The Relationship Between Caregiver Training and Global Quality, Sensitivity, and Language Strategies

Amelia Hickey

A Thesis

in

The Department

of

Education

Presented in Partial Fulfillment of the Requirements
For the Degree of Master of Arts (Child Study) at
Concordia University
Montreal, Quebec, Canada

April 2008

Your file Votre référence
ISBN: 978-0-494-40802-5
Our file Notre référence
ISBN: 978-0-494-40802-5

Abstract

The Relationship Between Caregiver Training and Global Quality, Sensitivity, and Language Strategies

Amelia Hickey

This study was conducted to examine two specific types of caregiver training in terms of the global quality provided by the caregivers, the level of sensitivity of the caregivers, and the language strategies used by the caregivers during structured story readings. A total of 18 female caregivers, working in day care centers located throughout the Montreal metropolitan area, participated in the study, and were between the ages of 25 and 52. Nine caregivers had previously completed a 3-year Early Childhood Education Program at a small Montreal college, while nine had previously completed a 14-month Attestation program at the same college. The researcher, as well as a research assistant, conducted observations over two half days in each classroom, as well as conducing an interview with each caregiver to obtain demographic data. Global quality was measured using the Early Childhood Environment Rating Scale-Revised (Research Version) (Cassidy et al., 2005), sensitivity was measured using the Caregiver Interaction Scale (Arnett, 1989), and language strategies were measured using the Teacher Interaction and Language Rating Scale (Girolametto et al., 2000). Results revealed that caregivers who had completed the three-year ECE were rated significantly higher on all measures (global quality, sensitivity, and language strategies), highlighting the importance of experiencing an intense training program with more coursework and more fieldwork.

Acknowledgements

The writing of this thesis would not have been possible without the help of a number of people. First, I would like to thank my amazing supervisor, Ellen Jacobs, for her incredible support and guidance over the last few years. You have gone above and beyond being my supervisor, and I have so much admiration and respect for you. I would also like to thank my committee members, Nina Howe and Harriet Petrakos, for their continued support and help throughout this entire process. My data collection would not have been possible without the help of Arla Connell, who gave so much of her time and energy during those months. A big thank-you goes out to Andrea Bruno and Fiona Rowlands, who have continuously encouraged and supported me along the way. Thank-you for the long chats, the great dinners, and all the fun times! You have helped to make this experience unforgettable.

Finally, I would like thank my family. I would not be where I am without the love of my Mom and Dad, who have always taught me to believe in myself. You have been my inspiration throughout my university career, and you will continue to be my inspiration. To my brother, thank-you for always being able to make me laugh. Last (but certainly not least!) I would like to thank my boyfriend, Aaron, who has been unbelievably supportive throughout the writing of this thesis. Thank-you for your unwavering encouragement and for teaching me to not take myself so seriously.

Table of Contents

List of Tables

The Relationship Between Caregiver Training and Global Quality, Sensitivity, and Language Strategies

Introduction

In recent years, women have continued to enter the workforce in increasing numbers. Many tend to postpone having children until they are well established in their careers, and once their children are born many choose not to leave the workforce in order to stay home and raise their preschool children. As a result, these women require non-maternal care for their preschoolers, since spending a great deal of time away from work may have an impact on their career. Furthermore, many women who are not in high paying positions cannot leave their jobs because their family cannot afford the financial strain that comes along with a woman's withdrawal from the workforce, despite the fact that there are government based maternity leaves available to them. Given the pressure to return to work before their children are of school age, many families are in need of a safe and stimulating environment for their preschool children (Personal Communication, Ellen Jacobs, 2008).

In Quebec the response to the increased demands for child care have resulted in a government sponsored program of universally affordable and accessible child care. Once this program had been announced, thousands of new child care spaces had to be opened within a very short period of time (approximately 5 years) in order to meet the increased demands from parents for out of home care. While this was occurring, the Famille, Ainés, et Condition Féminine Québec had established regulations that two of three caregivers working in child care centers were required to have completed training programs in child

care. As a result of these thousands of new spaces, as well as the training regulations, it was necessary that many new caregivers be trained in order to be qualified to work in these child care centers. To meet these requirements the government created a short training program option in addition to the existing three-year college program. It was expected that the short training program would provide the necessary training for the delivery of good quality child care, allowing these caregivers to work in both non-profit (centers that operate on Government funding, and all money taken in goes back into the center) and for-profit centers (centers who operate with the goal of making a profit). With the large number of parents choosing centre care for their children, the quality of care that these children receive has become a major concern (Personal Communication, Ellen Jacobs, 2008).

Research has shown that high quality care is important, as it is related to positive child outcomes (Burchinal et al., 2002; McCartney, 1984). One of the first studies to examine quality of care was conducted by Ruopp, Travers, Glantz, and Coelen (1979). One focus of this study was the structural features of care, such as ratios and group size. In the studies that followed, there were two categories of care that were examined: structural quality and process quality. Structural quality is composed of all regulatable factors in child care centers. Process quality is concerned with hard to measure factors, including those that are associated with a stimulating and enhancing environment, for example, caregiver/child interactions that occur in the classroom. Both categories of quality will be discussed more in detail below.

Caregiver training has been consistently linked to high quality care particularly in the analyses of process quality. Previous studies have found that the training of the

caregivers employed in center based child care has an impact on the quality of care that children receive (Howes, 1997; Norris, 2001; Burchinal, Cryer, & Clifford, 2002). This literature review will focus on the effects of caregiver training on three main aspects of quality: global classroom quality, caregiver sensitivity, and the ways in which caregivers use language in the classroom. For the purposes of this paper, the term *caregiver* will be used in place of *educator* and *teacher*.

Literature Review

Quality of Care

Quality of care, since it is such a broad term, is hard to define and conceptualize (Phillips & Howes, 1997). Researchers have attempted to address the concept of quality from two perspectives. These include structural quality, which encompasses the regulatable aspects of child care quality such as child-caregiver ratios, and process quality, which is a composite of all that transpires in a child care setting, including hard to measure factors such as activities and interactions. Process quality is subsumed by the global quality, which is measured mainly through rating scales such as the ECERS-R (Harms, Clifford, & Cryer, 2005) These two aspects of quality of care will be discussed in turn.

Structural quality. Structural quality factors can be regulated by the government, and includes caregiver training, child-caregiver ratios, wages, group size, and center size.

Caregiver training. Caregiver training refers to any formal training in child care specifically and/or education programs. This includes college and university education, workshop training, as well as professional development training. Although having a highly educated and experienced caregiver does not guarantee high quality care, it should

increase the likelihood of children receiving high quality care, since caregivers who are trained tend to have higher self-esteem and are more professional than those who are not trained (Lamb & Ahnert, 2006). Caregiver training has been shown to contribute to higher scores on measures of quality (Lamb & Ahnert, 2006). The training and experience that caregivers in center-based child care have has been determined to have an impact on how they perform in their job, and this includes how they interact with the children in their care (Arnett, 1989; Howes, 1997; de Schipper, Risken-Walraven, & Geurts, 2006). However, one important debate has been whether total years of education are more or less important than the content of caregiver education (Phillips & Howes, 1987). For instance, some studies (Ruopp et al., 1979) have found that the content of education (child-related education) is more important than number of years of formal education. Other studies (Burchinal et al., 2002) have found that the combination of formal education with professional development and workshop training results in the highest quality caregivers.

Ruopp et al. (1979) were among the first to conduct research regarding the best structural predictors of quality day care. The results of their study showed that for preschool-aged children, group size and caregiver training were the best predictors of quality care, whereas caregiver-child ratios were not a strong predictor of quality of care. However, the infant and toddler classrooms showed somewhat different results for these groups; caregiver-child ratios, as well as group size were significant predictors of quality child care. When classrooms had fewer caregivers and many children, the caregivers spent much of their time controlling the children and managing behaviour rather than engaging in social interactions with the children (Ruopp et al., 1979). As compared with

research that has been conducted more recently (Phillips et al., 2000), the study by Ruopp and his colleagues showed mixed results. On the one hand, they found that caregiver training was a significant predictor of high quality care in the preschooler classrooms, but not in the infant and toddler classrooms. On the other hand, caregiver-child ratios were a significant predictor of high quality care in the infant toddler classrooms, but not in the preschool classrooms. Since Ruopp and his colleagues conducted their study, many other studies have followed.

Phillips et al. (2000) conducted a study in which they examined specific regulatable factors of child care centers. Structural features that were examined included wages, ratios, group size, caregiver education, and caregiver training. They assessed the classroom quality of infant, toddler, and preschool classrooms by using the ITERS (Harms, Cryer, & Clifford, 1990) and the ECERS-R (Harms, et al., 2005). Caregiver education was measured on a 9-point scale, with the lowest (1) being no high school diploma, and the highest (9) being a Post Master's Degree. The results showed that in the infant, toddler, and preschool classrooms, global quality was positively correlated with caregiver education (r = .24, .32, and .30, respectively). Within the infant and toddler classrooms, quality of care was positively correlated with every structural feature, whereas in the preschool classrooms, group size was the only factor not significantly correlated with quality of care. Furthermore, both caregiver education (formal education) and caregiver training (pre service as well as in-service training) were significantly correlated with the scores obtained for classroom quality in the preschool classrooms (Phillips et al., 2000).

Caregiver-child ratios. Caregiver-child ratios are also a predictor of global quality scores. The explanation for this may be that if a caregiver has fewer children in her classroom, she has more time to devote to each child. Caregiver sensitivity becomes apparent in situations where the caregivers have the opportunity to engage in one-to-one activities with a child, as compared to large groups where the caregiver's time and attention is divided among a larger number of children. In smaller groups, caregivers are also more emotionally available to individual children, and this may not be possible in larger groups (Lamb & Ahnert, 2006).

Many researchers have linked ratios to the quality of care (Berk, 1985; Howes, 1983). Howes (1997) reviewed a large national study (CQO) that examined ratios of caregivers to children in center-based care. While there are no national regulations pertaining to ratios in child care, there have been recommendations in this regard. For instance, recommended ratio for children from 0 to 12 months of age is 1:3; 12 months to 2 years of age is 1:5; age 2 to 3, is 1:6; age 3 to 5, is 1:8; and age 6, is 1:10 (Howes, 1997). The classrooms in this study were coded as either abiding by these recommendations or not. The results showed that compliance with the recommended ratios was related to the display of warmth by the caregivers towards the children in their classroom, as shown by the scores obtained on the Caregiver Interaction Scale (CIS) (Arnett, 1989). The behaviours assessed included sensitivity, harshness, detachment, and responsiveness (Howes, 1997). An important issue related to non-compliance with recommended ratios, is the possibility that this form of non-compliance extends to recommendations and/or regulations other than ratios that are related to quality (Personal Communication, Ellen Jacobs, 2006).

de Schipper et al., (2006) also found that caregiver-child ratios have an impact on the quality of interactions between the children and caregivers in center-based care. Sixty-four child care centers in the Netherlands were studied with a total of 217 caregivers participating. Caregiver-child ratios were manipulated in order to examine the effects on the interactions. The caregivers were interviewed by the researchers to obtain background information, and they were videotaped during two 10-minute periods of structured activities (the first period involved books and play dough, the second involved puzzles and drawing materials). The interactions during the structured activities were assessed using a total of eight rating scales. To rate the interactions between the caregivers and children throughout the morning period, the CIS (Arnett, 1989) was used (the score for the CIS was renamed "overall quality of caregiver"). There were two caregiver-child ratios compared: 1:3 and 1:5 (de Schipper et al., 2006).

For structured play, six rating scales were used for the caregivers. The following scales were adapted from those developed by Erikson, Sroufe, and Egeland (1985): providing emotional support, respect for children's autonomy, adequacy of structure and limit setting, and quality of instructions. The last two rating scales were adaptations of other scales from Erikson et al. (1985) and the NICHD's Observational Record of the Caregiving Environment (1996), and addressed negative regard (caregiver's expression of impatience, irritation, anger, dislike, distrust, and rejection), and expression of positive affect. The ratings scales for the children were: well-being (expression of happiness and satisfaction) (based on the Observation Record of the Caregiving Environment scale (ORCE) (1996) for positive mood), and compliance with the caregiver which were based on a combination of scales developed by Erikson et al. (1985) for child compliance. Low

scores on compliance with the caregiver indicate reluctance to cooperate with the caregiver, while high scores indicate a willingness to cooperate with the caregiver, and to become involved in their activities (de Schipper et al., 2006).

The results showed that during structured activities, there was a significant positive relationship between caregiver-child ratios and the overall quality of the behaviour of the caregiver (this score was obtained using the CIS). In groups with fewer children, the caregivers were more likely to provide emotional support, show respect for the children's independence, and show higher quality in their instructions. Furthermore, there was a significant interaction between ratio and children's age with caregiver-child ratio having a more profound impact on younger children, and this finding is consistent with the work conducted by Ruopp et al. (1979). The researchers suggested that this child-caregiver ratio only impacts these issues when the child is younger than when the child is older (the age of the children ranged from 10 to 50 months of age, with an average age of 34.15 months) (de Schipper et al., 2006). It should be noted that the authors did not indicate specifically how the ages of "younger" and "older" children were determined. For the children, the results showed that the effects of ratio were significant with regards to the overall behaviour of the child. In particular, children in classrooms with caregiver-child ratios of 1:3 showed higher scores on well-being and cooperation than children in classrooms with caregiver-child ratios of 1:5 (de Schipper et al., 2006). The results of this study show that ratios do have an impact on both the behaviour of the caregiver as well as the child. Furthermore, lower caregiver-child ratios (1:3 as compared to 1:5) result in more desirable behaviours for both caregiver and child.

Caregiver wages. Scarr, Eisenberg, and Deater-Deckard (1994) also examined structural measures of quality, as well as measures of process quality. In order to measure the structural (regulatable) aspects of quality, issues such as ratios, caregiver wages, group size, caregiver training, and caregiver education were examined. Process quality was measured by using the ECERS-R (Harms et al., 2005) and ITERS (Harms et al., 1990), as well as the *Assessment Profile for Early Childhood Programs* (Abbott-Shim & Sibley, 1987). The *Assessment Profile* is similar to both the ECERS-R and ITERS in that it assesses program quality. More specifically, it assesses administrative quality as well as the quality of child care programs from infancy through school-age. The following dimensions of the early childhood programs are examined in depth: safety and health, nutrition, learning environment, interacting, individualizing, scheduling, and curriculum (Assessment Profile for Early Childhood Programs, www.qassist.com/asssm). The results of the study showed that caregiver wages were the most significant predictor of the quality of care that the children received. While not significant, caregiver: child ratios (r = .36), caregiver training (r = .35), and caregiver education (r = .37) were correlated with the quality of care, as measured by the ECERS (Harms et al., 2005) and ITERS (Harms et al., 1990). Group size, a structural measure, was not correlated with the global quality (r = -.10) (Scarr et al., 1994).

The fact that wages were found to be the best predictor of quality of care is not surprising. Caregivers who earn higher wages may have more incentive to perform in their job due to job satisfaction (Bloom, 1985) than those who earn lower wages. Furthermore, although ratios, training, and education were not statistically significant, there was a small correlation between each of these structural measures and the global

quality of these classrooms, showing that these factors do play a role in the quality of care. It should be noted that caregiver wages and caregiver training were examined separately through the demographic information that was collected from each caregiver (Scarr et al., 1994).

Process quality. The process quality of a classroom encompasses a number of different factors. The first is global classroom quality, which is typically measured using the ECERS-R (Harms et al., 2005) or the ITERS (Harms et al., 1990). These two scales measure classroom quality by examining a number of subscales: space and furnishings, personal care routines, language and reasoning, activities, child-caregiver interactions, program structure, and issues regarding parents and staff. The items in each of these subscales (43 items for the ECERS-R and 37 items for the ITERS) are rated on a scale from 1 (inadequate), to 3 (minimal), 5 (good) and 7 (excellent). For each subscale, the items are rated, and an average score for that subscale is produced. For instance, if a classroom obtains a rating of 6 in space and furnishings, this indicates that the materials and equipment provided for the children are better than good but not quite at the level for an excellent rating. The same applies to the overall ECERS-R score. If a classroom obtains an average score of 5 (obtained by averaging all seven subscales), this indicates that "good" quality care is being provided. It should be noted that although the centre may receive an overall score of 5, it is possible that some subscales may fall below adequate or "minimal" care. In other words, while the overall score can be of good quality, there may be some areas that are weaker and may be below what is desirable.

Recently, Cassidy, Hestenes, Hegde, Hestenes, and Mims (2005) conducted a study examining the quality of 1313 child care classrooms (preschool age) in North

Carolina, and their results allowed them to develop a shortened version of the ECERS-R, which includes 16 items rather than the 43 items of the full scale. The shortened version of the scale has two subscales rather than seven subscales; the Activities/Materials subscale has nine items, and the Language/Interaction subscale has seven items. The researchers found that the internal consistency between the original ECERS-R and the combined factors (Activities/Materials and Language/Interaction) was very high (r =.90), allowing them to conclude that these 16 items "mirrored the overall ECERS-R" very well (p. 355). For instance, items involving materials such as "Art," "Blocks," and "Dramatic Play" reflects what is available for the children in terms of materials and supplies as well as frequency of availability of the materials and this reflects program content. Items revolving around interactions between children and caregivers such as "Informal use of Language," "Discipline," and "General Supervision of Children" address the kind of interactions and communication that occur within the classroom such as how caregivers deal with social conflicts and disciplinary issues, as well as how caregivers communicate with the children in relaxed settings such as lunch/snack time and free play.

Previous research has shown that centers rated higher on measures of global quality tended to have caregivers who had more training and more education as compared to centers with lower scores on measures of global quality (Howes, 1997; Phillips et al., 2000). Burchinal et al. (2002) conducted a study in which they examined the relationship between classroom quality and the level of formal education of the caregivers. After completing the ECERS and ITERS, the results showed that caregivers with higher levels of formal education, and caregivers who attended professional development training were rated as providing a higher global quality environment, as compared to caregivers with

lower levels of formal education and with less professional development training. More specifically, caregivers who had obtained baccalaureate degrees or degrees in Early Childhood Education provided higher quality care than educators who had only professional development training (Burchinal et al., 2002).

Ghazvini and Mullis (2002) also had research findings that support the relationship between that caregiver training and global environment quality. In their study, they examined potential predictors of quality in child care centers. These predictors included two structural measures (ratios and group size), as well as process measures. The results showed that global quality was highly correlated with specialized caregiver training. Classrooms with highly trained caregivers were rated higher on the ECERS-R (Harms et al., 2005) and ITERS (Harms et al., 1990), while caregivers who had less training obtained lower scores on the ECERS-R (Harms et al., 2005) and ITERS (Harms et al., 1990). These findings are consistent with previous studies (Ghazvini & Mullis, 2002). It should be noted that there was no information available regarding the definition of "specialized training" for this study. All attempts to contact the authors to obtain the definition were unsuccessful.

Another issue with regards to training is the frequency with which the training occurs. Norris (2001) examined the relation between quality of care and training in family day care. She included caregivers who had no in-service training (i.e., had not taken part in any workshops), intermittent training (i.e., had taken part in some workshops at some point in their career), and continual training (i.e., had continuously taken part in workshops throughout their career). Demographic data showed that those in the continual training group had completed significantly more formal education than

participants in intermittent training. It should be noted the amount of training completed by the caregivers was optional, and caregivers were placed in specific groups based on their previous amount of training. To assess the quality of the day care, the FDCERS (Family Day Care Environment Rating Scale) was used (Harms & Clifford, 1989). This scale used was composed of six subscales: physical space, basic care, language and reasoning, activities, social development, and adult needs. As with the ECERS-R (Harms et al., 2005) and ITERS (Harms et al., 1990), the FDCERS (Harms & Clifford, 1989) is rated on a scale from 1 (inadequate) to 7 (excellent).

The results of the study showed that the caregivers who continually participated in training had overall higher FDCERS scores than caregivers with intermittent training, or caregivers with no training. Furthermore, caregivers who continuously received training scored higher on a number of the subscales as compared to the caregivers who received intermittent training or no training. These subscales were: *learning activities, basic care, and language and reasoning.* In terms of the *space and furnishings* subscale, there were no significant differences among the three groups, because this is not under the direct control of the caregiver (Norris, 2001).

Overall, the study conducted by Norris (2001) showed that caregivers who participated in continuous training in the areas of child development and child care provided higher quality care in family day care centers than caregivers who did not receive similar training.

Sensitivity

Another aspect of quality care involves the emotional care that children receive in child care centers. While it is important for their basic needs to be met (e.g., food and

supervision), it is also important that the caregivers in these centers provide children with emotional support as well. Many children spend up to ten hours per day in out of home care, and having a consistent, attentive caregiver is essential for their emotional support.

Since so many children are experiencing child care outside of the home, it is important that they have an adult figure who is physically and emotionally available to them. Caregivers in centre-based care can act as these figures. Furthermore, it as been shown that caregivers who have more education and training can become attachment figures through their sensitive and positive interactions with the children in their care (Howes et al., 1998). Sensitive caregivers are important to children for many other reasons. For instance, in terms of peer interactions, caregivers who show sensitivity provide children with the ability to handle difficult interactions with their peers by teaching them how to deal with their feelings. These caregivers are more likely to model specific behaviours and provide guidance to the children in their class (Lamb & Ahnert, 2006). Caregiver training and sensitivity have been examined by a number of researchers, and many of these studies have found that training does have an impact on the sensitivity of caregivers in child care classrooms.

Arnett (1989) was interested in the level of training of caregivers in child care centers located in Bermuda, and its effect on their interactions with the children in those centers. He studied 59 caregivers, whose education ranged from no training (level 1), to the first two courses at the Bermuda training program (one course was in communication, and the other was in child development) (level 2), the entire training course in the Bermuda training program (the first two courses included in level 2, as well as one course in child care, and the other in preschool activities) (level 3), and a four-year ECE degree

or a degree in a related field (level 4). The Caregiver Interaction Scale (CIS) was used to assess the caregivers, and the results were as expected. Caregivers who had received some or all of the training at the Bermuda College were rated higher on the CIS on the *positive interaction* factor than educators with no training at all. Furthermore, caregivers who had earned a degree in ECE or a related field were rated higher on the *positive interaction* factor than the caregivers from the Bermuda College. The results also showed that those caregivers with Bermuda College courses scored lower on detachment than those with no training, and those with a degree scored lower on detachment than those with Bermuda College courses. In this study, caregiver training clearly was related to the quality of the interactions with the children, as caregivers with more training scored higher on the positive interaction scale. These caregivers were more enthusiastic, showed more warmth towards the children, and encouraged children to get along with their peers. These behaviours tend to be displayed by caregivers who are sensitive in their interactions with the children in their care.

From Arnett's (1989) study, it would seem that a highly trained caregiver, who has been trained specifically in the area of child care, will be more likely to engage in sensitive and positive interactions with the children in his/her care, as compared with a caregiver who has limited training in the field of child care, or a caregiver who has no training at all. Rhodes and Hennessy (2000) showed that caregivers can be trained to increase their level of sensitivity and decrease in their level of detachment. Caregivers in their study, following an intervention, were rated higher on the CIS in the area of sensitivity than before the intervention. The level of detachment among the caregivers decreased, showing that if caregivers are not displaying satisfactory levels of sensitivity

with the children in their classrooms, they can learn how to do so. They can be taught the importance of being a sensitive caregiver and how sensitivity will benefit the children in their care.

Bredekamp (1990) believes that the most important indicators of the quality of child programs are specific characteristics of the caregivers in those programs. There is a large body of research that suggests that the training of caregivers is related to the behaviours they exhibit in the classroom. More specifically, the training of caregivers is related to the quality of the social interactions they engage in with the children in their classroom (Howes, 1983). Rhodes and Hennessey (2000) compared caregivers who received training in caregiver sensitivity to caregivers who did not receive such training. The researchers expected that caregivers who received training would make improvements on their scores of caregiver sensitivity. The researchers completed the Caregiver Interaction Scale (Arnett, 1989) measuring positive relationship, punitiveness, permissiveness, and detachment. The results showed that there was a significant post-test difference between the training and no training groups on the *positive relationship* and *detachment* scales, but not on the *punitiveness* and *detachment* scales. The fact that there was a difference on the *positive relationship* scale is important to note because this scale includes items that are related to the warmth of the caregiver (Rhodes & Hennessey, 2000). These results show that that training can indeed have an impact on the sensitivity of caregivers in child centers.

Ghazvini and Mullis (2002) also investigated caregiver training and its relationship to caregiver sensitivity. Their results show a significant positive correlation between specialized training and caregiver sensitivity. Results from the CIS (Arnett,

1989) showed that caregivers who had more specialized training were more likely to display sensitive behaviours towards the children in their classroom. Furthermore, caregivers who had more specialized training were less likely to be punitive or detached (Ghazvini & Mullis, 2002). Perhaps specialized training emphasizes the importance of a sensitive, warm environment, and the possible negative impacts that a harsh and cold environment can have on children in center-based care. Those who take part in intensive child care training programs are possibly more likely to understand the developmental needs of preschool children, know how to work effectively with them and understand that sensitivity in their daily communication with children is important in meeting children's developmental needs.

Burchinal et al. (2002) found similar results with regards to caregiver training and caregiver sensitivity. As mentioned previously, the researchers examined formal education in early childhood as well as professional development training. The levels of training ranged from caregivers who had obtained a degree in ECE, or in a related field (level 1), to caregivers who had an Associate of Arts (AA) degree in ECE, or in a related field (level 2), to caregivers who had completed some coursework in ECE, or in a related field (level 3), to caregiver who had taken part in workshops only or had no training at all (level 4) (note that this rating scale is in the opposite direction of previous scales).

The researchers found that the educators who had formal training in ECE were rated highest on the CIS, as compared to caregivers in the other three levels. More specifically, they were rated higher in the area of sensitivity. Furthermore, caregivers who had completed the highest level of training were also rated higher on the ITERS, and

the ECERS-R rating scales indicating that they offered the children higher quality care than caregivers in the other three groups (Burchinal et al., 2002).

Howes (1997) conducted a study in which she examined teacher background and how it was related to the experiences of children in center based care. The data set for this study emanated from The Cost, Quality, and Outcome Study (CQO), and the Florida Quality Improvement Study. The results of the CQO showed that caregivers with more education were rated as more sensitive as assessed by the CIS (Arnett, 1989). More specifically, caregivers with a Bachelor of Arts or any higher level degree were found to be more sensitive than caregivers with Associate degrees in ECE, who were also rated as more sensitive than caregivers with less education. The author suggested that although some people believe that too much schooling can cause educators to lose their sensitive qualities, the results from this study say otherwise. The caregivers with the highest level of education showed more sensitivity than their fellow caregivers with less education.

Language Strategies

Just as high levels of sensitivity have been found to be related to the training of caregivers in child care centers, the language that caregivers use with children is also impacted by the training that they receive before entering the workforce.

Fodor, Bever, and Garrett (1974) have suggested that if a child is exposed to an environment that is verbally rich, and the child is given opportunities to take part in meaningful conversations with adults, these factors may have a positive impact on a child's language development. They also suggested that differences in how children are raised are related to their language development and skills. With regards to child care,

then, the differences in the experiences of children in child care could result in differences in their language development (McCartney, 1984).

McCartney (1984) conducted a study in which she examined the relationship between the quality of child care and the language development of children enrolled in center-based care. Using the ECERS-R (Harms et al., 2005), the quality of the child care environment was assessed. The quality of talk with the caregivers was assessed using four factors: control (controlling behaviour), expressive (used to express feelings or attitudes), representational (giving or requesting information), and social (engaging in social relations).

The most significant result was that the global quality of the child care environment was related to language development for the children. Furthermore, children who attended child care where there was more caregiver speech than peer speech obtained higher scores on measures of language development, which included the Peabody Picture Vocabulary Test (PPVT-R), and the Preschool Language Assessment Instrument (PLAI) (McCartney, 1984). Also, the total number of statements by the children was a predictor of the children's scores on the measures of language development. Although these language measures are child outcomes (rather than focusing mainly on the strategies that the caregivers use), it does illustrate the importance of the quality of care in relation to child development, more specifically, language development.

According to Tizard, Philps, and Plewis (1976), caregivers who receive specialized training in language are more likely to be responsive in their interactions with children, as compared to caregivers who do not receive specialized training. In this study specialized training was defined as training that included workshops and professional

development in areas of child development and related issues. Tizard et al. (1976) also found that the verbal interactions between caregivers and children increased in amount as a function of the caregiver's level of training. Also, the level of cognitive complexity of the caregiver's speech was higher for those who had more training. Caregivers without training were found to be more likely to be more directive with the children in their care than those with training (Girolametto, Weitzman, & Greenberg, 2003). When children engage in directive interactions with their caregivers, they tend to verbalize less with both their caregivers and their peers. Furthermore, these types of interactions do not challenge children cognitively, since the caregivers are not encouraging them to explain themselves, or expand upon information. Girolametto et al. (2003) suggest that it is important for caregivers to be trained in ways to interact, both verbally and non-verbally, with children so they can help the child's language develop to its full potential (Girolametto et al., 2003).

Many caregivers tend to control the conversations they take part in with children, and do this by not engaging in turn-taking or leaving sufficient time or opportunity for the children to contribute to the conversation (Girolametto et al., 2000). Girolametto et al. (2003) conducted a study in which they examined the effects of in-service training on the language strategies of caregivers in center-based child care. More specifically, the goal of this study was to "determine if in-service training can effectively increase caregivers' use of interactive language stimulation techniques and if it is accompanied by concomitant changes in children's verbal participation" (p. 300). The researchers suggested that specialized training in areas of child development would be an important issue with regards to the quality of care in these centers. One important question in this

study was whether or not the effects of the in-service training would be seen in the follow-up studies. The caregivers engaged in two 15-minute activities with the children (a reading activity and a play dough activity, pre and post-intervention, the intervention took place over a period of 14 weeks), and their speech strategies were assessed using the Teacher Interaction and Language Rating Scale (Girolametto, Weitzman, & Greenberg, 2000). This scale contains 11 items on a 7-point scale that reports how often the caregiver uses a certain language strategy. These items include: *wait and listen, follow the children's lead, join in and play, be face-to-face, use a variety of questions, encourage turn-taking, scan, imitate, use a variety of labels, expand, and extend* (Girolametto et al., 2003).

The results of the study showed that the in-service training did have an impact on the strategies used by the caregivers. Caregivers in the experimental group spoke significantly more and produced more words per minute than those in the control group. Caregivers in the experimental group also "read the scripted text significantly less often than those in the control group" (p. 304). The researchers suggested that this could be explained by the fact that the experimental group chose to use the wordless picture book more often during the post-test as compared to the control group. With regards to turn-taking, waiting and listening, scanning, and increasing face-to-face interactions, there were significant differences among the experimental and control groups after the intervention. In the reading activity, there were significant differences between the control and experimental groups for the *wait and listen,* and the *encouraging turn-taking* strategies, with the experimental group making improvements in these behaviours. In the play dough activity, significant differences were found in the *be face-to-face,* and *scan*

strategies, again with the experimental group showing improvements in these strategies (Girolametto et al., 2003).

The results of this study show that training in language strategies is important in terms of how caregivers use language strategies in a positive way that will benefit the children in their classrooms. The caregivers made improvements in (depending on the specific activity of play dough or reading) encouraging children to communicate during activities, waiting for the children to initiate conversations, and changing their bodily movements to ensure they were face-to-face with the children. Furthermore, the results obtained after the intervention were maintained during the follow-up testing, indicating that the strategies the caregivers were taught were long lasting and were incorporated into their daily teaching strategies (Girolametto et al., 2003).

Overall, the research related to training and the language that caregivers used in their classroom shows that caregivers can, indeed, be educated to use language appropriately and effectively in the classroom. It is important for caregivers to be aware of their impact on the children through their communication styles in the classroom.

Design of Teacher Education Programs

In recent years, teacher education programs have been reformed and redesigned to reflect the importance of coherence and connection among coursework and fieldwork. Through research studies those in the field of teacher education have been shown how crucial it is for teachers to do more than just implement specific teaching methods in the classroom. It is important to be able to "think pedagogically, reason through dilemmas, and investigate problems" (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005, p. 392).

In other words, linking coursework and fieldwork is crucial to developing the knowledge needed to perform effectively in the classroom. From this, it can be inferred, then, that having more opportunity to learn in the college/university classroom, and linking that theory to practice in field placements can only result in better prepared caregivers. When caregivers are given frequent opportunities to develop their knowledge, and then practice what they have learned in the classroom, their expertise is increased (Darling-Hammond et al., 2005). Wenglinksy (2002) found that caregivers who were given more professional preparation had more success in the classroom in terms of teaching diverse groups of students. While this study was conducted with middle school students, it can be inferred that, at any level of caregiver preparation, having more professional preparation will only serve to build upon one's skills in the classroom.

Researchers have shown that the most important factor in becoming a successful caregiver is having the opportunity to put into practice what has been learned in the college/university classroom. Furthermore, cognitive psychologists believe that rehearsing and continuing to practice skills is the best way to expand and build upon knowledge (Darling-Hammond et al., 2005). Teacher education programs, then, should provide ample opportunity for teachers-in-training to practice what they have learned through fieldwork while simultaneously taking classes. By intertwining fieldwork and coursework knowledge and expertise can combined and solidified (Darling-Hammond et al., 2005).

In terms of fieldwork placements, having a mentor to look to for guidance, support, and expertise is seen as extremely important (Darling-Hammond et al., 2005). It has been suggested that experiencing shorter fieldwork placements is less effective than

experiencing longer fieldwork placements. Short placements give student teachers little time to learn about the specific classroom, the students, and have learning experiences in that classroom. Furthermore, having more opportunity to put theory into practice has been thought to result in higher levels of self-confidence for these student teachers (educators in training). In addition, the level of commitment to the teaching field can also be impacted by the amount of fieldwork that is experienced. Andrew (1990, as cited in Darling-Hammond et al., 2005) found that educators who completed a five year-training program with more fieldwork, as compared to a 4-year training program, spent more time being involved with their students and used many more teaching methods in the classroom (Darling-Hammond et al., 2005). It can be concluded, then, that educators who experience a training program that extends over a longer period of time during which they are given more opportunity to practice their skills, will be better prepared to enter the workforce and successfully perform in their job.

Statement of Problem

A number of years ago in Quebec the government made a commitment to provide universal and affordable child care. In order to meet the high level of parental demands for placements in child care programs, it was necessary to open thousands of new child care spaces. As mentioned previously, in order to be employed as a caregiver in a child care center, regulations stated that two out of three caregivers were required to have training in the field of child care either at the university or college level. In order to meet the growing demands for child care as well as the regulations for the proportion of individuals required to be trained for employment in these centers, the government

developed an alternative to the well established 3-year college training program. This alternative was the Attestation program (Personal Communication, Ellen Jacobs, 2008).

At the college level, in the province of Quebec, there are two child care training options (all information regarding the two programs was taken from the website of the college from which all participants graduated, as well as from members of the college community). The first is the Attestation in Early Childhood Education. This is a 14-month program in which students are required to complete 17 courses, as well as two fieldwork placements. The first fieldwork placement requires students to be in the setting for 135 hours and the second fieldwork placements requires 210 hours in the setting. Over the course of the first fieldwork placement, students take a predominantly observational role in the setting, with very little responsibility for educational planning. During the second fieldwork placement, students are required to plan and lead educational activities on an increasingly regular basis. In other words, as time goes by in the second placement, students are given more responsibility. Supervisors of the students make weekly site visits to observe the students, and the visits last approximately one hour each. Each visit is followed by a discussion of the observation, and the supervisor gives the student a written report of the observation.

The second training option is an Early Childhood Education (DEC) program, which is designed to be three years in duration. In this program, students are required to complete 30 courses, as well as three fieldwork placements. The first fieldwork placement requires that the student be in the setting for 96 hours. The second and third placements require 190 hours and 256 hours, respectively. During the first fieldwork placement, the student works closely with the caregiver to apply what he/she has learned

in the classroom. During the second fieldwork placement, the student is required to plan activities and assume responsibility for preparing, presenting, and evaluating the curriculum. During the third fieldwork placement, the student is required to work closely with a specific group of children, applying the skills and knowledge of what has been learned in the program. In comparison to the ECE Attestation program, students in the ECE DEC program do not take an observational role in any of their fieldwork placements. They work closely with the caregiver as well as with the children throughout the fieldwork placements.

For both the ECE Attestation and ECE DEC programs, there are very few courses that can be transferred from previous programs to count for credit towards these degrees, since the courses in these programs are specialized. The only courses that are commonly transferred from previous degrees are courses in Child Development, as well as a course in Sociology and the Family.

The ECE Attestation and ECE DEC programs share some commonalities. For instance, a number of the courses address similar topics. Both the ECE Attestation and ECE DEC programs have courses that cover an introduction to the child care profession, child observation, safety issues, communication skills for educators, and child development. Both programs also require the students to complete fieldwork in a child care setting.

While the two programs share these similarities, there are also some striking differences that set these programs apart from one another. First, there is the obvious difference in the length of the two programs. As previously mentioned, the ECE Attestation program is a 14-month program, whereas the ECE DEC program is designed

to be three years in duration. Consequently, the ECE DEC program consists of a number of courses that are not included in the shorter ECE Attestation (e.g., music, motor development and creative movement, nutrition, and literature and creative drama). As mentioned above, the ECE Attestation requires two fieldwork placements for a total of 542 hours, whereas the ECE DEC program requires three fieldwork placements for a total of 345 hours. Thus, ECE DEC graduates finish their program with many more fieldwork hours than the ECE Attestation graduates. This is important to note, since these hours are filled with intensive training experiences.

When students have completed the ECE DEC program, they are fully qualified to work in a child care setting. Students in the ECE Attestation program, however, are not fully qualified. Due to the fact that ECE Attestation students complete fewer fieldwork hours, they are required to work for a certain amount of time (typically three years) once their degree is completed before they are considered fully qualified to work in a child care setting. During this 3-year period, there is no formal monitoring of their work or progress.

With regards to the wages paid to those who complete an ECE Attestation degree versus those who graduate with an ECE DEC degree, there are some differences as well. In Quebec, when caregivers enter the child care workforce, they are placed at a specific level on the government mandated pay scale (See Appendix A). Their place on the pay scale is determined by the number of years of relevant experience in the field. It should be noted that training (including college/university) is not counted towards the relevant experience (Famille, Ainés, et Condition Féminine Québec, 2006). As mentioned previously, when students graduate from the ECE Attestation program, they are not

considered to be fully qualified. Therefore, those who have an ECE Attestation degree enter the "*Step Non-Qualified Educator*" pay scale, while those who have an ECE degree enter the "*Step Qualified Educator*" pay scale. The wages per hour for the qualified caregiver range from $14.14 to $18.73 (over ten steps), whereas the wages per hour for the non-qualified caregiver ranges from $12.48 to $18.73 (over fourteen steps).

Since there are fundamental differences in the training that these two programs provide, it is important to determine whether there is a difference in the quality of the care that the graduates of these two different training options provide. In other words, does the *length* and *content* of the program impact the quality of care provided by these caregivers? Thus, the current study has been designed to examine the relationship between the two different caregiver training options available in Quebec and several elements of child care quality as defined by global environmental quality, caregiver sensitivity, and language strategies employed by the caregiver.

Hypotheses

Based upon the past research regarding the positive relation between training and quality of care provided, and the fact that different types of caregiver training programs are available in Quebec, the issue arises as to whether the *length* and *content* of training makes a difference. Based on the research conducted by Darling-Hammond et al. (2005), the longer training program that contains more coursework and more fieldwork should produce caregivers who are better prepared to enter the workforce, as a result of having more opportunity to put their theory into practice. Not only are there almost twice as many required courses that must be completed in the ECE DEC program, there are also many extra fieldwork hours that allow the caregivers to make the important links between

what is learned in the classroom and from course text books, as well as how to apply that knowledge when teaching the children in their own classroom.

The current study addressed the following question: What is the relationship between caregiver training and global quality, sensitivity, and language strategies? Three hypotheses were formulated.

The first hypothesis was that graduates of the ECE DEC program will provide a higher quality global environment than graduates of the ECE Attestation program. This is based upon the research findings of Ghazvini and Mullis (2002) and Phillips et al. (2000), which stated that caregiver training is related to the global quality of the child care environment. Furthermore, caregivers in the ECE DEC program experience more coursework as well as more fieldwork in their program than the ECE Attestation caregivers.

The second hypothesis was that graduates of the ECE DEC program will show higher levels of sensitivity towards the children than graduates of the ECE Attestation program. This is based upon the research of Arnett (1989), who found that caregivers in Bermuda with higher levels of training showed higher levels of sensitivity towards the children in their care.

Finally, it is hypothesized that graduates of the ECE DEC program will show higher quality communication exchanges with the children in their class (i.e., verbal and non verbal exchanges) than the graduates of the ECE Attestation program. This is based upon the study conducted by Girolametto et al. (2003) who found that caregivers can indeed be trained to communicate more effectively with children.

Method

Participants

A total of 18 female caregivers participated in this study, who worked in a total of 14 child care centers located in the Montreal metropolitan area. The centers were selected from a list of child care centers that had been provided by a fellow student colleague.

The participants in this study were all English speaking. Twelve participants reported English as their native language (66.67%), while six participants reported English as their second language (33.33%). All participants were between the ages of 23 and 52 (M = 38.61 yrs, SD = 9.32 yrs). A total of 14 participants reported being born in Canada (77.78%), while four participants reported a birth place in a country other than Canada (22.22%).

The participants in this study had between 2 and 35 years of experience in the field of child care (M = 14.11, SD = 8.29). Thirteen participants reported having their own children (72.22%), while five participants did not have children of their own (27.78%).

Testing Site

For the purpose of this research study, the testing site was the specific child care center of each caregiver. While the classroom was the site where the majority of the observations occurred (e.g., story time), the researcher and the research assistant completed their observations in other areas as well. These included outside areas (e.g., yard, playground), and gross motor areas (e.g., gym). Participants were asked not to change their schedules to accommodate the researcher and research assistant, and to carry out their activities as they normally would. As a result, the researcher and research

assistant accompanied the participants and the children to whichever activities were planned for that particular day. Note that if special activities, such as field trips were planned, observations were not scheduled for those days. The observations took place during typical child care activities in order to have a sense of what normally occurred in each classroom. Therefore, observations were not scheduled on fieldtrip days.

Materials

The materials used for this study consisted of a children's book that the researcher distributed to each caregiver to read on the researcher's second scheduled visit to the classroom. The purpose of distributing the same book to each educator was to ensure consistency in the study. It should be noted that caregivers were asked to read the book to the children for the first time during the day of the observation, and not before. The book was given to them in advance in order to allow them to become familiar with the book so they could feel comfortable reading it to the children.

The book distributed to the caregivers, entitled *"Lost and Found,"* was written by Oliver Jeffers and was published in 2007 (the same year that data collection occurred). The book was chosen by the researcher and her supervisor for multiple reasons. Firstly, the book was recently published, which lessened the chance of the participants already having that book in their classrooms. Second, it was thought that the content of the book would give ample opportunity for the caregivers to engage the children in meaningful discussion during the story time. The theme of the book is friendship, and in the book, a little boy finds a penguin that appears to be sad. He decides that the penguin needs help finding its way back to the South Pole. In the end, the boy realizes that the penguin was not sad about being far away from home. Rather, the penguin was lonely and just wanted

a friend. The storyline has a variety of issues that should allow teachers to engage the children in a discussion of topics such as social problem solving, friendship and kindness.

Measures

Early Childhood Environment Rating Scale-Revised (Research Version, Cassidy et al., 2005). The ECERS-R is a rating scale that measures global classroom quality, and was used in this study in each of the 18 classrooms. It consists of 43 items that are divided into seven subscales; *Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interaction, Program Structure,* and *Parents and Staff.* The subscales consist of individual items that range from 4 (*Interaction* and *Program Structure* subscales) to 11 items (*Activities* subscale). Each item is rated on a scale from 1 (inadequate) to 7 (excellent) with odd-numbered entries having an extensive set of descriptors that must be met for the classroom to be credited with having the required elements according to the descriptors provided for each entry. The highest possible total score that a classroom can earn if all items are applicable is 301 and the lowest possible score is 43. To account for non-applicable items the total score is divided by the number of applicable items scores and the average score is the rating that is usually referred to in discussions of comparative classroom ratings.

For any item, a score of 1 is given if any item under this inadequate category exists. A score of 2 is given if none of the items under '1' exist and at least half or more of the items under '3' (minimal) exist. A score of 3 is given if none of the items under '1' exist, and all of the items under '3' (minimal) are present. A rating of '4' is given if none of the items under '1' exist, all of the items under '3' are present and half or more of the items under '5' exist. A rating of '5'is given if none of the none of the items under '1'

exist, all of the items under '3' (minimal) are present., and all of the items under '5' exist. A score of '6' is given if none of the items under '1' exist, all of the items under '3' are present, all of the items under '5' exist, and half or more of the items under '7' are present. In order to obtain a score of '7', each requirement must be met for each and every entry for the particular item along with all of the other items in the descriptors for a score of '3' and '5' (Harms et al., 2005).

To obtain an average score for each subscale, the scores for each individual item are added together, and then divided by the number of items within that subscale. For instance, if the items under *Space and Furnishings* received the following scores; 6, 6, 5, 4, 7, 4, 3, 6, the total for the subscale would be 41. This would then be divided by 8 (the total number of items within the subscale), giving an average subscale score of 5.13. This process must be completed for each subscale. To obtain the overall ECERS-R rating, each subscale score is added together, and then divided by 7 (the total number of subscales) (Harms et al., 2005).

In order to examine the global classroom quality, the research version (Cassidy et al., 2005) of the ECERS-R was used (See Appendix B). This version of the ECERS-R contains 16 items divided into two subsections (Activities/Materials, Language/Interaction). The items in the first subsection (Activities/Materials) include: *Furnishings for relaxation and comfort, Space for privacy, Books and pictures, Fine motor, Art, Blocks, Dramatic play, Nature/science,* and *Math/number.* The items in the second subsection (Language/Interaction) include: *Using language to develop reasoning skills, Informal use of language, General supervision of children, Discipline, Staff-child interactions, Interactions among children,* and *Group time* (Cassidy et al., 2005). The

scale has been shown to have high internal consistency, with the two subscales of Activities/Materials, and Language/Interaction showing high alpha levels (.87, and .81, respectively). Furthermore, this research ECERS-R version has been shown to highly correlate with the full 43-item ECERS-R scale ($r = .90$).

For the purpose of this study, six extra items were included in the evaluation of the classroom environment. Since this study examined the training of the caregivers, as well as their professional development, it was important to include the last subsection of the ECERS-R (Harms et al., 2005), which deals with *Parents and Staff.* This subsection was added to the 16 items of the research version, bringing the total number of items to 22. The following items were included: *Provisions for parents, Provisions for personal needs of staff, Provisions for professional needs of staff, Staff interaction and cooperation, Supervision and evaluation of staff,* and *Opportunities for professional growth.*

The same scoring rules apply to this shorter version of the ECERS-R (see above). For the 16-item scale, the highest possible score that can be obtained is a score of 112, while the lowest score that can be attained is a score of 16. Unlike the 43-item version, there are no items in the shorter version that can be scored as "Not Applicable." As a result, the total score will always be calculated using the 16 items.

Caregiver Interaction Scale (CIS). In order to examine the sensitivity of the participants towards the children, the Caregiver Interaction Scale (Arnett, 1989) was completed on two separate occasions. The CIS is a rating scale contains 26 items (See Appendix C). Each item is rated on a Likert-type scale from 1 ("not at all true"), to 4 ("very much true"). The items address behaviors of sensitivity (e.g., *speaks warmly to the*

children), harshness (e.g., *speaks with irritation or hostility towards the children*), detachment (e.g., *seems distant or detached from the children*), and permissiveness (e.g., *doesn't reprimand children when they misbehave*).

The scale is completed through observations, as well as note-taking during the observations. A score of 1 is low and a score of 4 is considered to be high. After all of the items are rated, a final score is calculated. Participants who receive a high overall score are considered to be high in sensitivity, and low in detachment, harshness, and permissiveness. Furthermore, separate subscale scores are also calculated for sensitivity, harshness, detachment, and permissiveness. It should be noted that in order to score harshness, detachment, and permissiveness, specific scale scores must first be reversed for certain items (i.e., 2, 4, 5, 9, 10, 12, 13, 15, 16, 17, 20, 21, 22, 23, 24, and 26). Thus, for these three measures, a high score would be 1 and low score would be 4.

Once the final CIS subscale scores have been computed, the scores are examined. The closer to '1' a caregiver scores on the sensitivity scale the less sensitive she is deemed to be with the children. If a caregiver receives a score close to '1' on the sensitivity subscale, she/he is considered to show low levels of sensitivity towards the children. The closer to '4' a caregiver scores on the sensitivity subscale the more sensitive she is deemed to be with the children. If the caregiver receives a score close to '4', she/he is said to show high levels of sensitivity towards the children. The closer to '1' a caregiver scores on the harshness, detachment, or permissiveness subscales the harsher, more detached and/or permissive she is deemed to be with the children. If a caregiver receives a score of close to '1' on the harshness, detachment, or permissiveness subscales, she/he is said to show low levels of these traits towards the children. Similarly,

if the caregiver receives a score close to '4' on those three subscales, they are said to show high levels of those traits towards the children.

Teacher Interaction and Language Rating Scale (TILRS). In order to "examine linguistic directiveness and responsiveness in the interactions" (Girolametto et al., 2003, p. 303) between the caregivers and the children, the Teacher Interaction and Language Rating Scale (Girolametto et al., 2000) was used (See Appendix D). For the current study, this scale was used during two separate structured reading activities. This rating scale contains 11 items that are rated from 1 (almost never) to 7 (consistently). The items on the scale include: *Wait and listen, Follow the children's lead, Join in and play, Be face to face, Use a variety of questions, Encourage turn-taking, Scan, Imitate, Use a variety of labels, Expand,* and *Extend.* For the purpose of the current study, two items were not used. First, *Join in and play* was not used because it was not applicable to the reading activity, and *Imitate* was not used as it was not applicable to preschool children. Thus, the total number of scale items was 9 rather than 11.

Caregiver Interview. In order to obtain demographic information on each of the participants, a short interview was conducted (See Appendix E). This interview consisted of three parts. The first section contained personal background questions, which included general information regarding age, country of birth, mother tongue, and number of children in their family. The second section referred to educational background, and included questions regarding high school, college, and university education. There were also questions regarding the caregiver's official child care training. The third section was composed of job-related questions. In this section, the participants were asked about their years of experience, their wages, and the ratios of children to caregivers in their

classroom. Finally, they were asked about the average number of workshops they had taken part in each year.

Procedure

Participant recruitment and consent. The initial phase of this study consisted of recruiting caregivers to participate. The researcher established telephone contact with at least 70 day care centers in the Montreal metropolitan area. Initially, the researcher made attempts to recruit participants from non-profit centers in order to limit the confounding variables in the study. This proved to be difficult, and thus it was necessary to look to for-profit centers for participants as well (since this was recognized as a possible confounding variable, it was decided that this would be examined in the analysis). Once telephone contact was made, the researcher explained the study and informed each director what qualifications the caregivers would need to participate (either a DEC in Early Childhood Education or an Attestation in Early Childhood Education). If the director had any caregivers in the center who met these qualifications, the researcher then proceeded to ask the age group with which the caregiver(s) were working. If the caregiver(s) were in classrooms with children between the ages of 3 and 5, the director then asked the caregiver(s) if they would be interested in participating in the study. The researcher explained to the director and caregivers what their role would be in the study. Due to the fact that the researcher was responsible for recruiting the participants, being blind to the participants' level of training was unavoidable. However, reliability regarding the measures that were used (ECERS-R, CIS, and the TILRS) was maintained throughout the study with the research assistant.

Following this telephone communication, the researcher arranged a time to visit each day care center in order to meet the possible participants, explain the study and present the consent forms to be read and signed by the directors and caregiver(s). In the end, there were 14 day care centers that had caregivers (a total of 18 female caregivers) who agreed to participate in the study.

During the first visit to each center, the researcher further explained the study to the director and had the director and caregiver(s) read the consent forms (Appendix F & Appendix G). She answered all questions pertaining to the study without prejudicing the results of the study, and explained what would occur during the subsequent visits to the center if the caregivers agreed to participate. Following this initial meeting, another time was arranged for the researcher to deliver the book (discussed above in the *Materials* section) that the caregiver would need for the second story time reading.

Recruiting the assistant. Before data collection could begin, a research assistant was hired to conduct a portion of the observations. The researcher was interested in hiring a mature and responsible individual who was familiar with the procedures and the scoring of the ECERS-R. It was decided that the researcher would complete the CIS, the TILRS, and the Caregiver Interview, while the research assistant was responsible for completing the ECERS-R (Research Version). This decision was made so as to limit the researcher's knowledge of the ratings of each classroom, thereby avoiding the possibility of this knowledge influencing the manner in which the researcher scored the CIS or TILRS.

Prior to beginning data collection, the researcher and the research assistant worked to establish a level of inter-rater reliability that was acceptable. This level was set

at .80 in accordance with other studies that have used the ECERS, the CIS, as well as the TILRS (Burchinal et al., 2002; Arnett, 1989; Girolametto et al., 2000). The assistant was also responsible for establishing reliability with the researcher for 25% of the data during the data collection period (to be discussed more below).

Observations. Before observations could begin, two separate dates were scheduled for the researcher and research assistant to visit each classroom. On one of these days, the researcher visited the classroom by herself to complete the first CIS, as well as the first TILRS. On the other visit, the research assistant accompanied the researcher in order to complete the ECERS-R. All visits occurred in the morning, due to the fact that this is normally when most children are in attendance, and also because this is typically the time during which caregivers usually read to the children as a group. Visits lasted between two and three hours. Capturing the story reading with the entire group was important, as the researcher thought it would provide insight into how the caregiver interacted with the children, how she conducted the story reading, as well as how she handled a whole group of children, as opposed to one or two children. No visits were scheduled during days on which special events were planned (e.g., holiday celebrations, field trips, etc.).

Visits to each classroom were scheduled for approximately two hours. During the first visit, the researcher observed the caregiver and the caregiver's interactions with the children in order to complete the CIS (Appendix C). During observations, notes were made in order to complete the CIS scale after leaving the classroom (a collection of small anecdotes). The researcher was sure to make notes concerning the behaviors of the educators. These behaviors included, but were not limited to, how the educator handled

conflicts between children, how she disciplined the children, and how she spoke to the children. The CIS was completed in the same manner on the second visit to each classroom. Once again, observation notes were recorded that would enable the researcher to complete the scale after leaving the classroom.

In order to examine the language strategies of the caregivers, the researcher completed the TILRS (Appendix D). This required videotaping the caregiver reading to the children on two separate occasions, and completing the 9-item scale following the observation. The researcher used the identical taping procedure in each classroom. When the caregiver was ready to have story time with the children, she was asked to inform the researcher of this. The researcher positioned herself in the classroom in such a way that she could tape the story time reading and not include any children on camera. Care was taken not to videotape any children due to the fact that the parents of the children had not been asked to sign consent forms for their children to be videotaped. As a result, none of the children appeared on the videotape. During the first visit to the classroom, the caregivers were asked to read a book that the children were familiar with (i.e., any book that had been the caregiver had read to them on another occasion). During the second visit to the classroom, the educators were asked to read *"Lost and Found,"* the book that had been given to them by the researcher approximately one week before that specific visit to the classroom.

The researcher turned on the video camera as soon as the caregiver and children were positioned for the story time. This procedure was used, as some caregivers had short discussion time before starting to read the story and it was important to capture the entire sequence of events on tape. The researcher taped the story reading from beginning to end,

and was careful to include any discussion and/or questions regarding the story once the story was over. In order to complete the TILRS, the researcher viewed the taped story readings in the university research lab and immediately following the viewing completed the 9-item scale. During the viewing of the videos, the researcher took observation notes that allowed for the completion of the scale following the viewing of the tape.

As mentioned previously, the research assistant was responsible for completing the ECERS-R (research version) for each classroom. She accompanied the researcher on one of the two visits to each classroom to complete the scale. To complete the ECERS-R (research version), the research assistant was required to examine the classrooms for a number of issues. These included the materials that were available to the children, the set-up of the classroom, and the interactions between the children and the educators. In order to complete the 16-item scale, the research assistant recorded notes that would allow her to address all of the items do so. For some items, it was necessary for the research assistant to ask the caregiver questions in order to obtain the necessary information to complete the items. Note that while the CIS was completed after leaving the classroom, the ECERS-R was completed while in the classroom, as the observation took place over approximately a 2-hour period of time.

The final phase of data collection was the Caregiver Interview, conducted by the researcher. The interview took approximately 10 minutes to complete. It was conducted in an informal fashion, with the individual caregiver usually sitting in a corner of the classroom, or in a room in the center that was not occupied at the time of the interview. The caregivers were informed that if there were any questions that they did not feel comfortable answering, they were not required to answer them.

Reliability

For this study, the researcher and the research assistant were required to maintain a certain level of reliability on the three rating scales (CIS, TILRS, and the ECERS-R). It was decided that an agreement of 75% would be required for reliability. This was accomplished by the researcher and the research assistant completing the same scales for five of the 18 caregivers (this did not include the Caregiver Interview). The caregivers who were used to check for reliability were selected at random. To calculate the inter-rater reliability, the total number of agreements was divided by the number of disagreements, and this number was multiplied by 100. This provided the percentage of agreement between the researcher and the research assistant.

The CIS and the ECERS-R were completed using the procedure as previously described. The caregivers were observed and observation notes were made over a 2-hour period. The CIS was completed by the researcher after leaving the classroom, while the ECERS-R was completed in the classroom as the observation took place. To complete the TILRS, the researcher and the research assistant viewed the previously taped story time readings together, but completed the scale separately.

As mentioned, the five caregivers (25% of the population) were chosen at random for the purpose of testing the maintenance of reliability between the researcher and the research assistant. It should be noted that the research assistant was blind to the level of training of the participants. The average inter-rater reliability obtained on the CIS was 89%. This is a very high level of agreement between the researcher and the research assistant. The average reliability obtained on the TILRS was 84%, which is a high level of agreement on this scale, and high reliability. Lastly, the inter-rater reliability obtained

on the ECERS-R reached an average of 81%, which also shows high agreement between the researcher and research assistant. These three figures indicate that the researcher and the research assistant achieved a high level of inter-rater reliability on all three scales.

It should be noted that for data entry, the researcher was considered to be the central coder. Thus, when entering data for analysis, whenever there was a discrepancy greater than 1 point, the researcher and the assistant discussed the discrepancy and the researcher's scores were used, rather than those of the research assistant.

Results

This results section is organized into four sections. The first section is a description of the data preparation, which includes data collection and entry. The second section addresses the descriptive statistics regarding the participants, as well as the three scales and the interview that were used in the study. The third section focuses on the quantitative analysis of the study's three hypotheses. Finally, the fourth section includes the results of the relevant correlations that were found with relation to the three hypotheses.

Preliminary Data Preparation

Data were collected from one main source: the caregivers of the 14 child care centers. In addition, four instruments were used to collect the data: the CIS, TILRS, ECERS, and the Caregiver Interview. The data were verified on two occasions. First, the researcher entered the data herself, and then the researcher and the research assistant verified the data together to ensure that the data were entered properly. This was done by having the research assistant read the numbers from the SPSS spreadsheet, while the researcher verified that the numbers were correct from the original data.

All of the data were entered into one single SPSS document. All variables were entered into the same document and were labeled appropriately. There were three dependent variables in the study: the caregiver's level of sensitivity (measured using the CIS), the language strategies used during story time (measured using the TILRS), and the global quality of the classroom environment (measured using the ECERS). The independent variable was composed of two levels of training: the ECE degree, and the Attestation degree.

Descriptive Statistics

Participants. A total of 18 adults participated in the study. See Table 1 for participant descriptive statistics of all participants. There were two groups of participants in the study. One group, consisting of nine caregivers, had previously graduated from the ECE DEC program at a small College in Montreal. All nine were female, with an average age of 39.78 years. The average years of experience in child care averaged 15.67 years (*Range* = 2-35), while caregivers averaged thirteen years since completion of the ECE DEC program (*Range* = 2-26). Reported wages ranged from $15-17 per hour, to greater than $19 per hour. On average, they had 12.56 children in their care (ranging from 7-24 children). On average, ECE DEC graduates reported conducting 7.33 story times each week (See Table 2 for ECE DEC participant descriptive statistics).

The second group, also consisting of nine caregivers, had previously graduated from the ECE Attestation program at the same College in Montreal. All of the caregivers in this group were female, with an average age of 37.44 years. They averaged 12.56 years of experience (*Range* = 2-20 years) in child care and reported an average of 8.78 years since completion of the ECE Attestation program (*Range* = 2-16). Reported wages

ranged from $12-14 per hour, to $17-19 per hour. On average, ECE Attestation caregivers had 12 children in their care (ranging from 6-21 children), and reported conducting 10.00 group story times each week (See Table 2 for ECE Attestation participant descriptive statistics).

In order to statistically test for differences between the ECE DEC and ECE Attestation groups, Chi-Square and Mann Whitney U tests were conducted. These tests were conducted in order to rule out variables that could account for between-group differences in the scores on each of the three scales. After conducting these tests, no statistically significant differences were found between the two groups on any of the descriptive variables, ruling out all of these tested descriptive variables that could account for differences between the two groups. These results can be found in Tables 3 and 4.

Global quality. To examine the global quality of the environment, the research version of the ECERS-R was used (Cassidy et al., 2005). For all 18 caregivers, the *Activities/Materials* subscale ranged from 2.77 to 6.44, with a mean score of 4.86. The *Language/Interaction* subscale ranged from 3.86 to 6.86, with a mean score of 5.83. The *Overall ECERS-R score* ranged from 4.31 to 6.65, with a mean of 5.35. Finally, the additional subscale, *Parents and Staff*, ranged from 3.83 to 6.83, with a mean score of 4.99 (See Table 5 for means, standard deviations, and ranges of ECERS-R scores).

For the ECE DEC caregivers, scores on the *Activities/Materials* subscale, ranged from 4.56 to 6.44, with a mean score of 5.54. The *Language/Interaction* subscale ranged from 3.86 to 6.86, with a mean score of 6.25. The *Overall ECERS-R score* ranged from 4.65 to 6.65, with a mean score of 5.60. Finally, the *Parents and Staff* subscale ranged from 4.17 to 6.83, with a mean of 5.50.

For caregivers in the ECE Attestation group scores ranged from 2.77 to 5.44 on the *Activities/Materials* subscale, with a mean score of 4.17. Score on the *Language/Interaction* subscale ranged from 3.86 to 6.14, with a mean of 5.41. The Overall ECERS-R score ranged from 4.31 to 5.79, with an average of 4.79, and the *Parents and Staff* subscale ranged from 3.83 to 5.20, with an average score of 4.49 (See Table 6 for means, standard deviations, and ranges of the ECERS-R scores for ECE DEC and ECE Attestation caregivers).

Sensitivity of caregivers. To determine the level of sensitivity displayed by the caregivers, the CIS was completed for each caregiver. The CIS contains 26 items, divided into four subscales (sensitivity, punitiveness, detachment, and permissiveness). *Sensitivity* subscale scores ranged from 2.30 to 3.70, with a mean of 3.07. *Punitiveness* subscale scores ranged from 1.13 to 2.25, with a mean of 1.38. *Detachment* subscale scores ranged from 1.25 to 2.75, with a mean of 1.59. *Permissiveness* subscale scores ranged from 1.0 to 1.25, with a mean of 1.06. The total CIS scores ranged from 2.81 to 3.80, with a mean of 3.44 (See Table 7 for means, standard deviations, and ranges of the CIS for all 18 caregivers).

For the nine ECE DEC caregivers, scores on *Sensitivity* ranged from 2.80 to 3.70, with a mean of 3.41. *Punitiveness* scores ranged from 1.13 to 1.38, with a mean of 1.24. Scores on the *Detachment* subscale ranged from 1.25 to 2.00, with a mean score of 1.47, and scores on the *Permissiveness* subscale ranged from 1.00-1.25, with a mean of 1.03.

The Sensitivity scores for the ECE Attestation caregivers ranged from 2.30 to 3.30, with a mean of 2.72. Scores on Punitiveness ranged from 1.25 to 2.25, with a mean of 1.53. Detachment scores ranged from 1.25 to 2.75, with a mean of 1.72, and

Permissiveness scores ranged from 1.00 to 1.25, with a mean score of 1.08 (See Table 8 for CIS scores for ECE DEC and ECE Attestation caregivers).

Language strategies of caregivers. In order to examine the language strategies that the caregivers used during structured story readings, the TILRS was used twice. The first time, the participants read a familiar book to the children, and the second time, the caregivers read a book that was provided by the researcher. This results section includes descriptive statistics for the familiar book, as well as the new book that was provided by the researcher, as this book was consistently read by all 18 caregivers.

For all 18 caregivers, scores on the TILRS (for the familiar book) ranged from 2.56 to 6.00 (out of 7), with an average score of 4.49. ECE DEC caregiver's scores ranged from 3.22 to 6.00, with an average of 5.36, while ECE Attestation caregivers ranged from 2.89 to 4.67, with an average of 3.94.

Scores on the new book reading ranged from 2.89 to 6.11, with a mean score of 4.73. The ECE DEC caregiver's scores ranged from 3.66 to 6.11, with an average score of 5.53. The ECE Attestation caregiver's scores ranged from 2.89 to 4.67, with a mean score of 3.94 (See Table 9 for means, standard deviations, and ranges of TILRS scores).

Analysis of Hypotheses

In the analysis of the data, non-parametric statistical tests were used for multiple reasons. First, the small sample size would not allow the use of parametric tests. Second, an analysis of the skewness and the kurtosis of the sample indicated that the data were not normally distributed.

Hypothesis 1: Global quality. It was hypothesized that ECE DEC participants would provide a higher quality global environment as compared to the ECE Attestation participants.

Global quality was measured using the ECERS-R (Research Version), and the results showed that the ECE DEC caregivers were consistently rated significantly higher on all of the subscales, as well as the overall ECERS (Research Version) rating than the ECE Attestation caregivers. ECE DEC caregivers were rated higher on the *Activities/Materials* subscale ($U = 7.50, p = .002$), on the *Language/Interaction* subscale ($U = 13.00, p = .014$), and the *Overall ECERS rating* ($U = 6.50, p = .001$) (See Table 10).

Since this study focused on the training of the caregivers, the *Parents and Staff* subscale of the ECERS-R was included (this subscale contains items related to workshop participation and professional development). The ECE DEC caregivers were also rated higher on this subscale as compared with the ECE Attestation participants ($U = 14.00, p = .019$) (See Table 10).

Hypothesis 2: Sensitivity. It was hypothesized that the ECE DEC caregivers would show a higher level of sensitivity towards the children as compared to the ECE Attestation caregivers.

Sensitivity was examined using the CIS, and the results indicate that the ECE DEC caregivers did, in fact, show significantly higher levels of sensitivity towards the children than the ECE Attestation caregivers ($U = 5.50, p = .001$). With regards to punitiveness, ECE DEC caregivers showed significantly lower levels of this characteristic than the ECE Attestation participants ($U = 17.00, p = .04$).

While there were significant differences on the *Sensitivity* and *Punitiveness* subscales, no significant differences were found between the two groups on the *Detachment* and *Permissiveness* subscales (See Table 11).

Hypothesis 3: Language strategies. It was hypothesized that the ECE DEC caregivers would show higher quality communication strategies with the children as compared to the ECE Attestation caregivers.

These language strategies were measured using the TILRS, and the results show that the ECE DEC caregivers were rated significantly higher on the scale, as compared with the ECE Attestation caregivers. These results were found for both the old (familiar) book ($U = 6.00, p = .001$), as well as with the new book that was provided by the researcher ($U = 7.00, p = .002$) (See Table 12).

Exploratory Analysis

In order to further examine the scales that were used in the study, exploratory analysis were conducted. This was done to examine the significant relationships between the scores on each of the three scales (as well as the subscales).

ECERS and CIS. Among the three scales that were used in the study, a number of significant correlations were found. Both of the ECERS-R (Research Version) subscales, *Activities/Materials*, as well as *Language/Interaction* were found to be significantly correlated with overall scores of sensitivity on the CIS ($r = .55, p = .018, r = .70, p = .001$, respectively). Furthermore, the *Language/Interaction* subscale was negatively correlated with scores of punitiveness ($r = -.70, p = .001$), and positively correlated with the total CIS scores ($r = .70, p = .001$). In terms of the overall ECERS-R (Research Version) scores (average of *Activities/Materials* and *Language/Interaction* subscales),

these scores were significantly correlated with scores of sensitivity ($r = .69, p = .001$), punitiveness ($r = -.57, p = .013$), and total CIS scores ($r = .62, p = .006$). The third subscale, *Parents and Staff*, was also significantly correlated with scores of sensitivity ($r = .57, p = .013$), as well as total CIS scores ($r = .51, p = .033$) (See Table 13).

ECERS and TILRS. A number of significant correlations were also found between scores on the ECERS-R and the TILRS. The *Activities/Materials* subscale scores were significantly correlated with TILRS scores for both the familiar and unfamiliar books ($r = .59, p = .010$, $r = .61, p = .007$, respectively). The *Language/Interaction* subscale scores were also significantly correlated with the TILRS scores for both the familiar and unfamiliar book readings ($r = .69, p = .002$, $r = .68, p = .002$, respectively). Finally, the overall ECERS-R scores (average of *Activities/Materials* and *Language/Interaction* subscale scores) were also significantly correlated with the TILRS scores for both the familiar and unfamiliar book readings ($r = .68, p = .002$, $r = .74, p = .001$, respectively). Additionally, scores obtained on the third subscale, *Parents and Staff,* were also significantly correlated with TILRS scores for both the familiar and unfamiliar book readings ($r = .64, p = .004$, $r = .55, p = .019$, respectively) (See Table 14).

CIS and TILRS. The relationships between scores obtained on the CIS and scores obtained on the TILRS were also examined, and a number of significant correlations were found. The scores found for the sensitivity subscale was significantly correlated with the TILRS scores for both the familiar and unfamiliar book readings ($r = .78, p = .000$, $r = .73, p = .001$, respectively). Furthermore, scores obtained on the punitiveness subscale were also significantly negatively correlated with TILRS scores for both the familiar and unfamiliar book readings ($r = -.71, p = .001$, $r = -.71, p = .001$, respectively).

Finally, the total CIS scores were also significantly correlated with TILRS scores obtained for both the familiar and unfamiliar book readings ($r = .75$, $p = .000$, $r = .69$, $p = .001$, respectively) (See Table 15).

Structural measures and process measures of quality. Finally, the relationships between structural measures and process measures of quality were examined. The structural measures included wages, workshops per year, and the training program completed by the caregiver (ECE DEC = level 1, ECE Attestation = level 2). Process measures included sensitivity, punitiveness, detachment, both scores obtained on the TILRS (familiar and new book), and the overall ECERS-R score (See Table 16).

Results showed that wages were significantly correlated with sensitivity scores ($r = .56$, $p = .015$) and with the TILRS scores for both the familiar and new books ($r = .53$, $p = .025$; $r = .49$, $p = .04$, respectively).

The results also show that the number of workshops that the caregivers reported taking part in per year was also correlated with scores of sensitivity ($r = 548$, $p = .019$). There was also a significant negative correlation between the number of workshops attended and scores on measures of detachment ($r = -.682$, $p = .002$).

Relationships between the caregiver training program and measures of process quality were also examined (ECE DEC = level 1, ECE Attestation = level 2).The relationship between training and sensitivity was significant ($r = -.755$, $p = .000$), indicating that those with the level 1 training (ECE) scored higher on measures of sensitivity. There was also a significant relationship between training and scores on punitiveness ($r = .529$, $p = .024$), as well as TILRS scores for both the familiar and the new book readings ($r = -.740$, $p = .000$; $r = -.719$, $p = .001$). Finally, there was also a

significant relationship between training program and the overall ECERS-R score (r = -.729, p = .001).

In order to examine the relationship between years of experience and scores on the measures, correlational analyses were conducted. Two groups were created based upon 1 to 10 years of experience, and more than 10 years of experience. Ten years of experience was chosen as approximately half of the participants fell above and below this point. No significant correlations were found for years of experience between 1 and 10 years and the scores obtained on the measures of quality, sensitivity, and language.

There were significant correlations found for caregivers who had more than 10 years of experience and the ECERS-R scores on the *Activities/Materials* subscale (r = .67, p = .035), the *Language/Interaction* subscale (r = .76, p = .012), and the *Overall ECERS-R* score (r = .80, p = .006).

Table 1

Means, Standard Deviations, and Ranges of Descriptive Statistics for All Caregivers

Variable	*M*	*SD*	*Range*
Age	38.61	9.32	23-52
Years Since Completing Program	10.89	7.57	2-26
Years of Experience	14.11	8.29	2-35
Children in Classroom	12.28	5.33	6-24
Workshops Per Year	2.28	1.32	0-6
Story Times Per Week	8.67	4.01	1-15

Table 2

Comparison of Means, Standard Deviations, and Ranges of Descriptive Statistics for ECE DEC and ECE Attestation Caregivers

	ECE			Attestation		
Variable	*M*	*SD*	*Range*	*M*	*SD*	*Range*
Age	39.78	11.23	25-52	37.44	7.43	29-49
Years Since Completing Program	13.00	9.50	2-26	8.78	4.63	2-16
Years of Experience	15.67	10.22	2-35	12.56	6.00	2-20
Children in Classroom	12.57	5.41	7-24	12.00	5.57	6-21
Workshops Per Year	2.44	0.88	1-4	2.11	1.69	0-6
Story Times Per Week	7.33	4.21	1-15	10.00	3.54	5-15

Table 3

Mean Differences Between ECE DEC and ECE Attestation Caregivers on Continuous Variables

	ECE		Attestation		Chi Square		
Variable	*Yes*	*No*	*Yes*	*No*	*X*	*df*	*p*
Born in Canada	7	2	7	2	.000	1	.712
English as First Language	6	3	6	3	.000	1	.690
Have Children	6	3	6	3	.277	1	.500
Attended University	4	5	1	8	2.49	1	.147
Co-Teacher in Classroom	5	4	5	4	.000	1	.681
Attended Workshops	9	0	8	1	1.06	1	.500
Non-Profit Center?	7	2	5	4	2.10	1	.167

Table 4

Mean Differences Between ECE DEC and ECE Attestation Caregivers on Non-Continuous Variables

	Mann Whitney U	
Variable	*U*	*p*
Number of Spoken Languages	36.00	.660
Location of High School	37.00	.693
Years Since Completing Program	34.00	.565
Years of Experience in Child Care	34.00	.565
Wages	25.00	.138
Number of Children	35.00	.625
Workshops Per Year	28.50	.264

Table 5

Means, Standard Deviations, and Ranges for the ECERS for All Caregivers

Subscale	*M*	*SD*	*Range*
Activities/ Materials	4.86	0.98	2.77-6.44
Language/Interaction	5.83	0.94	3.86-6.86
Overall ECERS Score	5.35	0.77	4.31-6.65
Parents and Staff	4.99	0.87	3.83-6.83

Table 6

Comparison of Means, Standard Deviations, and Ranges for ECERS for ECE DEC and ECE Attestation Caregivers

	ECE			Attestation		
Subscale	M	SD	Range	M	SD	Range
Activities/ Materials	5.54	0.50	4.45-6.44	4.17	0.87	2.77-5.44
Language/ Interaction	6.25	0.99	3.86-6.86	5.41	0.70	3.86-6.14
Overall ECERS Score	5.90	0.58	4.65-6.65	4.79	0.49	4.31-5.79
Parents and Staff	5.50	0.92	4.17-6.83	4.49	0.43	3.83-5.20

Table 7

Means, Standard Deviations, and Ranges on the CIS for All Caregivers

Subscale	*M*	*SD*	*Range*
Sensitivity	3.07	0.47	2.3-3.7
Punitiveness	1.38	0.30	1.13-2.25
Detachment	1.60	0.40	1.25-2.75
Permissiveness	1.06	0.11	1.00-1.25
Total Score	3.44	0.27	2.81-3.80

Table 8

Comparison of Means, Standard Deviations, and Ranges on the CIS for ECE DEC and ECE Attestation Caregivers

	ECE			Attestation		
Subscale	*M*	*SD*	*Range*	*M*	*SD*	*Range*
Sensitivity	3.41	0.32	2.80-3.70	2.72	0.31	2.30-3.30
Punitiveness	1.24	0.10	1.13-1.38	1.53	0.36	1.25-2.25
Detachment	1.47	0.26	1.25-2.00	1.72	0.49	1.25-2.75
Permissiveness	1.03	0.08	1.00-1.25	1.08	0.13	1.00-1.25
Total CIS	3.63	0.16	3.38-3.80	3.25	0.23	2.81-3.54

Table 9

Means, Standard Deviations, and Ranges of Scores on the TILRS

	ECE			Attestation		
Variable	*M*	*SD*	*Range*	*M*	*SD*	*Range*
Total TILRS Score – Familiar Book	5.36	0.86	3.22-6.00	3.56	0.88	2.56-4.78
Total TILRS Score – New Book	5.53	0.75	3.66-6.11	3.94	0.60	2.89-4.67

Table 10

Comparison of Mean Ranks for ECE DEC and ECE Attestation Caregivers on the ECERS

	ECE	Attestation	Mann Whitney U	
Subscale	*Mean Rank*	*Mean Rank*	*U*	*p*
Activities/Materials	13.17	5.83	7.50	.002*
Language/Interaction	12.56	6.44	13.00	.014*
Overall ECERS Score	13.28	5.72	6.50	.001*
Parents & Staff	12.44	6.56	14.00	.019*

* *indicates a significant difference between groups*

Table 11

Comparison of Mean Ranks for ECE DEC and ECE Attestation Caregivers on the CIS

	ECE	Attestation	Mann Whitney U	
Subscale	*Mean Rank*	*Mean Rank*	*U*	*p*
Sensitivity	13.39	5.61	5.50	.001*
Punitiveness	6.89	12.11	17.00	.040*
Detachment	8.17	10.83	28.50	.297
Permissiveness	8.50	10.50	31.50	.436
Total CIS Score	13.33	5.67	6.00	.001*

** indicates a significant difference between groups*

Table 12

Comparison of Mean Ranks for ECE DEC and ECE Attestation Caregivers on the TILRS

	ECE	Attestation	Mann Whitney U	
Book Reading	*Mean Rank*	*Mean Rank*	*U*	*p*
Reading #1 – Familiar Book	13.33	5.67	6.00	.001*
Reading #2 – New Book	13.22	5.78	7.00	.002*

** indicates a significant difference between groups*

Table 13

Correlations ECERS and CIS

Subscale	1	2	3	4	5	6	7	8	9
1. Activities/ Materials	__	.56*	.88**	.37	.55*	-.33	.10	-.25	.44
2. Language/ Interaction		__	.84**	.60**	.70**	-.70**	-.24	-.039	.70*
3. Overall ECERS			__	.51*	.69**	-.57**	-.09	-.13	.62*
4. Parents & Staff				__	.57*	-.29	-.33	.05	.51*
5. CIS – Sensitivity					__	-.64**	-.69**	-.34	.96**
6. CIS – Punitiveness						__	.33	.22	-.77**
7. CIS – Detachment							__	.26	-.68**
8. CIS – Permissiveness								__	-.34
9. CIS – Total									__

*** indicates significant correlation at .001 level*

** indicates significant correlation at .05 level*

Table 14

Correlations ECERS and TILRS

Subscale	1	2	3	4	5	6
1. Activities/ Materials	—	.56*	.88**	.37	.59**	.61**
2. Language/ Interaction		—	.84**	.60**	.69**	.68**
3. Overall ECERS			—	.51*	.68**	.74**
4. Parents & Staff				—	.64**	.55*
5. TILRS- Familiar Book					—	.93**
6. TILRS- New Book						—

** *indicates significant correlation at .001 level*
* *indicates significant correlation at .05 level*

Table 15

Correlations CIS and TILRS

Subscale	1	2	3	4	5	6	7
1. CIS-Sensitivity	—	-.64**	-.69**	-.34	.96**	.78**	.73**
2. CIS-Punitiveness		—	.33	.22	-.77**	-.71**	-.71**
3. CIS-Detachment			—	.26	-.68**	-.34	-.22
4. CIS-Permissiveness				—	-.34	-.32	-.23
5. Total CIS					—	.75**	.69**
6. TILRS-Familiar Book						—	.93**
7. TILRS-New Book							—

** *indicates significant correlation at .001 level*

* *indicates significant correlation at .05 level*

Table 16

Correlations Structural Measures and Process Measures of Quality

Measure	1	2	3	4	5	6	7	8	9
1. Wages	__	.30	-.36	.56*	-.36	-.32	.53*	.49*	.37
2. Workshops Per Year		__	-.27	.55*	-.26	-.68**	.40	.28	.15
3. Training Program			__	-.76**	.53*	.27	-.74**	-.72**	-.73**
4. CIS – Sensitivity				__	-.64**	-.34	.78**	.73**	.69**
5. CIS – Punitiveness					__	.33	-.71**	-.71**	-.57**
6. CIS – Detachment						__	-.34	-.22	-.09
7. TILRS – Familiar Book							__	.93**	.68**
8. TILRS – New Book								__	.74**
9. Overall ECERS-R									__

*** indicates significant correlation at .001 level*

** indicates significant correlation at .05 level*

Discussion

In the research on quality child care, caregiver training has consistently been related to the quality of care that children receive in child care centers (Burchinal et al., 2002; Phillips et al., 2000; Ruopp et al., 1979). As mentioned previously, the term "quality" is hard to define and conceptualize (Lamb & Ahnert, 2006), due to the fact that there are so many components and factors that interact to make quality care what it is. Despite this, however, caregiver training is one aspect that seems to play a consistent role.

This finding is not surprising, as caregivers who are well educated and well trained should be expected to enter the workforce fully prepared to offer high quality care to the children for whom they are responsible, particularly if they have spent three years in a well designed program that includes close mentoring (Personal Communication, Ellen Jacobs, 2008). Training programs exist for many reasons. The most important reason being to prepare caregivers to be in the classroom to provide developmentally appropriate care for these young children, to provide emotional care, and to ensure the safety of all children. To do this successfully, research findings indicate that appropriate training is necessary.

Over the past twenty years many factors have been identified as being related to high quality care. First, there are the structural aspects such as caregiver training, caregiver-child ratios, and wages. There have been mixed results regarding caregiver-child ratios, however. Ruopp et al. (1979) found that caregiver-child ratios were significant predictors of quality care in infant and toddler classrooms, but not in preschool classrooms. Scarr et al. (1994) found only moderate correlations between

caregiver-child ratios and quality of care. Phillips et al. (2000), however, found that caregiver-child ratios were significantly correlated with quality of care in every classroom.

With regards to wages, there has been research to suggest that this is, in fact, related to the quality of care provided in child care centers. Phillips et al. (2000) found that the quality of care was significantly correlated with the wages that were earned by the caregivers in all classrooms (infants, toddlers, and preschool classrooms). Furthermore, Scarr et al. (1994) found that caregiver wages were the most significant predictor of the level of quality of care being provided. While wages were not significantly correlated with overall quality in the current study, they were correlated with other variables such as caregiver sensitivity, as well as language strategies of the caregivers. These findings will be discussed below.

Many factors have been found to make a contribution to the quality of care provided for children in child care setting, and these factors are intertwined and difficult to tease apart and separate. While some of the factors that have been identified as being associated with the provision of quality child care, these associations have not been clearly demonstrated in all research studies. However, caregiver training has been consistently and repeatedly related to the quality of care within child care centers (Burchinal et al., 2002; Phillips et al., 2000; Ruopp et al., 1979).

Given that two different types of child care training options exist in Quebec, the goal of the current study was to examine the outcomes of these two options in terms of the quality of care the graduates of the two options provide for the children in their classes. One program was a 3-year training program that led to a college diploma (DEC),

the other was a short 14-month program that led to a qualification called an ECE Attestation. While the two programs shared some similarities, there were some differences that made this study worth conducting, mainly the number of courses required in the program, the content of the courses, and the number of fieldwork placements required. This study addressed three issues in relation to the training of the caregivers who participated: (1) the global quality of the environment, (2) the level of sensitivity of the caregivers, and (3) the communication (language) strategies of the caregivers during formal story readings.

Discussion Regarding the Participants

It was expected that the demographic information would highlight some differences between the ECE DEC and ECE Attestation groups. These expectations were partially based on personal experiences of the researcher in a day care center in the Montreal area. Instances were witnessed where caregivers were having difficulty communicating with the children, and it was later discovered that these caregivers had completed the ECE Attestation program, and not the ECE DEC program. A fellow colleague, who was a fieldwork supervisor in a college program, offered the same impression based upon her supervisory experiences. Thus, it was expected that there would be some differences with regards to the mother tongue of the caregivers and their place of birth, since many caregivers who complete the ECE Attestation program are immigrants who have moved to Canada in their adult years. Surprisingly, after analyses were conducted, no differences between the ECE DEC and ECE Attestation groups on the variables of mother tongue or place of birth were found. Furthermore, it was also expected that there would be more ECE Attestation caregivers working in for-profit

centers than ECE DEC caregivers. Again, this expectation was not met, as there were no significant differences between the two groups on that variable. This was an unexpected finding as most for-profit centres choose to hire caregivers to whom they can offer lower wages, in order to increase the centre's profits (Personal Communication, Ellen Jacobs, 2008). Caregivers with an ECE Attestation can be paid less according to the government salary scales, therefore it was expected that there would be more Attestation graduates in the for-profit centres. The results of the analysis of non-profit and for-profit auspice make it possible to rule out this variable as a reason for differences in the scores obtained on the measures (e.g., measures of global quality, sensitivity, and language strategies) used in the study.

Other variables were also considered in the analysis of the demographic information and were analyzed in order to rule out variables that could account for differences found on the measures used in the study. These variables included whether or not the caregivers had their own children, whether the caregivers had attended university, whether they had attended workshops, how many languages they spoke, years since completing their respective training program, years of experience in the field, wages, number of children in their care, and how many workshops they attended per year. Surprisingly, not one significant difference between the ECE DEC and ECE Attestation group was found. This result was crucial to the study, as it ruled out each of these possible confounding variables as reasons for the differences found on measures of quality, sensitivity, and language.

After conducting the analyses on the variables listed above, the only factor studied that could account for the differences in the scores obtained on the measures was

the training program that the caregivers had completed. That is, whether the caregiver had completed the longer ECE DEC program or the shorter ECE Attestation program. The analyses allowed the researcher to conclude that the program was the only significant difference between the two groups of caregivers on the variables that were measured.

Hypothesis 1: Caregivers in the ECE DEC Group Would Score Higher on Measures of Global Quality (ECERS-R, Research Version).

The first hypothesis, which stated that ECE DEC caregivers would be rated higher on measures of global quality, was supported by the results. The ECERS-R (Research Version) was used to assess the global quality, and the ECE DEC caregivers were rated significantly higher than the ECE Attestation caregivers for both subscales. (*Activities/Materials* and *Language/Interaction*), as well as the overall ECERS-R score.

The mean ratings for global environmental quality attained by the ECE DEC graduates ($M = 5.90$) indicated that, on average, the ECE DEC graduates were providing better than developmentally appropriate care for the children in their classrooms. In fact, their care was approaching enhanced care, which is the highest level of care on the ECERS-R scale. However, the mean rating attained by the ECE Attestation graduates ($M = 4.79$) indicated that the quality of care provided was better than custodial, but not quite at the developmentally appropriate level. It is important to point out the difference between custodial care, developmentally appropriate care, and enhanced care. Custodial refers to care that is *just* meeting the children's basic health and safety needs. It encompasses issues such as attending to what the children eat, when the children eat, hand washing after eating and toileting, and dressing appropriately for the weather when going outdoors. Developmentally appropriate care encompasses providing stimulating

developmental experiences for the children, such as selecting appropriate reading material that will catch the children's interest, engaging them in discussions regarding the books read, and providing art materials that can support their creative expression and their fine motor development. Finally, enhanced care refers to the highest level of care that a child can receive. With enhanced care, the caregivers go beyond meeting children's basic developmental needs and guide their development appropriately for the children's interests and skill levels. For instance, caregivers providing this level of care may encourage the development of independence, social problem solving, and decision-making in children who may be ready to encounter these experiences (Personal Communication, Ellen Jacobs, 2008).

The findings regarding global quality are consistent with previous research, which states that caregivers with more training that is specific to ECE DEC tend to provide higher quality care than those with little or no training (Phillips et al., 2000; Burchinal et al., 2002). As discussed previously in the review of the literature, Ghazvini and Mullis (2002) examined the relationship between the quality of care and specialized training. While they examined specific versus non-specific training, the current study examined two *types* of specialized training; a longer program containing more coursework and more fieldwork, and a shorter program with less coursework and less fieldwork. So while it is clearly important that caregivers have specialized training, the results of the current study show that the *type* of specialized training is important in terms of the *content* of the training program (coursework and fieldwork), and the length of the program rather than just the issue of being trained or not trained.

An examination of the individual subscale scores indicated that the ECE DEC caregivers were clearly providing higher quality care than the ECE Attestation graduates in the domain of *Activities/Materials*, as well as the *Language/Interaction* domain. The ECE DEC caregivers provided higher than developmentally appropriate care in the *Activities/Materials* area ($M = 5.54$), by attending to the children's need to be on their own and have time to themselves, engaging them in both formal and informal story times, supporting their fine motor development by providing them with both the materials and the organization to do so, giving them ample opportunity to enhance their creativity and relating art experiences to other areas of the classroom, incorporating science-related activities into the classroom, and supporting their need to have early experiences with activities related to math. The ECE Attestation caregivers were once again providing better than custodial care, but care that was not at the level of what is developmentally appropriate ($M = 4.17$). In terms of *Language/Interaction*, ECE DEC caregivers were rated as providing care that approached enhanced care ($M = 6.25$), while the ECE Attestation caregivers provided developmentally appropriate care ($M = 5.41$). The ECE DEC caregivers were able to communicate with the children in a manner that guided their reasoning, they were consistent in their supervision of the children in the classroom, they were able to discipline in a manner that was not harsh or threatening, and they supported positive interactions among the children.

It is important to try and understand why the caregivers who completed the ECE DEC program provided a quality of care that was superior to the caregivers who had completed the ECE Attestation program. The first place to begin is with the content of the training programs. The ECE DEC program has more required courses than the ECE

Attestation and some of the knowledge that comes from these courses may contribute to the differences in the classroom processes that were evident in the results of the current study. One course in particular, *Educational Strategies*, which is taken in the third (of six) semester of the program, teaches caregivers the importance of providing developmentally appropriate care to children, as well as teaching strategies for dealing with various situations in the classroom. They are required to determine the level of support and guidance a child needs depending on the situation in which the child find him or herself. Successfully completing this course may play an influential role in the overall quality of care provided by the caregivers. Another course, *Educational Program Design*, is offered solely in the ECE DEC curriculum and is designed to teach students how to develop a curriculum that is specific to the children in their care. The course material focuses on the methods that should enable a caregiver to determine the individual needs of children, how to design activities that will meet these individual needs, as well as how to engage and support the children in these activities. Being able to develop a personalized curriculum means that the caregiver knows the children in her care and what they need. This level of functioning on the part of the caregiver would put her in the category of enhanced care on the ECERS-R. As a result, the graduates of the ECE DEC program ought to be better equipped to provide higher quality care to their specific group of children than the ECE Attestation graduates who do not have this course in their curriculum.

When the two subscales, *Activities/Materials* and *Language/Interaction*, were examined separately, it became apparent that many of the items included indicators that reflect the importance of training. In the *Activities/Materials* subscale, many of the items

address issues that are out of the caregiver's control. For instance, in the *Art* item, the materials that are available to the children were somewhat controlled by the center, not the caregiver. However, *how* these materials are used was indeed controlled by the caregiver. Highly trained caregivers who have courses that address Art with young children should understand the importance of letting children express their individuality through their artwork. They should not expect all children to produce the same art project, as this will not encourage their creativity. Furthermore, highly trained caregivers should be prepared to extend art projects to other aspects of the curriculum, and combine art with other subjects. It should be noted that the ECE DEC program at the college level has one course that is dedicated solely to incorporating art into the curriculum in preschool classrooms, *Art in Early Childhood.* This course focuses on teaching caregivers how to use art in the classroom in a developmentally appropriate manner. The ECE DEC students learn how to plan art activities and how to relate these activities to other activities in the classroom. Completing a course such as this should give caregivers the knowledge required to do this appropriately and the findings of the current study suggest that this is the case.

The ECE DEC program also includes a course that specifically relates to the *Nature/Science* and *Math/Number* items of the ECERS-R (also found in the *Activities/Materials* subscale). In the ECE DEC program, the course, *Science, Math, and Social Studies in Early Childhood* focuses on teaching caregivers to plan activities related to math and science in a developmentally appropriate manner. The caregivers learn how to relate math and science to other areas in the classroom as well. Being given the opportunity to explore these concepts should contribute to higher scores on the

Activities/Materials subscales, which could also help to explain why the ECE DEC caregivers consistently provided higher care in these areas than the ECE Attestation graduates.

Another course that the ECE DEC caregivers must complete is entitled *Play Development in Early Childhood.* This course focuses on using play as a way to guide and support children's development. In this course, as well as through fieldwork, the caregivers learn how to use play activities such as *Blocks* and *Dramatic Play* (items found in the Activities/Materials subscale of the ECERS-R) to encourage skill development across all areas. It should be noted that the ECE Attestation caregivers are required to complete *Educational Activities for Young Children (3-5 years)*, in their specific training program. While this course provides some preparation, it is not as specific as the required courses in the ECE DEC program. The one ECE Attestation course covers all educational activities, whereas the ECE DEC program has a number of courses that prepare the caregivers for specific areas of educational activities (e.g., art, science, math, music). Thus, it may be the in-depth specificity of the ECE DEC program that resulted in caregivers who were better prepared to provide enriching and rewarding experiences for the children in their care.

The second subscale, *Language/Interaction*, contains a number of items in which level of training should play an influential role. For instance, *Using language to develop reasoning skills* rates whether caregivers discuss logical relationships in everyday conversation, encourage children to speak out loud when problem solving, and engage them in appropriate discussions of concepts. The results of the current study indicated that caregivers who had completed the more intensive program (ECE DEC) were better

able to use language to develop the children's reasoning skills. This finding may be the result of having experienced a longer program, but my also be due to the fact that they have been given more opportunity to practice these skills in the field.

It is important to consider what the quality of care means for the children attending child care center programs in their preschool years. The quality of care children receive in Quebec child care centres seems to vary and may well depend upon the training programs their caregivers have completed. Past research indicates that high quality care is related to child outcomes. More specifically, children tend to score higher on measures of cognitive and language development if they are being cared for in a high quality child care program (NICHD Early Child Care Research Network, 2005). Although cognitive and language developmental issues are important, emotional needs must be met as well. Children require sensitive and supportive caregivers, since much of their time is spent away from their primary caregivers. They need to feel as if they have an adult figure to turn to for guidance. The ECERS-R offers a good overall view of process quality (e.g., what is occurring in the classroom setting) and while it contains items that provide a glimpse into the sensitivity of the caregivers (e.g., General supervision of children, Discipline, and Staff-child interaction), as well as the language that is used by the caregivers (e.g., Using language to develop reasoning skills, and Informal use of language), it does not provide an in-depth examination of these issues. Therefore, in order to explore these sensitivity and language issues more deeply, researchers have found that it is necessary to use other measures to support and complement the ECERS-R. For the current study the decision was made to use the CIS to gain more insight into what was occurring in the environment with regards to the

caregiver's level of sensitivity. Also, the TILRS was used to examine the language strategies that the caregivers implemented during their formal story readings. Both of these scales played important roles in the hypotheses presented below.

Hypothesis 2: Caregivers in the ECE DEC Group Would Score Higher on Measures of Sensitivity (CIS).

The second hypothesis of the study, which stated that the ECE DEC caregivers were expected to be rated higher on measures of sensitivity, was supported by the results. The caregivers in the ECE DEC group did, in fact, score significantly higher than the ECE Attestation caregivers on measures of sensitivity. ECE DEC caregivers averaged scores of 3.41 (out of 4) on sensitivity, while ECE Attestation caregivers averaged scores of 2.72 (out of 4). While the ECE DEC caregivers displayed higher levels of sensitivity, ECE Attestation caregivers showed significantly higher levels of punitiveness. No significant differences between the two groups were found on measures of detachment and permissiveness.

These results, then, serve to strengthen the notion that training is indeed related to the level of sensitivity displayed by caregivers in child care settings. The findings of the current study are in line with previous research that states that there is a significant relationship between level of training and level of sensitivity (Arnett, 1989; Ghazvini & Mullis, 2002; Rhodes & Hennessy, 2000). The exploratory analysis in the current study also showed the relationship between training and sensitivity, with level of training being positively correlated with scores of sensitivity, and negatively related to scores of punitiveness. It should also be noted that scores of sensitivity and punitiveness were also negatively related. This finding is not surprising, as caregivers who show high levels of

sensitivity tend to show low levels of punitiveness. This finding is consistent with the results of the study by Arnett (1989), who found that caregivers with the highest level of training showed high levels of sensitivity, and low levels of punitiveness. One would expect that caregivers who are sensitive to a child's needs and emotions, who are warm, caring, and enthusiastic, would not be harsh, critical, or hostile towards the children in their care.

It is important to explore possible explanations as to why these significant differences were found between the two groups in this study. One possibility is the content of the specific courses that formed the two different college programs. ECE DEC caregivers were exposed to more courses that focused on the importance of relationships and communication, and this could have had an impact on how the ECE DEC graduates viewed social experiences in the classroom. One course in particular, *Social Dynamics of the Early Childhood Environment,* focuses on providing the caregivers with the ability to develop secure and meaningful relationships with the children in their care. The importance of trust in the caregiver-child relationship is also highlighted, along with the issue of having respect for all children in the classroom. Once a caregiver successfully completes a course such as this, he/she should be prepared to enter the field with the knowledge and understanding as to why having a secure relationship with a child is so important. In their social dynamics course they should have learned the theories associated with the development of trust, security and emotional support. In their field placement they should have had the opportunity to apply the theories they learned in their college course and use this to refine their interaction skills. Furthermore, in these placements they have had the guidance of their fieldwork supervisors who visited their

field placement site each week and the support of the caregiver in whose class they were doing their placement work. The combination of all this could result in helping the ECE DEC caregivers form deeper connections with the children in their placement, which in turn could help them understand the importance of being emotionally sensitive to the children in their care (Personal Communication, Ellen Jacobs, 2008).

The items found in the CIS (the measure that was used to assess the level of sensitivity of the caregivers) are clearly related to the courses in the ECE DEC program. For instance, the following CIS items are all reflected in the course that was described above (*Social Dynamics of the Early Childhood Environment*): *speaks warmly to the children, listens attentively when the children speak to her, encourages the children to try new experiences,* and *seems enthusiastic about the children's activities and interests.* These items revolve around the importance of developing a secure and trusting relationship between caregiver and child. A child should feel more comfortable and trust the caregiver if the caregiver shows warmth and makes the child feel like what the child has to say is important.

Within the ECE DEC program, there are also courses that focus on the inclusion of special populations in the classroom. These courses, *Early Childhood Adaptation and Behaviour Problems,* and *Inclusion Issues in Early Childhood,* provide the caregivers with the wherewithal to incorporate special populations into the classroom. In courses such as these, caregivers must understand the importance of being sensitive to children from special populations, and the importance of including them as a part of the class. Furthermore, having more hours of fieldwork placement than the ECE Attestation graduates gives the ECE DEC graduates opportunities to interact with and integrate

children with special needs into the classroom setting. Again, there are items in the CIS that reflect the importance of the issues covered in these required courses. For instance, the item *pays positive attention to the children as individuals* is important, as these caregivers must recognize that children who are part of a special population have special needs to which they as caregivers must be sensitive. While it is extremely important to integrate these children and help them become part of the classroom as a whole, it is important to recognize their special needs and take those into consideration at all times. The caregivers who have completed courses that allow them to learn how to integrate children should more be sensitive to the individual differences factor than those who have not had courses or experiences that address the topic of integration and special needs.

While theoretical courses and fieldwork might have been responsible for the development of the caregiver's ability to provide high quality care, there are other factors that could be responsible for the differences between the two groups in the level of sensitivity displayed as well. The most obvious of these are the personal characteristics of the caregivers who chose one program option over the other. It is possible that those who chose the shorter program were in a hurry to complete a training program that would help them to find employment quickly, while caregivers who chose to complete the longer program (3-year ECE DEC) may have viewed the field of child care as a career, and because of this wanted to learn as much as they could during their training program. If this was true, it may be that those who chose the shorter program were not as committed to the field and as a result, their level of sensitivity would not be as high as those caregivers who saw child care as a career and an ongoing opportunity to develop their skills with the children. Although a number of variables were examined in this study

(including age, years of experience, workshop training, whether or not the caregivers have their own children, etc.), none of these highlighted any differences between the two groups. It is possible that other characteristics that were *not* examined in this study could have played a role in the differences in sensitivity observed.

Given that sensitivity to children in care is an important issue with regards to the development of children's sense of security and trust (Kontos & Wilcox-Herzog, 1997), determining all of the possible reasons for the differences in sensitivity that exist between the two groups merits further exploration.

Caregivers who have completed a long-term training program that addresses all aspects of child development including children's emotional and social well-being should also have been taught about the importance of engaging children in developmentally enriching experiences. One such important experience is the formal story readings that occur in the classroom.

Hypothesis 3: Caregivers in the ECE DEC Group would Score Higher on Measures of Language Strategies (TILRS).

The last hypothesis, which stated that ECE DEC caregivers would be rated higher on measures of language strategies during structured story readings, was also supported. The ECE DEC caregivers were rated significantly higher on the measure of language strategies than the ECE Attestation caregivers. On average, the ECE DEC caregivers scored 5.53 (out of a possible 7) on the TILRS, while the ECE Attestation caregivers on average scored 3.94 (out of 7).

When the possibilities of why ECE DEC caregivers were rated higher on these language strategies than the ECE Attestation caregivers are considered, one factor that

stands out is the content of the training programs. Both the ECE DEC and ECE Attestation programs require caregivers to complete a course in *Communication Skills for Educators.* These courses focus on providing the caregivers with the ability to successfully communicate in the workplace. Completing a course such as this should provide the caregivers with the foundation for effective communication in the child care center.

The ECE DEC program, however, takes the issue of communication one step further. One extremely important course offered in the ECE DEC program is entitled *Literature and Creative Drama in Early Childhood.* This course focuses on learning to plan activities and story readings that are appropriate for the children in the class. In this class, the caregivers-in-training are required to meet specific criteria while engaging in story time with the children. These criteria include: using different intonations in their voice so as to express enthusiasm and interest, making eye contact, using body language to show enthusiasm, discussing general aspects of the book (cover, author, etc.), discussing new or confusing words as they occur throughout the story, asking appropriate questions, and encouraging discussion of various issues throughout the book (Personal Communication, Cathy Burns, 2008). This course focuses on the development of *all* of the above mentioned skills, as mastering one or some of these skills is insufficient according to the course instructor. The questions, discussions, body language, and even the intonations used in the voice will be different for each story that the caregiver reads, so they must take advantage of the fieldwork placements to practice the development of these story reading skills. This is one area of education that can only be learned through practice and hands-on experience. Thus, the *Literature and Creative Drama in Early*

Childhood course along with the field placement is a combination that should enable ECE DEC graduates to engage the children in stimulating and rewarding story reading experiences.

Once these caregivers-in-training have completed courses in child development, this can help them to better understand the importance of a child's language development. Both the ECE DEC and ECE Attestation programs have courses in child development, and so caregivers from both programs should understand the importance of language development, the sequence in which it occurs, and therefore how to encourage it (Personal Communication, Ellen Jacobs, 2008). However, the difference between the two programs lies in the number, content, and the sequence of the courses required. Both programs require that courses and fieldwork be completed in a specific sequence, with the exception being that in the ECE DEC program, caregivers choose one group of courses (out of two) to complete in the fourth semester. In the fifth semester, caregivers complete the group of courses that was not completed in the fourth semester. Organizing training programs in such a way as to provide opportunities to practice skills that have been taught in these specific methodology courses is extremely important. Furthermore, continued mentoring associated with the fieldwork placements should impress upon the students the importance of these experiences and make the experiences more meaningful to them. It is possible that, incorporating the methods listed above makes them second nature to the caregivers, and they will automatically use these techniques with the children.

An examination of the individual items of the TILRS that was used in the current study indicates that many of the items are related to the issues that are addressed in the

Literature and Creative Drama in Early Childhood course that is required in the ECE DEC program. For the item *follow the children's lead,* caregivers are required to use animation in their voices, which is a criterion that is required in the ECE DEC course. To receive credit for the TILRS item *be face to face,* caregivers must position themselves to be at the children's level and be close to the children, and these are issues that are addressed in the ECE DEC course. For the TILRS, caregivers are also required to *use a variety of questions*, *expand,* and *extend* during their story readings. To successfully complete the course in the ECE DEC program, the caregivers must incorporate these strategies as well. The close similarity between the items on the TILRS, and the criteria required in the ECE DEC course may help to explain why the ECE DEC caregivers were rated as being superior to the ECE Attestation graduates in their language strategies used during the formal story readings.

It may be that where quality is concerned good things go together. In other words, high quality environments result in better experiences for the children in child care centers. Caregivers who provide a higher quality global environment are more likely than those who do not to offer children stimulating language experiences that will be displayed during story time (formal communication), and also during everyday conversations (informal communication). These higher quality environments may be a result of their training, given that the ECE DEC trained caregivers offered higher quality environments than the ECE Attestation caregivers. The components of the ECE DEC training program (courses and fieldwork) may have made them more aware of what it means to provide a good quality program and how to create this kind of stimulating and enriching program for the children in their care. The child development courses that the

ECE caregivers have followed should have educated them about the impact that high quality care can have on the children's language and cognitive development (NICHD Early Child Care Research Network, 2005).

Relationships Between Global Quality, Sensitivity, and Language Strategies

After the three main hypotheses of the study were analyzed, an examination was conducted of the relationship among the scores of the three measures that were used. That is, the relationships between scores on the ECERS-R, the CIS, and the TILRS.

ECERS-R and CIS. First, a positive relationship was found between the quality of care and the level of sensitivity displayed by the caregivers. Caregivers who were in classrooms rated as higher in quality tended to be warmer with the children in their care. As mentioned before, good things tend to go together, and this is true for both subscales of the ECERS-R, and the sensitivity of the caregivers. Caregivers who were able to provide stimulating classroom activities in art, math, and science, also tended to be warm and supportive towards the children. Warm caregivers also tended to be better able to promote the children's reasoning skills through both formal and informal language. In higher quality classrooms there was more informal discussion throughout the day, and there were more verbal exchanges between caregivers and children regarding concepts and logical relationships. It may be that caregivers who are sensitive to what the children need should be better able to use this and provide the children with a safe, stimulating, and enriching environment.

ECERS-R and TILRS. Relationships were also found between the quality of care and the language that was used during story time. Caregivers who provided higher quality care also tended to be more successful in implementing effective language strategies such

as asking appropriate questions, adding additional ideas to the discussion, and extending the discussion to topics other than the story. This is not surprising, as caregivers who understand the importance of using all aspects of the environment together to give the best quality care possible, should also understand the importance of engaging the children in a stimulating and interesting story time experience. Furthermore, caregivers who have the ability to use language to their advantage, both formally and informally, should be able to adapt these skills to formal story readings, and the current study shows that this seems to be the case.

CIS and TILRS. Finally, caregivers who scored higher on levels of punitiveness tended to score lower on measures of language strategies, and this was true for both formal story readings. In other words, caregivers who tended to be harsh and hostile towards the children also seemed to lack the ability to communicate effectively while telling stories to the group as a whole. If a caregiver lacks sensitivity, it seems unlikely that they will have the ability or the understanding to engage the children with the proper body language, voice intonations, and questions to further their understanding of the book. It may be that caregivers who are punitive are not fully tuned into the needs of the children, and thus cannot use that information to effectively teach them.

One of the consistent findings of many of the previous studies of quality of care is that good things tend to go together and that is the case in the current study. Higher quality classrooms tended to have caregivers who were more sensitive, better communicators, and were more successful in implementing strategies during structured story readings than children who were in lower quality classrooms.

Relationships Between Structural and Process Measures of Quality

Caregiver training. As was expected, caregiver training was found to be related to the global quality of care, the level of sensitivity displayed by the caregivers, as well as the language that was used during the formal story readings. ECE DEC caregivers tended to provide higher quality activities to children, and tended to use the materials in a more appropriate and effective manner than the ECE Attestation caregivers. In addition, ECE DEC caregivers tended to engage in higher quality communication exchanges and interactions with the children, and this was evident in how warm they were with the children. This is consistent with previous research, which states that caregiver training is indeed related to the quality of care (Burchinal et al., 2002; Ghazvini & Mullis, 2002; Norris, 2001; Phillips et al., 2000).

Thus, it may be possible to educate people to develop the many skills required to provide high quality care to children as long as they are in a program that combines a great variety of courses that focus on methodology with the opportunity to practice skills in a number of fieldwork placements. This is finding is crucial, because if no relationship between training and quality was found, there would be no reason to such training programs to teach these skills.

Years of experience. In order to examine the relationship between years of experience and scores obtained on the measures used in the study, participants were divided into two groups: those who had between 1 and 10 years of experience, and those who had more than 10 years of experience. Significant relationships were found between years of experience greater than 10, and measures of global quality.

Based upon these results, it would seem that caregivers who have completed training in the field of early childhood education (regardless of the length of the respective program), and who have long-term experience in the workforce (more than 10 years), are better able to provide a higher quality child care environment than caregivers who have less experience (less than 10 years). It should be noted, however, that there were no significant relationships found between years of experience and scores obtained on sensitivity (CIS), and the language strategies (TILRS). These results are surprising, as one would assume that the more experience a caregiver accumulates, the more sensitive they would become in their interactions with the children. Furthermore, it would make sense that the language strategies that caregivers implement during formal story readings would improve over time. Thus, the fact that significant relationships were found for global quality, but not sensitivity and language strategies, is surprising.

Wages. While there were no differences between the ECE DEC and ECE Attestation groups with regards to their wages earned, wages were found to be positively related to the sensitivity level of the caregivers. Caregivers who earned higher hourly wages showed higher levels of sensitivity than caregivers who earned lower wages. This is not surprising, as caregivers who earn more may be more satisfied in their job (Bloom 1986), and this could have an impact on their job performance. Being sensitive and warm is an important aspect of working in child care, and if the caregiver is not happy in her job, this could be manifested in less sensitive behaviour towards the children in her/his care.

Wages were also found to be related to how effectively the caregivers communicated during both formal story readings. Caregivers who earned higher wages

tended to provide more stimulating reading experiences for the children in their care than caregivers who earned lower wages. Once again, this could be related to job satisfaction (Bloom, 1986). Caregivers who are paid higher wages may be happier in their work and this could be reflected in their classroom behaviour in terms of how they interact with the children, how they read to the children, how much time they take to talk to the children about features of the story, and how well they listen to the children and encourage them to express their ideas.

Ratios. Surprisingly, there seemed to be no relationship between the quality of the environment, the level of sensitivity of the caregivers, or the language strategies that were used during the formal story readings. This finding is not consistent with previous studies. Past research shows that caregiver: child ratios can be related to the quality of care that is provided, as well as the sensitivity. Phillips et al. (2000) found that there was a link between caregiver: child ratios, and the quality of global environment, while de Schipper et al. (2006) found the link between ratios and the level of sensitivity displayed by the caregivers. It is surprising, then, that no relationships were found between ratios and any of the process measures that were used in this study.

Implications

Caregiver training. As discussed previously, in Quebec, there is a policy that is dedicated to providing universally accessible and affordable child care. Due to the increase of day care spaces in the province, it was necessary to develop a fast track training program that was intended to educate and train caregivers in an accelerated program to be qualified to work in the field. Interestingly, this fast track option does provide some training, and the literature states that having some training is better than

having no training at all (Norris, 2001). While providing some training may have been the intention of the government, the current study demonstrates that having some training is not as good as experiencing a long-term comprehensive training program. The ECE DEC caregivers who experienced the longer program not only provided a higher quality environment for the children, they displayed higher levels of sensitivity and lower levels of punitiveness, and they were better able to implement important language strategies during formal story readings.

In practical terms, the results of the current study indicate that the caregivers who have completed the ECE Attestation program are not providing as good a level of care as the caregivers who have completed the ECE DEC program. What this means is that steps need to be taken to ensure that these caregivers begin providing higher quality care. There are a number of ways that the government could go about doing this. One way is to require that changes be made to the ECE Attestation program with regards to the required courses, as well as the number of hours that are spent in fieldwork placements. Courses that are similar to those offered in the ECE DEC program should be implemented (e.g., art, math and science, literature, social dynamics), and this might improve the ECE Attestation caregivers' skills to the point where they offer *at least* developmentally appropriate care, but hopefully more than that. Adding to the number of required courses and fieldwork hours will obviously result in a longer training program, which may defeat the purpose of the short option. However, if this is what is required in order to improve the quality of care, then this should be seriously considered by the government.

For the caregivers who were rated lower on measures of global quality, research shows that it is possible to further educate and train these caregivers on the importance of

providing high quality care to children. Kontos, Howes, and Galinsky (1996) conducted a study in which they provided family child care providers with training on a number of issues including: regulations, safety and nutrition, child development, and developmentally appropriate activities. The results showed that the global quality of the caregiver's classrooms improved significantly from the pre-test to the post-test. Knowing that it is possible to increase the quality of care, the government could require that caregivers who have already completed the ECE Attestation program and are currently working in child care centers take part in workshops such as the one mentioned above, or, perhaps those who have completed the ECE Attestation program could upgrade their qualifications by taking the additional courses while they are employed and field placement supervisors could visit them in their workplace and provide in site mentoring.

Child outcomes. The most important implication of this study revolves around the children who experience the programs offered by the caregivers day after day and the interactions that occur between the caregivers and the children. There are a number of positive implications when a child is provided with care that is developmentally appropriate or enhanced. The research shows that higher quality care is related to better child outcomes, specifically with language and cognitive development. The NICHD Study (2005) found that children who experienced higher quality care scored higher on measures of language development (vocabulary checklists), as well as on measures of cognitive development (memory, learning, and problem solving). Based on this research, there is a possibility that children who are under the care of the ECE DEC caregivers could show better developmental outcomes in both of these areas than those who have ECE Attestation program graduates as their caregivers. It does not seem reasonable to

have one portion of the preschool children that is enrolled in child care have lower quality experiences than another portion of the children. Based upon the findings of the current study, one way to deal with this situation would be to require that all caregivers participate in a longer training program, combining a variety or courses and fieldwork that has had demonstrably better results than the short term program. To accommodate the particular situations of the caregivers, continuing education courses should be made available to them.

Past research has shown that the quality of child care can indeed have an impact on children's developmental (specifically language and cognitive development) outcomes. If this is the case, it seems only reasonable to ensure that all children in child care programs have caregivers who are equipped to provide higher quality care. If, as this study indicates, training is related to the quality of care provided, then all caregivers should be required to complete the same comprehensive program to enable them to offer high quality care.

Limitations of the Study

Number of participants. One limitation of this study was the small number of participants. There were a total of 18 female caregivers (nine per group). As a result of the low number of participants, non-parametric statistical tests were used, and because of this, it is difficult to generalize the findings to the larger population. Having more participants in the study would have permitted more analyses, and then it would make the results more generalizable. If this study were to be conducted again, more participants would be added to each group. Ideally, each group would have 20 caregivers, and this would provide more statistical power to the results.

Time of data collection. The time of year during which the data were collected was a limitation of the study. The data collection took place during the summer months (June to early September) and many of the caregivers were on vacation and this limited the researcher's access to a larger number of participants.

Number of groups. Another limitation of the study is the fact that there was no control group, which should have consisted of caregivers who had no training in the field of ECE. In Quebec, the regulations regarding child care centres state that two of three caregivers must be trained, which means that there are centers with caregivers who have no training. Examining a third group of caregivers who fit this description would have made it possible to compare them with a group of caregivers who had *some* training (ECE Attestation caregivers), as well as with a group of caregivers who have much *more* training (ECE DEC caregivers). This would have allowed for a more in-depth comparison of the experiences of children who are in classrooms with caregivers with no training, some training and comprehensive training programs.

Training of caregivers. Before entering each classroom, the researcher knew the level of training each caregiver had experienced, and this was unavoidable. It is possible that this could have resulted in researcher bias, which could have impacted the ratings given by the researcher during the times of the observations. . In order to ensure reliability, 25% of the caregivers were observed by the research assistant along with the researcher. In other words, the researcher, as well as the research assistant, completed all of the measures, and the scores were compared to ensure reliable observations. While the researcher was considered to be the central coder, and her scores were used rather than

the research assistant's scores when there were discrepancies, the level of reliability was high on all of the measures used.

Directions For Future Research

Qualitative study. One interesting issue that was previously discussed was the characteristics of the caregivers in the study, and what led them to choose their respective training program (i.e., choosing the ECE DEC program over the ECE Attestation program). Adding a qualitative portion of the study in order to examine this issue might help to reveal the reasons behind caregiver selection of a much shorter program with less fieldwork over a longer program with more fieldwork.

Within this same qualitative study, the caregivers could be extensively interviewed about the program they completed. They could be asked such questions as: Do you feel that your program prepared you for work in child care? What courses do you feel were most valuable in preparing you? What courses do you feel were least valuable in preparing you? Do you feel that the fieldwork experience was helpful in preparing you? These questions, among others, would give insight in the respective programs, and how the caregivers view the programs. This could help to improve specific aspects of the programs that may be lacking.

Job satisfaction. Interesting relationships were found between wages and sensitivity and language strategies that were used in the classroom. When wages are discussed, the issue of job satisfaction arises. Job satisfaction was not measured in the current study, but it could have provided a great deal of insight with regards to the issue of wages. Furthermore, it would be interesting to see if there are any differences between the ECE DEC caregivers and the ECE Attestation caregivers with regards to how

satisfied they are in their work. This could lead to a consideration of whether there is a relationship between caregiver training program and job satisfaction. If future studies are conducted looking at the ECE DEC and ECE Attestation programs, job satisfaction would be a point of interest.

Interviewing directors. Given that there was such a significant difference between the ECE DEC caregivers and the ECE Attestation caregivers on the quality of care, the level of sensitivity, and the language strategies that were used during story readings, it would be interesting to conduct a qualitative study that revolves around the directors of these child care centers and their hiring policies. Some possible questions could be: What training is required of the caregivers in order to be hired? Do you hire caregivers who do not have training? What personal characteristics (if any) do you look for before hiring caregivers? Do you require that your caregivers' complete in-service training while employed at your center? Asking questions such as these could provide insight into why directors hire certain caregivers over others.

Conclusions

Past research has shown that caregiver training is consistently linked with the quality of care that is provided in early childhood classrooms (Burchinal et al., 2002; Phillips et al., 2000; Ruopp et al., 1979). The purpose of the current study was to examine the relationship between the quality of the experiences children would have in early childhood environments, based on whether their caregivers had completed a short-term training program versus a long-term training program. In the current study, caregivers who had completed a long-term ECE DEC training program were consistently rated higher on all measures that were used (global quality, sensitivity, and language

strategies). When all variables were considered, however, years of experience became an issue that needed to be addressed. It would appear that years of experience in the field of child care, combined with ECE-specific training may result in caregivers who are better able to provide higher quality care as measured by the ECERS-R.

The results of this study help to highlight the importance of caregiver training. The child care environment encompasses all aspects of care, including the global quality, sensitivity levels, and the language used by the caregivers. Research has shown that these are all related to the training that caregivers experience. Thus, it is important that caregivers experience a training program that will help them to provide a high quality environment for the children in their care.

References

Abbott-Shim, M., & Sibley, A. (1987). *Assessment profile for childhood programs.* Atlanta, GA: Quality Assist, Inc.

Arnett, J. (1989). Caregivers in day-care centers: Does training matter? *Journal of Applied Developmental Psychology, 10,* 541-552.

Assessment profile for early childhood programs. (1998). Retrieved from http://www.qassist.com/fr_assm.htm, September 25, 2006.

Berk, L. (1985). Relationship of caregiver training to child-oriented attitudes, job Satisfaction, and behaviours to children. *Child Care Quarterly, 14,* 103-129.

Bloom, J. (1986). Teacher job satisfaction: A framework for analysis. *Early Childhood Research Quarterly, 1,* 167-183.

Bredekamp, S. (1990). An overview of NAEYC's criteria for high quality in early Childhood programs. In B. Willer (Ed.), *Reaching the full cost of quality in early childhood programs.* Washington, DC: National Association for the Education of Young Children.

Burchinal, M. R., Cryer, D., & Clifford, R. M. (2002). Caregiver training and classroom Quality in child care centers. *Applied Developmental Science, 6,* 2-11.

Cassidy, D. J., Hestenes, L. L., Hegde, A., Hestenes, S., & Mims, S. (2005). Measurement quality in preschool child care classrooms: An exploratory and confirmatory factor analysis of the early childhood environment rating scale-revised. *Early Childhood Research Quarterly, 20,* 345-360.

Darling-Hammond, L., Hammerness, K., Grossman, P., Rust, F., & Shulman, L. (2005).

The design of teacher education programs. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world.* (pp. 390-441). San Fransisco, CA: Jossey Bass.

de Schipper, E. J., Risken-Walraven, J. M., & Geurts, S. A. E. (2006). Effects of child-caregiver ratio on the interactions between caregivers and children in child-care centers: An experimental study. *Child Development, 77,* 861-874.

Erikson, M. F., Sroufe, L. A., & Egeland, B. (1985). The relationship between the quality of attachment and behavior problems in preschool in a high-risk sample. In I. Bretherton & E. Waters (Eds.), Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development, 50,* 147-166.

Famille, Ainés, et Condition Féminine Québec (2006). *Administrative guide concerning the classification and remuneration of salaried employees in childcare services and home childcare coordinating offices.* Retrieved November 27, 2006, from http://www.mfcaf.gouv.qc.ca

Fodor, J. A., Bever, T. G., & Garrett, M. F. (1974). *The psychology of language.* New York: McGraw Hill.

Ghazvini, A., & Mullis, R. L. (2002). Center-based care for young children: Examining predictors of quality. *The Journal of Genetic Psychology, 163,* 112-125.

Girolametto, L., Weitzman, E., & Greenberg, J. (2000). *Teacher interaction and language scale.* Toronto, ON: The Hanen Center.

Girolametto, L., Weitzman, E., & Greenberg, J. (2003). Training day care staff to Facilitate children's language. *American Journal of Speech-Language*

Pathology, 12, 299-311.

Girolametto, L., Weitzman, E., van Lieshout, R., & Duff, D. (2000). Directiveness in teachers' language input to toddlers and preschoolers in day care. *Journal of Speech, Language, and Hearing Research, 43,* 1101-1114.

Harms, T., & Clifford, R. (1989). *Family day care rating scale.* New York: Teachers College Press.

Harms, T., Clifford, R. M., & Cryer, D. (2005). *Early childhood environment rating scale: Revised edition.* New York: Teachers College Press.

Harms, T., Cryer, D., & Clifford, R. M. (1990). *Infant/toddler environment rating scale.* New York: Teachers College Press.

Howes, C. (1983). Caregiver behavior in center and family day care. *Journal of Applied Developmental Psychology, 4,* 99-107.

Howes, C. (1997). Children's experiences in center-based child care as a function of Teacher background and adult: child ratio. *Merrill-Palmer Quarterly, 43,* 404-425.

Howes, C., Galinsky, E., & Kontos, S. (1998). Child care caregiver sensitivity and attachment. *Social Development, 7,* 25-36.

Kontos, S., Howes, C., & Galinsky, E. (1996). Does training make a difference to quality in family child care? *Early Childhood Research Quarterly, 11,* 427-445.

Kontos, S. & Wilcox-Herzog, A. (1997).Teachers' interactions with children: Why are they so important? *Young Children, 52,* 4-12.

Lamb, M. E., & Ahnert, L. (2006). Nonparental child care: Context, concepts, correlates,

and consequences. In W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology, 6th ed. Volume 4: Child psychology in practice* (pp. 950-1015).

McCartney, K. (1984). Effect of quality of day care environment on children's Language development. *Developmental Psychology, 20,* 244-260.

NICHD Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. In NICHD Early Child Care Research Network (Eds.) *Child care and child development: Results from the NICHD study of early child care and youth development* (pp. 318-336).

Norris, D. J. (2001). Quality of care offered by providers with differential patterns of workshop participation. *Child and Youth Care Forum, 30,* 111-121.

Phillips, D. & Howes, C. (1987). Indicators of quality in child care: Review of research. In D. A. Phillips (Ed.), *Quality in child care: What does the research tell us?* (pp. 1-19). Washington, DC: National Association for the Education of Young Children.

Phillips, D., Mekos, D., Scarr, S., McCartney, K., & Abbott-Shim, M. (2000). Within and beyond the classroom door: Assessing quality in child care centers. *Early Childhood Research Quarterly, 15,* 475-496.

Rhodes, S., & Hennessy, E. (2000). The effects of specialized training on caregivers and children in early-years settings: An evaluation of the foundation course in playgroup practice. *Early Childhood Research Quarterly, 15,* 559-576.

Ruopp, R., Travers, J., Glantz, F., & Coelen, C. (1979). *Children at the center: Final results of the national day care study.* Boston: Abt Associates.

Scarr, S., Eisenberg, M., & Deater-Deckard, K. (1994). Measurement of quality in child

care centers. *Early Childhood Research Quarterly, 9,* 131-151.

Tizard, B., Philps, J., & Plewis, E. (1976). Play in preschool centers. *Journal of Child Psychology and Psychiatry, 17,* 251-264.

Wenglinksy, H. (2002). The link between teacher classroom practices and student academic performance. *Education Policy Analysis Archives, 10* (12).

Appendix A

Pay Scale – Quebec Educators

Step Qualified educator	Step Non-qualified educator	Hourly rate on April 1, 2003 ($)	Hourly rate on April 1, 2006 ($)
10	14	18.36	18.73
9	13	17.79	18.15
8	12	17.24	17.58
7	11	16.71	17.04
6	10	16.20	16.52
5	9	15.70	16.01
4	8	15.22	15.52
3	7	14.75	15.05
2	6	14.30	14.59
1	5	13.86	14.14
	4	13.43	13.70
	3	13.03	13.29
	2	12.63	12.88
	1	12.24	12.48

Famille, Ainés, et Condition Féminine Québec (2006).

Appendix B

Early Childhood Environment Rating Scale – Revised (Research Version)

Factor	Item
#1 – Activities/Materials	#3 – Furnishings for relaxation #5 – Space for privacy #15 – Books and pictures #19 – Fine motor #20 – Art #22 – Blocks #24 – Dramatic play #25 – Nature/science #26 – Math/number
#2 – Language/Interaction	#17 – Using language to develop reasoning skills #18 – Informal use of language #30 – General supervision of children #31 – Discipline #32 – Staff-child interaction #33 – Interaction among children #36 – Group time

Early Childhood Environment Rating Scale-Revised (Research Version) (Cassidy et al., 2005)

Appendix C

Caregiver Interaction Scale

	Not at all True	Somewhat True	Quite a Bit True	Very Much True
1. Speaks very warmly to the children	1	2	3	4
2. Seems critical of the children	1	2	3	4
3. Listens attentively when children speak to him/her	1	2	3	4
4. Places high value on obedience	1	2	3	4
5. Seems distant or detached from children	1	2	3	4
6. Seems to enjoy the children	1	2	3	4
7. When the children misbehave, explains the reason or the rule they are breaking	1	2	3	4
8. Encourages the children to try new experiences	1	2	3	4
9. Doesn't try to exercise too much control over the children	1	2	3	4
10. Speaks with irritation or hostility to the children	1	2	3	4
11. Seems enthusiastic about the children's activities and efforts	1	2	3	4
12. Threatens children in trying to control them	1	2	3	4
13. Spends considerable time in activity not involving interaction with the children	1	2	3	4
14. Pays positive attention to the children as individuals	1	2	3	4
15. Doesn't reprimand children when they misbehave	1	2	3	4
16. Talks to the children without explanation	1	2	3	4
17. Punishes the children without explanation	1	2	3	4
18. Exercises firmness when necessary	1	2	3	4
19. Encourages children to exhibit pro-social behavior (e.g., sharing helping)	1	2	3	4

20. Finds fault easily with children	1	2	3	4
21. Doesn't seem interested in the children's activities	1	2	3	4
22. Seems to prohibit many of the things the children want to do	1	2	3	4
23. Doesn't supervise the children very closely	1	2	3	4
24. Expects the children to exercise self-control (e.g., to be undisruptive for group provider-led activities, to be able to stand in line calmly)	1	2	3	4
25. When talking to children, kneels, bends or sits at their level to establish better eye contact	1	2	3	4
26. Seems unnecessarily harsh when scolding or prohibiting children	1	2	3	4

Caregiver Interaction Scale (Arnett, 1989)

Appendix D

Teacher Interaction and Language Rating Scale

	Item	Almost Never		Sometimes		Frequently		Consistently	
1	*Wait and Listen.* Teacher encourages most of the children in the group to verbally and/or nonverbally by waiting expectantly for initiations, using a slow pace which allows lots of time for children to initiate, and listening to allow children to complete their messages.	1	2	3	4	5	6	7	N/A
2	*Follow the Children's Lead.* When the children initiate verbally or nonverbally, teacher follows their lead by responding verbally to their initiations, using animation, and avoiding commands and vague acknowledgements (e.g., uh huh, yeah, that's right).	1	2	3	4	5	6	7	N/A
3	*Join in and Play.* Teacher actively joins in the children's play as a partner by building on their focus of interest and playing without dominating.	1	2	3	4	5	6	7	N/A
4	*Be Face to Face.* Teacher adjusts her physical level by sitting on the floor or in child-sized chair, leaning forward to facilitate face to face interaction, and if above children's level, bending to be close whenever possible.	1	2	3	4	5	6	7	N/A
5	*Use a Variety of Questions.* Teacher encourages conversation with most of the children in the group by asking a variety of WH questions, only using Yes/No questions to obtain information and clarify messages, waiting expectantly for a response, and avoiding test and rhetorical questions.	1	2	3	4	5	6	7	N/A
6	*Encourage Turn-Taking.* Teacher encourages extended verbal turn-taking by linking comments and questions to invite children to take turns, responding with animation,	1	2	3	4	5	6	7	N/A

	waiting expectantly for a response, balancing the number and length or adult to children turns, and using sentence completion only with children at one word stage. Note: must achieve four or more turns on a topic with one or more children for a score of 5.								
7	*Scan.* Teacher facilitates the participation and interaction of all children in group activities by encouraging uninvolved children to participate and/or interact, and ensuring that no one child dominates the interaction.	1	2	3	4	5	6	7	N/A
8	*Imitate.* Teacher imitates the actions, gestures, sounds or words of most of the children in the group. Note: Evaluate only if children are pre-verbal or at one word stage.	1	2	3	4	5	6	7	N/A
9	*Use a Variety of Labels.* Teacher uses a variety of vocabulary (nouns, verbs, adjectives, adverbs) by emphasizing key words; repeating words; labelling objects, actions, attributes, and events; avoiding non-specific words (e.g., it, this, that, there, thank you); and adjusting complexity of vocabulary for different children in the group.	1	2	3	4	5	6	7	N/A
10	*Expand.* Teacher expands by repeating the children's words and correcting the grammar, or by repeating the children's words and adding another idea.	1	2	3	4	5	6	7	N/A
11	*Extend.* Teacher provides information related to the children's topics or the ongoing activity by using comments and questions to inform, project, pretend/imagine, explain, talk about the future, talk about feelings. Note: To obtain a rating of 5, adults must extend frequently and include at least two functions other than informing.	1	2	3	4	5	6	7	N/A

Teacher Interaction and Language Rating Scale (Girolametto et al, 2000)

Appendix E

Caregiver Interview

Personal Background

1. Date of birth?
2. Gender: M___ F___
3. What is your country of birth?
4. When did you arrive in Canada? (if relevant)
5. What is your mother tongue?
6. How long have you been speaking English? (if relevant)
7. How would you rate your fluency in English? (on a scale of 1-5, 1 being "very fluent," and 5 being "not fluent at all")
8. How many languages do you speak?
9. Do you have children? Y___ N___
   If Yes, please tell me their gender and age:

Educational Background

1. Number of years of High School required to graduate? ____
   Number of years of High School completed? ____
   Where did you attend High School?
2. College or CEGEP program enrolled in?
   Describe:
   Number of credits required to graduate? ____
   Number of credits completed? ____
3. University program enrolled in?
   Describe:
   Number of credits required to graduate? ____
   Number of credits completed? ____
4. Qualifications to work in child care?
   Attestation: Number of credits? ____
   ECE: Number of credits? ____
   Date of completion? ____

Job-Related

1. How many years of experience have you had in child care?
2. What are your current wages? > $12__$12-14__$15-17__$17-19__<$19__
3. How many children are in your classroom?
4. Do you have a co-teacher in the classroom with you?
5. Have you attended workshops? Y___ N___
   If Yes, how often? (per year) Can you name these workshops?
6. Why did you choose to enter into this field of work?

Appendix F

Letter to Director

DIRECTOR CONSENT FORM TO PARTICIPATE IN RESEARCH

This consent form states that you agree to participate in a research project being conducted by Amelia Hickey, who is a masters student in the Department of Education at Concordia University (e-mail contact: a_hicke@education.concordia.ca, or by telephone: 514-848-2424, ext. 7999). She is supervised by Professor Jacobs (514-8482424. ext. 2016).

The purpose of our project is to see what the child's day is like in the center, so we would like to look at activities and interactions in the classroom(s) in your center. To this end, we would like to visit your center, spend some time observing in the classrooms and we would like to watch story time on two separate occasions. One would consist of the educator reading a familiar story to the children and the other would be a new book provided by us.

We would like to make three (3) half-day visits to each participating educator's classroom. One will be a visit in which we will familiarize ourselves with the classroom. On another visit, we would like to watch the educator read a familiar story to the children that have been read to them before. Then, we will provide the educator with a book that we would like him/her to read to them for the first time. Of course, we will provide the book in advance so that they can feel comfortable reading it to the children. We would like to meet with the educator and ask a few questions that should take approximately 15 to 20 minutes to answer. We would like to videotape the story readings and hope that you will agree to this arrangement. All of our information that we will gather from our visits to your classroom will be kept strictly confidential and will be stored in a locked cabinet in our private research office at Concordia University.

When we have completed this research project, we will report our findings only in terms of group findings not individual findings.

CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but will not disclose my identity)
- I understand that the data from this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print)_____

SIGNATURE _____

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at areid@alcor.concordia.ca.

Appendix G

Letter to Educator

EDUCATOR CONSENT FORM TO PARTICIPATE IN RESEARCH

This consent form states that you agree to participate in a research project being conducted by Amelia Hickey, who is a masters student in the Department of Education at Concordia University (e-mail contact: a_hicke@education.concordia.ca, or by telephone: 514-848-2424, ext. 7999). She is supervised by Professor Jacobs (514-8482424. ext. 2016).

The purpose of this research project is to see what the child's day is like in the center, so we would like to look at activities and interactions in your classroom. To this end, we would like to visit your classroom, spend some time observing in the classroom and we would like to watch story time on two separate occasions. One would be when you are reading a familiar story to the children and the other will be when you read a book provided by us.

We would like to make three (3) half-day visits to your classroom. One will be a visit in which we will familiarize ourselves with the classroom. On another visit, we would like to watch you read a familiar story to the children that you have read to them before. Then, we will provide you with a book that we would like you to read to them for the first time. Of course, we will give you the book in advance so that you can feel comfortable reading it to the children. We would like to meet with you and ask you a few questions that should take approximately 15 to 20 minutes to answer. We would like to videotape the story readings and hope that you will agree to this arrangement. All of our information that we will gather from our visits to your classroom will be kept strictly confidential and will be stored in a locked cabinet in our private research office at Concordia University.

When we have completed this research project, we will report our findings only in terms of group findings not individual findings.

CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but will not disclose my identity)
- I understand that the data from this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print)_____

SIGNATURE _____

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at areid@alcor.concordia.ca.