Looking at Quality Indicators in Childcare Centres

Celina Kwan

INTRODUCTION

The effects of a diversity of childcare environments, their forms and features, is the focus of many investigations in relation to young children's progress. Many young children spend major parts of their days in non-parental care such as in family-based or centre-based environments. In Singapore, this situation is not different from other urbanized countries. During the past 10 years, the annual labour growth rate for females was higher than that for males, that is 4.1% compared with 2.8% respectively (Ministry of Manpower, 1999). As human resources are vital to continued growth for the future economy of the country, the state is encouraging an increase in the birth rate. Hence, with the increasing population of young children and more women returning to work, provision of care for young children continues to be under serious consideration.

The Department of Statistics reported an enrolment of 12,747 in childcare centres in 1990 and a current number of 35,902 have been recorded. Also, the demand for childcare places has caused a rapid growth in number of childcare centres. To date, there are 544 childcare centres and 45,272 places available compared with 228 centres and 15,000 places available in 1991. With this rapid increase in childcare enrolment and growth of number of centres, there is a growing awareness of the need to provide good quality developmental programs for young children in centre-based group care.

This paper reviews the various ways of examining quality indicators of early childhood environments and reports the findings of a study that investigated the use of a well known assessment instrument, the Early Childhood Environment Rating Scale – Revised (Harms, Clifford & Cryer, 1998), on 30 childcare centres in Singapore. Implications for improving practice in early childhood classrooms will also be discussed.

CHARACTERISTICS OF THE EARLY CHILDHOOD EDUCATION ENVIRONMENT

There are various ways of examining the characteristics and quality of the early childhood environment. A multiple-perspectives approach is
suggested by Katz (1994) in which five perspectives can be used:

1. **Top-down perspective** that usually involves programme administrators and licensors. Quality indicators are examined in terms of structural characteristics such as staff-child ratio, staff qualifications, space and equipment.

2. **Bottom-up perspective** in which the day-to-day experiences of children in early childhood environments are examined. This requires careful observations and close interaction with children.

3. **Outside-inside perspective** involves parents' views of how childcare environments can provide for their children.

4. **Inside perspective** uses staff's views of looking at what quality in the environment is. For example, teachers examine the effectiveness of the environment by the relationship between colleagues, staff/parent relationship and organizational climate. This is important as a positive and enriching environment for children cannot be created if the working climate for adults is not a conducive and positive one.

5. **Ultimate perspective** that involves the society at large. From this point of view, one may identify policies and decisions made in administering public and private childcare provisions.

Katz suggests that evaluation of characteristics in the childcare environment will require a list of criteria, which can be identified from the various perspectives described above. For example, using the top-down perspective, criterion such as adult-child ratio can be assessed, e.g., 1:5, 1:10 or 2:25, depending on the age group of children. Similarly, from the bottom-up perspective, children's activities may be assessed by recording the frequency of being involved in various tasks. Setting criteria and standards allow for more objective ways of assessing the effectiveness of a programme but criteria and standards will vary from one country to another.

Munton, Mooney and Rowland (1995) identify three components found in the childcare environment. (1) **Structure** (e.g. teaching materials, environmental safety, expenditure, opening hours), (2) processes within the environment (e.g. stimulation of children, parent-staff interactions, child-staff ratio, links between childcare and local schools) and (3) the outcome of what is offered (e.g. language/cognitive developmental optimums achieved, comparable cost of child care, safety and equal opportunities for all children). This conceptual framework also enables one to examine whether the preschool is effective, acceptable, efficient, accessible, equal or relevant to parties involved.
The advantage of Munton's framework is that it enables different groups of childcare stakeholders to identify features of the environment and place these features in relation to how they can be viewed by other groups involved in providing care. So, when reviewing the findings of such evaluative studies, this model helps place various research conclusions in perspective of other points of view. The framework has a practical value in that it also gives a structure as to what questions can be asked about the features and how they can be assessed.

**Measuring the effectiveness of the childcare environment**

In applying Munton's framework, most small-scale and large-scale studies of childcare environment use the criteria of effectiveness as the main focus of investigation. Some of these large-scale studies are the Carolina Abecedarian Project (Cambell & Ramey, 1994), National Child Care Staffing Study (Whitebook, Howes & Phillips, 1989) and the Effective Provisions of Pre-school Education Study (Sylva, Sammons, Melhuish, Siraj-Blatchford, Taggarta, Whalley, & Jefferson, 2001). Such a framework was also used in Singapore studies (e.g. Kwan, Sylva, Quah, Retas, Anthony, Lie, Lim, & See, 2001).

Most of such studies examine the features of childcare environment identified from professional and the educators' point of view. Features identified consist of the educative structure and processes in the environment and the effectiveness of these in the childcare environment will be reflected in positive child developmental outcomes.

Scores of research studies have identified features of the childcare environment that either enhance or impede child development. Howes, Phillips and Whitebook (1992) identified two groups of features in the childcare environment, "structural" and "process" features, which are used to evaluate the effectiveness of centre-based child care in the USA. The "structural" variables are features that can be regulated like adult-child ratios, group size and training of teachers. The "process" variables, like teacher behaviour and provision of activities for children, are more difficult to regulate through law or institutional guidelines. Howes et al. (1992) used "thresholds" to measure the effectiveness of childcare environment, which means "the point between child care that harms children or hinders their development and child care that does not create detectable harm".

Similarly, Dunn's (1993) study of 30 day care classrooms in north-central Indiana identified "proximal" and "distal" features in the childcare environment to evaluate the effectiveness of childcare provision in enhancing children's social and cognitive development.
These features are categorised according to their proximity to children's actual experiences. According to Dunn (1993), "distal" features describe the experiences that are potentially available to children but do not describe actual experiences. These are broad parameters of the environment like ratio, group size, caregiver characteristics, and global assessment. On the other hand, "proximal" features describe the more interactive and dynamic aspect of day care. These include caregiver-child interaction and peer interaction. Dunn (1993) studied the effects of these two groups of environmental features by examining how closely they predicted children's development.

This empirical stance in research methodology gave rise to the development of a variety of assessment instruments that are aimed at identifying and measuring quality indicators in childcare environments. Some of these instruments are the NAEYC Developmentally Appropriate Practices (Bredekamp & Coop, 1997), Child Development Program Evaluation Scale (Kontos & Fiene, 1987) and the Early Childhood Environment Rating Scale — Revised or ECERS-R (Harms, Clifford & Cryer, 1998).

The ECERS-R is a well-used instrument in the study of preschool environment. It is also translated into various languages such as French, German, Italian, Portuguese and Swedish. This instrument has seven subscales that measures the standard of providing for space and furnishings, personal care routines, language-reasoning experiences, learning activities, interaction with adults and children, programme structure and parents/staff needs. Observations are made and each area of the environment is rated on a seven-point Likert-type scale. A score of one is considered inadequate, a score of three is minimal, a score of 5 is good and a score of 7 is excellent. Descriptors of what makes that level of quality are listed for each score category. The designers and users of the ECERS have reported on adequate validity and reliability (Goelman & Pence, 1988, Karrby & Giotta, 1994, Sylva et al, 2001). The ECERS's flexibility in obtaining either a global score or subscale scores for centre is also an advantage for its practical and informative value. In Singapore, the ECERS-R was used in the Singapore Child Care Project (Kwan, Sylva & Quah, 1999-2001). The following describes a part of this study in which the instrument was piloted and tested on local childcare centres.

**Purpose of this study**

The purpose of this study was to investigate the use of the Early Childhood Environment Rating Scale - Revised to describe the quality
of education and care environments provided by childcare centres in Singapore.

The research questions are:

1. Do the subscales correlate with each other?
2. Does quality of educational and care provisions vary across childcare centres?
3. What is the quality of specific areas of educational and care provisions in our childcare centres?

**Method**

Proportionate random sampling procedure was used to select 30 childcare centres. As a result, three state-affiliated, four organizational, 19 private, one workplace and three voluntary centres were recruited for the research project. Four observers (two childcare centre leaders and two ministry officers) were trained to rate the 30 centres. The agreement among raters (within 1 point) ranged from 70.13 to 94.45 and a correlation coefficient range of 0.64 – 0.92 was obtained.

**Results and Discussion**

The findings of this study, as shown in Table 1, indicate that different areas of the childcare environment are related with each other except

**Table 1.** Inter-correlations between Scores of Total ECERS and Subscales.

<table>
<thead>
<tr>
<th></th>
<th>Space &amp; furnishings</th>
<th>Personal care routines</th>
<th>Language-reasoning</th>
<th>Activities</th>
<th>Interaction</th>
<th>Programme structure</th>
<th>Parents &amp; staff</th>
<th>Total ECERS</th>
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<tbody>
<tr>
<td>Space &amp; furnishings</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Personal care</td>
<td>1.000</td>
<td>.422**</td>
<td>.657**</td>
<td>.515**</td>
<td>.628**</td>
<td>.517**</td>
<td>.296</td>
<td>.789**</td>
</tr>
<tr>
<td>Routines</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Language-reasoning</td>
<td>1.000</td>
<td>.295</td>
<td>.552**</td>
<td>.506**</td>
<td>.513**</td>
<td>.425**</td>
<td>.708**</td>
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<td>Activities</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>1.000</td>
<td>.400*</td>
<td>.812**</td>
<td>.432*</td>
<td>.246</td>
<td>.727**</td>
<td></td>
<td></td>
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<tr>
<td>Programme structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents &amp; staff</td>
<td>1.000</td>
<td>.825**</td>
<td></td>
<td></td>
<td>.458*</td>
<td>.495**</td>
<td></td>
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<tr>
<td>Total ECERS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1.00</td>
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</table>
for the subscale, *Parents and Staff*. This can possibly mean that good provision of one area in the programme is associated with good provision in the other areas. However, the significant correlations can also mean that some items within each subscale may overlap with other items of another subscale. This suggests that the subscales may be measuring the same processes and perhaps some items are redundant.

There are very few psychometric investigations into the ECERS; however, it is has been argued by Scarr, Eisenberg and Deater-Deckard (1994) that many of the items in the measure are redundant. In their analyses, the investigators found that a single quality factor consisting of no more than 12 items from the scale was adequate to obtain reliability and validity. They found these 12 items correlated highly with each other and with the total score. High correlations between subscales were also obtained in another study by Munton, Rowland, Mooney and Lera (1996). They obtained a correlation coefficient range of 0.41 to 0.80 in their analyses and the results of factor analysis suggested that the subscales scores could be aggregated into one unitary measure of quality. This seemed to imply that total score of ECERS is sufficient to measure quality. Scarr and her team (1994) went further to suggest that 12 items are enough to represent a global assessment.

However, a global indicator of quality is not enough information to assist practitioners and programme evaluators in improving the childcare environment for child development. The different aspects of the environment as assessed by the ECERS have practical value in providing specific information.

The findings of this study show that, on average, the quality of education and care provisions in our centres range between minimal and just below good (refer to Table 2). The global mean score is 3.76 which is slightly above minimal. Figure 1 shows that there is a variation of quality: Some centres are good whereas others are not. For example, two centres scored 2.25 which is below minimal quality and four centres scored 5.25 which is above good quality. Figures 2a – 2g show the mean scores of items within each of the subscales of ECERS-R. The findings suggest areas of weaknesses and strengths. For example, Figure 2a shows that furnishing for relaxation (e.g. cushions, rugs, soft toys) is lacking with a mean score of 2.65. The findings shown in Figure 2g also suggest inadequate provision for personal needs (e.g. staff lounge, personal storage space) of staff. Results also show that, with reference to Figure 2d, specific areas of activities offered to children such as art, nature/science, block play, technology and promoting acceptance of diversity appear to be lacking.
Table 2. Mean Scores on ECERS Subscales and Standard Deviations and Range Across Centres.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
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</thead>
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<tr>
<td>Personal care routines</td>
<td>3.90</td>
<td>1.28</td>
<td>1.83</td>
<td>5.83</td>
</tr>
<tr>
<td>Language-reasoning</td>
<td>4.33</td>
<td>1.44</td>
<td>1.25</td>
<td>7.00</td>
</tr>
<tr>
<td>Activities</td>
<td>3.08</td>
<td>0.91</td>
<td>1.70</td>
<td>5.30</td>
</tr>
<tr>
<td>Interaction</td>
<td>4.40</td>
<td>1.45</td>
<td>1.20</td>
<td>7.00</td>
</tr>
<tr>
<td>Programme structure</td>
<td>3.57</td>
<td>1.45</td>
<td>1.33</td>
<td>6.67</td>
</tr>
<tr>
<td>Parents and staff</td>
<td>4.42</td>
<td>1.01</td>
<td>2.00</td>
<td>5.87</td>
</tr>
<tr>
<td>Total ECERS</td>
<td>3.76</td>
<td>0.85</td>
<td>2.16</td>
<td>5.37</td>
</tr>
</tbody>
</table>

Figure 1  Distribution of ECERS scores across centres.
Figure 2a  Mean scores of items in Personal Care Routines Subscale.

Figure 2b  Mean scores of items in Personal Care Routines Subscale.
Figure 2c  Mean scores of items in Language-reasoning Subscale.

Figure 2d  Mean scores of items in Activities Subscale.
Figure 2e  Mean scores of items in Interaction Subscale.

Figure 2f  Mean scores of items in Program Structure Subscale.
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Parents and Staff

There are areas of good quality provisions such as furnishing for routine care, play and learning (Figure 2a), encouraging children to communicate (Figure 2c), good interaction and cooperation among staff, effective supervision and opportunities for professional growth (Figure 2g).

**Figure 2g** Mean scores of items in Parents and Staff Subscale.

There are areas of good quality provisions such as furnishing for routine care, play and learning (Figure 2a), encouraging children to communicate (Figure 2c), good interaction and cooperation among staff, effective supervision and opportunities for professional growth (Figure 2g).

**IMPLICATIONS FOR THE EARLY CHILDHOOD EDUCATORS**

The study suggests some practical and concrete ways of improving the quality of education and care environment in childcare centres.

1. Improve in the area of providing for personal and emotional needs of children. Children spend at most 12 hours a day in interaction with peers in large groups. They need to be given opportunities where they can opt to have some privacy for quiet and being alone. Areas of quiet can be created by setting up a small corner with a beanbag or armchair with some books and music post, or a small desk and a chair with some paper and writing / drawing instruments. Children are then able to withdraw from the main hive of activities, escape into books, music or scribble and doodle quietly. This will help children cultivate a habit of learning to be
still, to reflect and ponder over their thoughts, experiences and feelings which is sadly lacking in our urbane, fast-lane lifestyles of doing, performing and delivering.

2. Refocus the emphasis of the curriculum to encourage skills such as creating, constructing, problem solving and asking questions. These skills are developed through activities like art, block play, nature/scientific studies and appropriate technology. Provide more of these activities to encourage curiosity and inquiry. These skills are life long skills that will support children’s worthy aspirations in the adult world.

3. Provide more for the personal and emotional needs of childcare staff. Like children in the centre, staff will need to withdraw and have some personal space and time to break the day’s activities. When planning a centre, allocate space for a staff room and provide storage space for individual staff. A comfortable and personal working environment is important to allow teachers some time out and the supportive climate will encourage a sense of pride and motivation in their work with children.

4. The ECERS-R can also be used as a self-study guide for teachers. It is user friendly and not time consuming. The descriptors of what makes a level of quality allow the teacher to establish what his/her current teaching practice is and how he/she can improve on it. However, some minor modifications need to be made. For example, descriptors of room arrangement had to be modified by this research. The ECERS-R assumes that classes are self-contained with all the appropriate learning centres. However, this is not so in Singapore centres due to limited space. As a result some learning corners are shared e.g. dramatic play, science and sand/water play. Therefore, the items need to be adjusted. As a guide, the researchers of this project felt that it is essential to have learning corners such as a book corner, manipulative and construction centres set up within the classroom and readily accessible and available for children’s use. With the shared learning centres, it is essential that these be regularly scheduled in the daily timetable, offering a substantial amount of time for children to actively participate in them.

The ECERS-R identifies broad aspects of the childcare environment. The rating scale is not a precise measure of the day-to-day experiences of the child in a centre. Any study of quality indicators of the early learning environment will need to investigate deeper by observing child and adult behaviours/involvement in the classroom. Hence, the
addition of such data collection techniques like systematic observations will be a valuable supplement to the ECERS-R. Nevertheless, the instrument is very useful in giving early educators an overview of what is provided in the childcare environment and it offers signposts to specific areas for deeper investigations.

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REFERENCES


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