

VALIDATION OF A TEACHER MEASURE OF SCHOOL READINESS WITH PARENT AND CHILD-CARE PROVIDER REPORTS

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ABSTRACT

Early Development Instrument (EDI) is a relatively new tool, developed at the Canadian Centre for Studies of Children at Risk at McMaster University to assess readiness to learn at school among 5-year-old children, prior to their entry to Grade 1 (Janus & Offord 2000). Readiness to learn at school is defined as a child's ability to meet the task demands of school, such as being cooperative, sitting quietly and listening to the teacher, and to benefit from the educational activities that are offered by the school (Doherty 1996).

The key domains included in the measure are: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communications skills/general knowledge. Teachers are the only informants and therefore it is imperative to establish the inter-rater reliability of the instrument. Moreover, additional data from other informants (child-care providers, parents, and children themselves) allow to identify correlates of readiness to learn outcomes.

This study was carried out in six child care centres in Calgary, with the total of 51 families. Kindergarten teacher, child-care teacher, and parent completed the EDI. Parents were also interviewed about child's health and interests, and child care history. Children were administered a vocabulary test (Peabody Picture Vocabulary Test, PPVT).

For the five EDI scales, an average parent-teacher agreement was 0.46 (range 0.35-0.66), and an average kindergarten teacher-child care centre teacher agreement was 0.70 (range 0.52-0.80). Correlations between the PPVT score and the teacher's ratings on the Language and Cognitive Development scale ranged from 0.26 to 0.44, and with ratings on the Communication Skills and General Knowledge scale ranged from 0.45 to 0.57 (all correlations statistically significant). Most, but not all, of the relevant questions from parent interview were also significantly related to the EDI scores. In addition, we found that some aspects of the child's non-parental care history, like a number of changes in child care arrangements were also related to the EDI scores.

This study, despite its small sample, clearly demonstrated that the EDI has acceptable validity. Moreover, it has highlighted some issues for possible further investigations, which will be continued in larger samples.

INTRODUCTION

Between 1997-1999, the Canadian Centre for Studies at Risk at McMaster University developed the Early Development Instrument (EDI), an assessment of readiness to learn at school among kindergarten-age children, prior to their entry to Grade 1. The EDI is a teacher-completed checklist, which can only be interpreted at a group-level. Since 1998/99 until the current school year, the EDI was completed for over 60,000 children in over 20 communities across Canada.

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The key domains included in the EDI are: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. As the kindergarten teacher is the only informant, it is imperative to establish the inter-rater reliability of the instrument. Moreover, additional data from other informants (child-care providers, teacher, and children themselves) allow to identify correlates of readiness-to-learn outcomes.

This study was carried out in six child-care centers in Calgary, with over 50 families. Kindergarten (school) teacher, child-care teacher, and parent completed the EDI. Parents were also interviewed about child's health and interests, and child care history. Children were administered a vocabulary test.

We expected that 1) the school teacher and child-care teacher ratings would have high reliability, but that parent ratings may be somewhat different; 2) direct language testing of the child would have high correlation with language-related scales on the EDI for all informants; 3) relevant questions from parent interview would be related to teacher and child-care EDI ratings.

METHODS

This study was carried out with collaboration of the Calgary Regional Health Authority. Of the nine child care centers in Calgary approached for participation in the study, six agreed (the refusal was based on time-constraints). In total, 54 families participated. Complete data from all three informants is available for 51.

MEASURES

Three measures were used:

Early Development Instrument (EDI) – a 120-item checklist, grouped into five domains: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. Scores are calculated for each domain. Parent, school teacher and child-care teacher completed the EDI.

Peabody Picture Vocabulary Test (PPVT) (Dunn & Dunn, 1988) - a test of receptive language which provides a brief index of cognitive functioning. The PPVT score is considered to be a reasonably reliable approximation of the IQ. Each child was tested directly.

Family interview – a set of questions for parents only covering issues in four categories:

- **family socioeconomic status**: income, education, immigration status, intact family status, etc.
- **child care history**: number of changes, age started etc.
- **child's health and behaviour**: illnesses, hearing, vision, visits to the doctor etc., and getting along with other people (teachers, siblings)
- **parent support of child's literacy-related activities**: frequency of reading to/with child, frequency of visiting a library, etc.

ANALYSES

All associations were analysed by calculating correlation coefficients. Sample size was not large enough to control the correlations for demographic characteristics.

SAMPLE

Girls		28	54.9%
Mean age		5.9 years	
English as Second Language		2	3.9%
Parents' marital status: Married		24	47.1%
	Separated/Divorced	14	27.5%
	Never married	13	25.5%
Parents born in Canada: Mothers		45	88.7%
	Fathers	42	82.4%
Parents' education: Mother: Grade school		9	17.7%
	Some college	17	33.3%
	University degree	24	47.1%
Parents' education: Father: Grade school		12	23.6%
	Some college	13	25.5%
	University degree	18	35.3%
Number of people in the household: 2		9	17.6%
	3	19	37.3%
	4 or more	22	44.0%
Mean family income		\$40,000 - \$49,999	

Previous child care experiences

The majority of children in the sample (85%) experienced more than one non-parental caregiver.

Total N Changes	0	8	15.7%
	1	15	29.4%
	2	11	21.6%
	3 or more	17	33.4%
Types of Previous Child Care	Other home, non-relative	11	21.6%
	Day care	19	37.3%
	Child in own care	6	11.8%

The most frequent reason for change were altered circumstances (moved, custody): 15 (38.5%), followed by dissatisfaction in the arrangements: 10 (25.6%).

RESULTS

CORRELATIONS OF THE EDI SCORES BETWEEN RATERS AND WITH PPVT LANGUAGE TESTS

Scale	Teacher (school) with Teacher (child care)	Teacher (school) with Parent	Teacher (child care) with Parent
Physical Health and Well-being	.69	.38	.26
Social Competence	.80	.48	.52
Emotional Maturity	.77	.35	.44
Language and Cognitive Development	.72	.66	.43
Communication Skills/General Knowledge	.52	.46	.35
Total	.82	.53	.50

All correlations are statistically significant. These results demonstrate that the teachers in both settings give a very similar picture of the child.

The table below shows correlations with the standardised PPVT score obtained through direct language testing of each child with the relevant EDI scales (i.e., language and communication).

	Teacher (school)		Teacher (child-care)	
	Lang/Cog	Comm/Gen	Lang/Cog	Comm/Gen
PPVT Score	.44	.49	.23	.41

These figures demonstrate that teachers' ratings are reliable. Only the correlation of the teacher (child care) Language/Cognitive score and PPVT score was not statistically significant.

RELATION OF THE EDI SCORES TO OTHER FAMILY CHARACTERISTICS

Several variables were investigated here: family income, parent education, parents' place of birth, number of changes in child-care arrangements, the number of hours per week spent in child-care, and age when non-parental care started.

Below are the correlations between school-teacher, child-care-teacher, and parent EDI scores (Language and Cognitive Development and Communication Skills and General Knowledge scales) and family income, parent education, and number of changes in child-care arrangements. Other variables did not show relation to the EDI scores.

	Teacher (school)		Teacher (child care)		Parent	
	Language/ Cog. Devt.	Comm. Skills/ Gen. Know.	Language/ Cog. Devt.	Comm. Skills/ Gen. Know.	Language/ Cog. Devt.	Comm. Skills/ Gen. Know.
Family income	.25#	.33**	.28*	.24#	.37**	.29*
Parent education	.08	.37**	.01	.23#	.16	.15
Number of changes in child-care arrangements	-.32**	-.26#	-.06	-.15	-.30*	-.16

Significance levels: # $p < .1$, * $p < .05$, ** $p < .01$.

CONCLUSIONS

SUMMARY OF RESULTS

- For the five EDI scales, an average parent-teacher agreement was 0.43 (range 0.26-0.66), and an average school-teacher - child-care teacher agreement was 0.70 (range 0.52-0.80). As expected, parent-teacher agreements were generally lower (though still statistically significant) than agreements between teachers.
- Correlations between the PPVT score and teachers' ratings on language-related scales ranged from 0.23 to 0.57. Generally, child-care teachers' ratings demonstrated weaker correlations than school teachers' ratings.
- Most relevant questions from family interview were significantly related to the EDI scores in appropriate domains (e.g., child's health and physical health score, being usually happy and social and emotional competence scores). However, not all questions showed expected associations.
- Some aspects of the family's socio-economic status (income, parent education) and child-care history (number of changes) were also significantly related to children's readiness to learn.

CONCLUDING REMARKS

Despite a relatively small sample, this study demonstrated unequivocally that the EDI has excellent inter-rater reliability. As more and more communities decide to use the EDI to monitor their children's readiness to learn, and as a tool for mobilisation of resources to support early years' initiatives, we are confident in recommending it.

EDI also showed some expected associations with demographic characteristics, and with aspects of child's life reported by parents in family interview. The most striking relationship, warranting further study, was that more changes in child-care arrangements were associated with poorer EDI scores. While most variables from parent interview correlated significantly with the EDI, some did not. It is therefore clear that we have to continue this investigation on larger samples. One such study is currently under way, in collaboration with the Federal Understanding the Early Years Initiative.

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