

QUALITY OF LEARNING ENVIRONMENTS IN ESTONIAN PRESCHOOLS

Tiia Õun

Tallinn University, Estonia

E-mail: tiia.oun@tlu.ee

Abstract

The quality of the learning environment in a group is an important factor in evaluation of activities in preschools. Studies have shown that factors of the learning environment influence different aspects of child's development as well as smooth transition from kindergarten to school. Since 1994 besides traditional kindergarten groups there are also Step by Step groups in Estonia that emphasise on the need of child-centred education. The present article gives an overview of a study where the quality of the learning environment was compared in the Step by Step and traditional kindergarten groups by using the Early Childhood Environment Rating Scale Revised Edition. ECERS-R consists of 7 areas that cover the main quality factors in kindergarten groups: premises, equipment, programme structure, activities in the group, child-adult communication, cooperation with parents and professional support to staff. Observation based on the ECERS-R scale and an additional interview was carried out in 2008 in 30 groups in total – in 15 traditional groups and 15 Step by Step groups. The results showed that the quality of the learning environment in the Step by Step groups was higher than the quality of traditional groups. The main differences were in relations between teachers and children and group activities.

Key words: *learning environment, preschool, quality.*

Introduction

Different learning environments around children have multiple influences on children's development. Exact opportunities or restrictions to children's development depend on children's relations as subjects to created environments and its systems. Eco-psychological approach by Brofenbrenner (1979) brings out the influence of reciprocal relations of learning environments to child's development. The theory of contextual growth emphasises on relations of education and learning to the environment where the child lives and acts as this influences developmental results of the child (Hujala, Puroila, Parrila-Haapakoski & Nivala, 1998).

The statistics from the European Union countries shows that majority of 3-year-old and older children attend a preschool educational establishment. Based on the Eurostat 87% of 4-year-old children, 77% of 5-year-old children and 73% of 6-year-old children attend a preschool establishment (ECEC, 2009). Therefore, the quality of a preschool and its influence to children's development is important. Definitions of initial quality primarily emphasised on the role of interest groups (Katz, 1993) This was complemented by discussions emphasising on the

relativity of the concept of quality that is related to different values, beliefs and needs (Moss, 1994). At the same time it has been emphasised on that definition of quality criteria should be based on indicators that show direct links to child's developmental results and avoid subjective opinions (Melhuish, 2001).

Quality assessments mention structural as well as process factors (Chandler, 2006). Structural components are usually teacher-child ratio, group size, in-service training, staff salary, education level of the teacher. The studies have shown that the quality of early childhood education is higher in case of lower teacher-child ratio and smaller group size (Burchinal et al., 1996; Howes, Phillips & Whitebook, 1992). The quality of early childhood education is higher in these preschools where teachers have higher education and higher salaries (Cost, Quality and Outcomes, 1995). Also, systematic in-service training of teachers has an influence on quality (Dodge, 1995). Process factors include teachers' beliefs, curriculum-based activities, inclusion of parents and teacher-child relations. Studies have indicated that teachers with no authoritarian beliefs and behaviour are able to create an environment that supports children's independence (NICHD, 1996). Teachers who feel empathy towards children and are able to create meaningful contacts with children have positive influence on child's development as a whole (Howes & Ritchie, 2002). Most of all development results of children are influenced by created learning environments and teacher's communication with children (LoCasale et al., 2007). Several studies have shown that the learning environment created in a preschool has an influence on child's further academic progress in a school. Children who have attended a preschool educational establishment of high quality have better language and mathematical skills when going to school (Burchinal, Peisner-Feinberg, Bryant & Clifford, 2000; Pianta, LaParo, Payne, Cox & Bradley, 2002).

The present study explains the quality of learning environments in Estonian preschools. After re-independence in 1992 changes in content-related activities in educational establishments took place. Since 1999 the Preschool Educational Establishments Act (Koolieelse, 1999) and the Framework Curriculum for Early Childhood Education (Alushariduse, 1999) form the basis for activities in preschool establishments. The Framework Curriculum presents aims, principles, areas and content of learning activities and assessment principles of child development. The Framework Curriculum is a short document (17 pages) and based on that each preschool has to develop its own curriculum.

In 1994 the Step by Step programme was introduced in several Estonian preschools and schools. The aim of the Step by Step programme was to support dissemination of ideas of democracy and child-centeredness in preschool educational establishments in the former soviet socialist republics (Coughlin & Walsh, 1996; Klaus, 2004). The programme is based on developmental approach in teaching taking into account knowledge on how children learn and develop (Bredenkamp & Copple, 1997). Individualisation of teaching, creation of a child-centred learning environment, positive teacher-child communication, assessment of child's development and cooperation with parents are important factors in the Step by Step preschool groups. Learning environments in the Step by Step groups enable the child to make choices, realise his/her interests and be active (Hansen et al., 1997). So, teachers in the Step by Step programme apply the curriculum based on developmental approach. Mainstream preschool groups in Estonian preschools act based on the National Curriculum that, to a small extent, emphasises on developmental approach in learning. The studies have shown that preschool educational establishments that use developmentally appropriate curricula offer early childhood education of higher quality (Dodge, 1995).

Applied research in the Step by Step programme has indicated that participation in the programme has a positive influence on child's emotional, social and intellectual development and has supported dissemination of ideas of child-centeredness among teachers (Kazimade et al., 2003; Havlinova et al., 2004). Studies carried out in Estonia have shown that the use of the Step by Step programme has supported professional development of teachers by helping teachers to understand and analyse better pedagogical processes and child development (Ugaste & Õun, 2007; Ugaste, Õun, & Tuul, 2008).

The aim of the present study was to compare the quality of learning environments in the Step by Step and traditional (no Step by Step) preschool groups. Main research questions are: What are the characteristic features of learning environments created in Estonian preschools? Are

there any differences between the Step by Step and traditional preschool environments? Based on the previous research (Dodge, 2005) we presume that the quality of learning environments in the Step by Step groups is higher than in traditional groups.

Methodology of Research

The quality of learning environments in preschools was measured by the *Early Childhood Environment Rating Scale – Revised Edition* (ECERS-R) (Harms, Clifford & Cryer, 2005). The Scale is a scientifically accepted tool for the quality assessment of learning environments in preschools. Several research projects in America as well as in Europe have been carried out based on the ECERS scale where the relations between preschool learning environments and child development, teacher education and behaviour have been studied (Harms, Clifford & Cryer, 2005). The scale has also been used for international comparative research on quality in preschools (Tietze et al., 1996). Several studies (Kärrby & Giota, 1994; Tietze, Schuster & Roszbach, 1997) have confirmed the reliability and validity of the ECERS.

The scale consists of 43 items organized under seven subscales: space and furnishings, personal care routines, language-reasoning, activities, interaction, program structure, parents and staff. Item scores range from 1-7. On these scale scores of less than 3 suggest inadequate quality, 3-5 minimal quality, and 5-7 good to excellent quality. In order to rate the quality with the ECERS-R the child care setting's total environment must be observed: space, equipment, materials used inside and outside, documentation, the interaction between teacher and child, the atmosphere and education style.

The pilot study was conducted before study. The pilot study was necessary to check for interrater reliability between the researchers. The evaluation of quality was made by two qualified observers. The interrater reliability was 75% perfect agreement and 92% within one point. Data for the study were collected in 2008. The duration of one observation was 3 hours as an average. In addition to observations an interview with a group teacher was carried out if necessary, in order to specify observation results. Each observer conducted observations alone. After three observations were made, observers assessed a preschool group together. At this point the interrater reliability was 79% for perfect agreement and 90% agreement within one point.

Data analysis was carried out by SPSS 16.0. The mean ECERS-R scores of the Step by Step and traditional group were compared for the seven subscales and the total score. An alpha level of 0.05 was used for the statistical analysis. A series of two-tailed independent samples t-tests were conducted to determine significance for the Step by Step and traditional group on their ECERS-R scores. The reliability coefficient of ECERS-R total score was 0.81 (Cronbach alpha).

Ownership and pedagogical trends in preschools were taken into account in the selection process. 15 groups from the Step by Step programme and 15 traditional groups were selected. All groups used Estonian as the language of instruction and were in municipal preschool establishments. Majority of participating groups were in towns.

Results of Research

Next the results of the observations are given in ECERS-R scale in the section of seven subscales and items. In the sub-scale Space and Furnishing the size of the group's room, furnishing, children's furniture, play space, children's opportunities for relaxing and for separating themselves from the group and children's facilities as well as means to exercise actively were assessed. It turned out from the results that the highest mean score had the item 'Child related display' (5.07) and the lowest mean score had the item 'Indoor space' (3.10). The low scores of the indoor space were foremost due to the renovation need, inadequate size and lighting of the rooms. In several cases the children had only one group room for playing, eating as well as sleeping, which is inadequate for children as well as adults. The spatial facilities of Step by Step groups were somewhat better compared to traditional groups. In case of most factors the results of Step by Step groups were higher. Statistically significant differences became evident in case of two items, first 'Room arrangement for play', in case of which the mean score of Step by Step

group was 4.93 and traditional group 3.93 ($t=2.966$, $p=0.006$) and 'Space for privacy', where the mean score of Step by Step group was 5.40 and in traditional group 3.27 ($t=4.112$, $p=0.000$). This result indicates that compared to traditional groups in Step By Step groups the child's privacy and need for emotional security is more taken into consideration and a high quality play environment has been created.

In the subscale 'Personal care routines' children's reception, meal times, sleeping facilities, hygiene, healthcare and the situation with children's security were assessed. According to the results of all groups it turns out that the items with higher mean scores were 'Health practices' (6.17) and 'Toileting' (5.80), which evidently comes from the fact that state healthcare requirements have been established for childcare institutions in Estonia. Statistically significant difference appeared in case of the item 'Greeting/departing', where the result of Step by Step groups (5.87) is higher than in case of traditional groups 4.53 ($t=3.157$, $p=0.004$).

In comparing the results in the subscale 'language-reasoning' it turned out that the item 'Informal use of language' received the highest mean score (4.97), where the result of Step by Step groups was higher (5.67) than in traditional groups (4.27) ($t=2.754$, $p=0.01$). The mean result of Step by Step groups (5.47) was higher also in case of the item 'Encouraging children to communicate' compared to the traditional groups (4.40) ($t=2.296$, $p=0.03$), which shows the better skills of the teachers of Step by Step groups in communicating with children.

In the subscale of activities the facilities created for children for developing fine-motor, art, music, building blocks, sand/water, role play, nature, mathematics and tolerance were observed. The highest mean score had the item 'Math/number' (5.60) and the lowest one had the item 'Promoting acceptance of diversity' (1.30), which shows inadequate quality. The low scores evidently proceed from the fact that little attention has been paid to the multicultural education in the curriculum of kindergarten and this area has only recently been included in the teachers' formal education acquired within the adult education system. Significant differences became apparent in case of four items where the results of Step by Step groups were higher - art ($t=2.662$, $p=0.013$), blocks ($t=3.012$, $p=0.006$), sand/water ($t=5.173$, $p=0.000$) and dramatic play ($t=3.566$, $p=0.001$).

In the subscale 'Interaction' five items connected with the children's supervision, discipline, interaction between children and teachers and interaction between children were assessed. The mean scores of the whole area were high in case of Step by Step (5.68) as well as traditional groups (5.41), which shows good quality of the assessed groups. Statistically significant difference became apparent in case of the factor 'Staff-child interaction', where the result of Step by Step groups (6.00) was higher than in case of traditional groups (5.07) ($t=2.432$, $p=0.022$).

In the subscale of the programme structure the daily schedule, free play and facilities for group work were assessed. On the basis of mean scores the item 'Schedule' (5.43) received the highest assessment. In case of the item 'Group time' the mean score of Step by Step groups 5.73 was higher than in case of traditional groups 3.27 ($t=5.969$, $p=0.000$). As the activity of Step by Step group mainly takes place as group work in activity centres, the mentioned item received significantly higher assessments compared to the traditional groups, where the teacher rarely uses group work.

In the subscale 'Parents and Staff' the kind of opportunities created in the groups for communicating with parents were surveyed; to what extent the staff's personal and professional needs are taken into account, how the assessment of the staff takes place and what are the opportunities for further education. The consolidated assessment of the whole area 5.30 indicates good quality. The item 'Opportunities for professional growth' (6.13) received the highest assessment. It can be explained by the fact that there is a state funded system of teachers' further education in Estonia, which supports the teachers' professional development. No differences became apparent in the results of Step by Step groups and traditional groups.

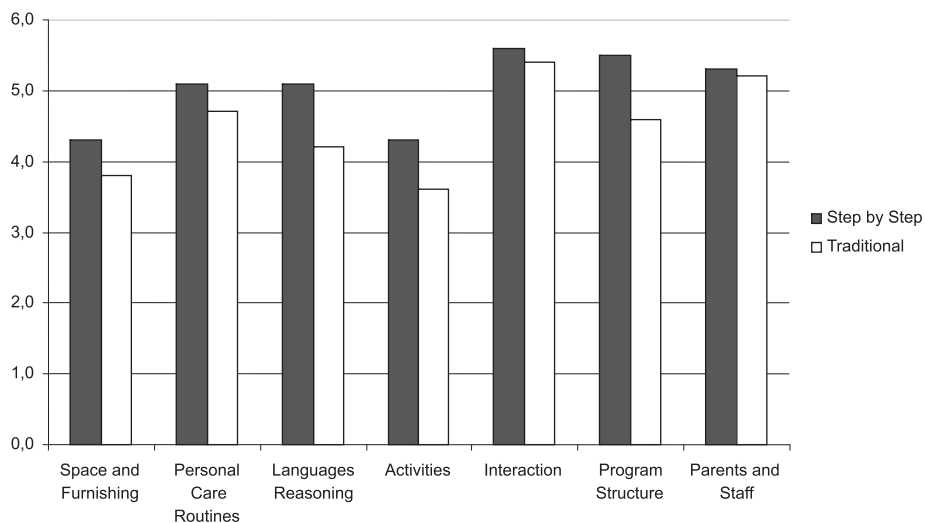


Figure 1. Distribution of mean ECERS scores.

According to the comparison of the mean scores of subscales (Figure 1) it can be said, that in five areas there was a good quality in Step by Step groups and minimum in two areas. In case of the traditional groups the quality was good in two areas and minimum in five areas. Thus in Step by Step groups high quality was ensured in more cases than in traditional groups. In the summary of the 35 items given in the subscales the results of the Step by Step groups were significantly higher in case of 11 items which involved interaction between the teacher and the children, environment of the activities and group work.

Conclusions

International comparison of countries indicates that in educational policy discussions more and more attention is paid to the quality of early childhood education and care (OECD, 2006). The quality of early childhood education is expressed in several structural and process factors of learning environments that include the created environment, human relations and curriculum. Based on the criteria for early childhood education curricula brought out in OECD analysis we can say that social pedagogical approach has replaced early education approach in Estonian early childhood education. The social pedagogical approach supports the application of a curriculum based on child's development. This trend has been supported by the application of the Step by Step programme in preschools.

The aim of the present study was to compare the quality of learning environments in the Step by Step and traditional preschool groups. The main results showed that minimum quality in most criteria was guaranteed in all participating groups. Consolidated results of the quality of learning environments in the Step by Step groups were higher than in traditional preschool groups. So, we can conclude that the Step by Step programme principles have supported teachers to implement a child-centred curriculum. This result confirmed earlier results that preschools that apply developmentally appropriate curricula offer early childhood education of higher quality (Dodge, 1995). The Step by Step teachers have said that the programme has helped them to give meaning to child-centred education, to plan and analyse their work better (Ugaste, Õun & Tuul, 2008).

The main proposals could be that more attention should be paid to leisure time tools and opportunities in groups (e.g. music instruments, opportunities for role-play, tools for experiments etc.) in Estonian preschools. Also, attention should be paid to furnishing of premises. Low score in this area is due to incommensurable of rooms and the need for refurbishment that refers to problems of material supply and economy of preschools at a local level. Evaluation of several factors showed a problem that a teacher is involved in different activities and due to that the time to communicate

with children was limited. In the future more attention should be paid to the development of tolerance and multicultural education in preschool establishments.

Limitations in the present study are related to the sample size. The results from 30 participating groups do not allow comprehensive conclusions for all Estonian preschools. In further studies more preschools taking into account county proportions should be involved. At the same time the study showed that the quality of Estonian preschool establishments can be assessed by the ECERS-R scale. So, the scale could be adapted and translated into Estonian.

International studies indicate that the quality of learning environments improves considerably by raising teacher awareness on quality criteria (Fontaine et al., 2006). E.g. the Fontaine study showed that already during the two assessment periods the quality of learning environments increased considerably in all participating preschool establishments. The use of the ECERS scale criteria in self-evaluation of teachers has a direct relation to the increase in the quality of learning environments (Fontaine et al., 2006; Mathers et al., 2007). There are no uniform quality assessment criteria for Estonian preschool establishments and every preschool chooses its own methods for assessment of activities. Therefore, the quality of preschool establishments may vary (Õun, 2008). So, it would be necessary in Estonia to continuously introduce assessment opportunities for learning environments in preschools to teachers and to use internationally recognised quality criteria in self-evaluation of teachers.

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Advised by Ulle Saarits,
Tallinn University, Estonia

Tiiu Õun

Lecturer, Department of Early Childhood Education, Tallinn University, Narva mnt 25,
Tallinn, 10314, Estonia.
Phone: + 372 5163471.
E-mail: tiiu.oun@tlu.ee
Website: <http://www.tlu.ee>