showed that most of them prefer to sit on the floor during reading and story-telling. This finding approves that children prefer different positions while reading and it is necessary to provide different options (Izadpanah & Günçe, 2014). In P2 during free play it was observed that children were sitting on the floor to look at the

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books. Also in G1 during storytelling children had a higher engagement in compare of G2 and the only difference was availability of a soft-floor covering for children to sit on the floor in G1 and lack of this area in G2. Therefore, results suggested that considering an appropriate area for children to sit on the floor is necessary for creating a quality literacy environment.

Availability of a movable white board in P1 was another positive feature. Teachers in this classroom had the highest interaction with the prints during the group talks. Teachers claimed that movability of this display helped them rearrange the prints, use it in variety of activities and re-locate them in a best position. Teachers in P2 also were referring to prints time to time, but pointing at the prints pinned on boards was not as interactive as using the movable board in P1. All of the teachers were asked about having a movable surface and all of them agreed that it would help them use the prints more often.

Other interesting result was that providing literacy-oriented design characteristics in the classrooms seemed to remain neutral if educational strategies were not using those features as potentials. For example, in G2 by joining all the tables it was possible to create a big circular seating but even though circular seating would be more appropriate for group talks, this rearrangement was not recorded. Teachers were asked about this issue and they have responded that they didn't see this arrangement as a necessity. While in G1 a circular table was available, only rectangular tables were recorded to be used for writing and group talks. Teachers in public preschools also were asked about lack of visual a physical access of children to literacy materials. All four teachers believed that even if they had visible display they would prefer to distribute the materials themselves because in this way they would use their time efficiently. This respond showed that even if space offer an opportunity for supporting children's learning, without an appropriate teaching strategy this potential would remain neutral.

Furthermore, findings from rating the design characteristics by teachers showed that teachers in private classrooms agreed with the necessity of design characteristics more than teachers in public classrooms. This difference might be due to the reason that teachers in private classroom had a better physical condition in compare to public classrooms and therefore they had experienced the influence of appropriate design on improving the quality of activities. Teachers were also asked if they would add more design requirements to this framework what would be their recommendations. None of them had made any recommendation

as design requirements, but some of the teachers had recommended to consider preschool as a whole instead of focusing only on the classroom. Another interesting discussion was raised related with teachers indicating that they filled the gap of design by teaching strategies while they were accepting that improving the design of the classroom would increase the quality of learning. In this case it was concluded that teachers' first indication was due to defending their classrooms and they actually believe in the role of design for improving the learning quality.

CONCLUSION AND RECOMMENDATIONS

Results of comparison showed that private preschools had a better design for preschool's literacy. This can be due to a better budget and including more amount of literacy activities in their curriculum. But the overall evaluation claimed that private classrooms could be more sensitive with design since they upgraded their curriculum and gave more importance to learning literacy. Another important finding was lack of a visual display of books in public classrooms which was a basic requirement of a literacy-oriented environment.

Although recent studies claimed a positive impact of digital reading/writing on children's literacy learning, all the teachers found providing an area for digital literacy as a negative feature. Upgrading teachers about the positive impact of a well-design area for digital reading/writing might reduce teachers' opposition with digital literacy.

In overall, the findings suggested that the framework was appropriate for comparing the design of preschool classrooms in term of literacy requirements. Based on the context of evaluation a positive feature was that and if it looked necessary, evaluators could integrate children and teachers' indication and experiences in evaluation process. The flexibility of the evaluation framework makes the evaluation process easy and generates more realistic results. By re-structuring the framework for evaluating all the spaces in preschool, the framework can be ready for evaluation of a larger sample. Based on teachers' recommendations for improving the structure of the framework, additional studies can be implicated to identify additional design requirements for creating a literacy-oriented environment in all the spaces in preschools.

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REFERENCE

Albers, P., Holbrook, T., & Flint, A. S. (2014). *New methods of literacy research*. New York: Routledge.

Beschorner, B. & Hutchison, A. (2013). iPads as a literacy teaching tool in early childhood. *International Journal of Education in Mathematics, Science and Technology*, 1(1), 16-24.

Boys, J. (2011). *Towards creative learning spaces re-thinking the architecture of post-compulsory education*. Abingdon, Oxon: Routledge.

Ciampa, K. (2012). Reading in the digital age: Using electronic books as a teaching tool for beginning readers. *Canadian Journal of Learning and Technology*, 38(2).

Cortes, C., (2013). *Designing literacy rich classroom environments for young children: a study of teachers' design processes and tools*, Arizona State University.

Cunningham, D. D. (2005). *Relating quality of urban, public school, preschool classroom environments to the language and literacy development of at-risk pre- school children*. Unpublished doctoral dissertation, University of Missouri, St. Louis.

Cunningham, D. D. (2008). Literacy Environment Quality in Preschool and Children's Attitudes Toward Reading and Writing. *Literacy Teaching and Learning*, 12(2), 19-36.

Dickinson, D. K., & Sprague, K. (2002). The nature and impact of early child- hood care environments on the language and literacy development of chil- dren from low-income families. In S. Neuman & D. K. Dickinson (Eds.), *Handbook for early literacy research* (pp. 263–280). New York: Guilford Press.

Dickinson, D. K., & Tabors, P. (2001). *Beginning literacy with language.* Baltimore: Brookes Publishing.

Gifford, R. (2002*). Environmental psychology: Principles and practice*, Optimal Books.

Graff, H. (1991). *The Legacies of Literacy: Continuities and Contradictions in Western Culture*. Bloomington: Indiana University Press.

Hart, B., & Risby, T. (1995). *Meaningful difference in the everyday lives of young American children*. Baltimore: Brooks Publishing.

Hille, R. (2011). *Modern schools: A century of design for education*. Hoboken, N.J.: John Wiley and Sons.

Izadpanah, S. & Günçe, K. (2014). Integration of Educational Method and Physical Settings: Design Guideline for High/Scope Methodology in Preschool, *South African Journal of Education*, 34(2). 1-17.

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Izadpanah, S. (2016). *A Post Occupancy Quality Evaluation Model for Preschool Settings' Interior Spaces (PSIS)* (Unpublished doctoral dissertation). Eastern Mediterranean University.

Könings, K. D., Brand-Gruwel S. & Merriënboer, J. J. G. (2005). Towards more powerful learning environments through combining the perspectives of designers, teachers, and students. *British Journal of Educational Psychology,* 75(4), 645–660.

Kress, G., & van Leeuwen, T. (1996). *Reading Images: The grammar of visual design*. London: Routledge.

Lawn, M. (1999). Designing teaching: the classroom as a technology. In I. Grosvenor, M. Lawn & K. Rousmaniere (Eds.), *Silences and Images: The social history of the classroom*. New York: Peter Lang.

Lonigan, C. J., Allan, N. P., & Lerner, M. D. (2011). Assessment of Preschool Early Literacy Skills: Linking Children's Educational Needs with Empirically Supported Instructional Activities. *Psychol Sch*, 48(5), 488-501.

Lundquist, P., Kjellberg, A., & Holmberg, K. (2002). Evaluating effects of the classroom environment: Development of an instrument for the measurement of self-reported mood among school children. *Journal of Environmental Psychology*, 22, 289-293.

Marrow, L.M. (1990). Preparing the Classroom Environment to Promote Literacy During Play, *Eraly Childhood Research Quarterly, 5,* 537-554.

Maxwell, L. E., & Evans, G. W. (2000). The effects of noise on pre-school children's pre-reading skills. *Journal of Environmental Psychology*,20 (1), 91-97.

McGee, Lea M., and Lesley Mandel. Morrow. *Teaching Literacy in Kindergarten*. New York: Guilford, 2005. Print.

Morrow, L. M. (2002). *The literacy center: contexts for reading and writing*. Portland, Me.: Stenhouse.

Morrow, L. M., Roskos, K., & Gambrell, L. B. (2015). *Oral language and comprehension in preschool: Teaching the essentials*. New York: Guilford Publications.

Nichols, S. & Nixon, H. (2013). Space, place and early childhood literacy. In J. Larson & J. Marsh (Eds.), *The SAGE Handbook of Early Childhood Literacy*, London: SAGE Publications Ltd.

Nichols, S. (2011). Young children's literacy in the activity space of the library: A geosemiotic investigation. *Journal of Early Childhood Literacy*, 11(2), 164-189. doi:10.1177/1468798411399275

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Nichols, S. (2014). Geosemiotics. In P. Albers, T. Holbrook, & A. Flint (Eds.), *New Methods of Literacy Research* (pp. 177-192). New York: Routledge.

Nicole, S. (2013). Geosemiotics. In T. Holbrook, A. Flint, & P. Albers (Eds.), *New Methods of Literacy Research*. New York: Routledge.

Rainbird, S., & Rowsell, J. (2011). 'Literacy nooks': Geosemiotics and domains of literacy in home spaces. *Journal of Early Childhood Literacy*, 11(2), 214-231. doi:10.1177/1468798411401865

Scollon, R. & Scollon, S. (2003). *Discourses in place: Language in the material word.* London: Routledge.

Södersten M., Granqvist, S., Hammarberg B., & Szabo A. (2002). Vocal behavior and vocal loading factors for preschool teachers at work studied with binaural DAT recordings. *Journal of Voice*, 16 (3), 356-371.

Street, B. V. (1995). *Social literacies: Critical approaches to literacy in development, ethnography and education*. London; New York: Longman.

Verhallen, M., Bus, A. G., & de Jong, M. T. (2006). The promise of multimedia stories for kindergarten children at risk. *Journal of Educational Psychology*, 98, 410-419.

Wood, E., Specht J., Willoughby T., & Mueller J. (2008). Integrating computer technology in early childhood environments: Issues raised by early childhood educators. *The Alberta Journal of Educational Research*, 54(2), 210-226.

Resume

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