

MIGRATION AT SCHOOLS: MAKING EDUCATION OF PRESCHOOL CHILDREN FLEXIBLE THROUGH DYNAMIC ASSESSMENT

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Abstract

Migration processes are part of the globalized world in which we live. Although much of the migration experience is enriching for both the immigrant and the receiving environment, its difficulties remain. One area where difficulties are visible is the educational environment. Education policies, typically based on structured curricula, are not adapted to the peculiarities of immigrant children, who often produce lower academic outcomes. The main trouble with this situation is that performance and social problems do not appear until the child has spent several years at school. Dynamic assessment methodology has come to light as an alternative for immigrant children, making it possible to distinguish their poor academic performance from their learning potential. This study presents the line of research we have pursued in southern Spain with preschool immigrants from diverse cultural and linguistic backgrounds. Data shows that preschool students' learning potential is independent of their cultural background. This study also discusses the advantages of including dynamic assessment in a multicultural educational context.

Key words: *learning potential, multicultural education, language proficiency, childhood, cognitive function.*

Introduction

Migration phenomena are increasingly present in the globalized world we live in. These processes involve a number of variables affecting the adaptation of persons who migrate into new cultural systems; an important part of these variables pertain to the need of children from immigrant families to adapt to the educational system. Differences in terms of child rearing practices, educational systems, ideology, religion, etc. provoke a series of problems in adapting to the new educational system, and are typically accompanied by poor academic performance (Resing, De Jong, Bosma & Tunteler, 2009; Josman, Abdallah & Engel-Yeger, 2010). One of the most important factors in this process is the difficulty of integrating with teachers, classmates and curriculum because a lack of language facility in the new issue (Peña, Iglesias & Lidz, 2001).

Since the language conflict is one of the most apparent difficulties from the moment that the child enters school, it has been traditionally addressed as an urgent need for intervention, with diverse measures being taken to help keep this deficit from impairing the performance of immigrant children. The creation of special classrooms for language immersion and educational support has been the most widely used approach (García, Rubio & Bouachra, 2008). However, these children continue to have difficulty mastering the language, and this is associated with poorer academic performance (Taylor & Whittaker, 2003).

In addition to actual academic outcomes, many research studies show that children of

immigrant origin perform more poorly on classic tests for assessing intelligence and cognitive skills (Hessels, 2000; Resing et al., 2009). This is an important issue, since these classic tests are the most widely used in the practice of school psychology, and their results largely determine any curriculum adaptations to be made.

Some of the reasons suggested as causes for this impairment include: language differences, the unfamiliarity of assessment tests for children from other cultures, differences in style of social interaction between the child and the assessor, different cultural groups not being represented in the normative data, etc. All of these lead to children from ethnic minorities being overrepresented in the educational support classrooms at school.

One of the alternatives proposed for assessing children of immigrant origin has been the use of dynamic assessment methodologies. **Dynamic assessment is based on a structured assessment procedure with a pretest – mediation – posttest format. In other words, between two phases of standard assessment, there is an assessor/assessee interaction phase for the purpose of optimizing task performance and facilitating the assessor's observation of cognitive and metacognitive strategies that the children pursue as they interact with a concrete task** (Calero, 2012; Haywood & Lidz, 2007; Lidz, 2005). Dynamic assessment techniques are considered to be suitable for immigrant children since they focus on the process that the child uses to solve a task, more than the final result obtained. The key to keep in mind is the individual and not the prevailing normative criteria. Specifically, several studies show that dynamic assessment is more sensitive than traditional assessment for tapping the real capacity of children of immigrant origin (Resing et al., 2009; Tzuriel & Kaufman, 1999).

Elisabeth Peña et al. (2001) show how dynamic assessment is useful in the area of language. The methodology can distinguish between immigrant children who really need support in language development from those who merely show some influence from their native language, but have a comparable level of development to that of the dominant culture group.

Research Focus

The preschool stage is one of the best moments to implement strategies for preventing future problems when the children advance to higher levels of education. Thus, it is fundamental to have assessment procedures that can provide information about the strengths and weaknesses of these young ones. Keeping this claim in mind, the present study aims to evaluate the usefulness of dynamic assessment with immigrant preschoolers in the Spanish context, in comparison to traditional assessment techniques.

This study seeks to establish whether immigrant preschoolers from diverse cultural and language backgrounds possess similar learning potential to that of Spanish children.

Research Methodology

Research Sample

176 preschool-children, ages 4 and 5 (48 to 60 months; $M = 55.25$ months, $SD = 3.92$) participated in the studies. All the children were born in Spain and were speakers of Spanish. The children were enrolled in the second year of public-sector preschools in the south of Spain. **None of the participants in the study presented problems of sensory capacity, learning, psychology or behavior. The sample was divided into three groups according to the cultural background of the parents:** 1) The Spanish group (native Spanish) consisted of 85 preschool-children, 2) The children with Spanish-speaking immigrant parents (S-S immigrant parents group) consisted of 45 children with parents of South American origin whose native language is Spanish (Bolivia, Argentina and Ecuador). 3) The children with non-Spanish speaking immigrant parents (N-S-

S immigrant parents group) consisted of 46 children with parents from Morocco, Russia and Romania.

Instrument and Procedures

Kaufman's Brief Intelligence Test (K-BIT) (Kaufman & Kaufman, 1994). This is a survey which permits rapid assessment of a child's general intelligence by means of two subtests: Vocabulary and Matrices. The test provides a verbal IQ, a non-verbal IQ and a composite IQ reflecting global test performance. Reliability of the Spanish adaptation of the test has been rated, for the age range considered, at 0.88 for the Vocabulary subtest, 0.74 for Matrices and 0.83 for global IQ. The version has been shown to have high criteria validity compared with the WISC-R, with correlations of 0.80 for global IQ, 0.77 for Vocabulary with respect to verbal IQ and 0.52 for Matrices with respect to manipulative IQ (Cordero & Calonge, 2000). This test was selected since it provides a quick method of determining general IQ, and a detailed assessment of the different types of intelligence was not required for this study.

Application of Cognitive Functions Scale (ACFS) which was adapted into Spanish by Calero, Robles, Márquez & De la Osa (2009) from original version developed by Lidz & Jepsen (2003). This is a dynamic assessment procedure which measures the application of learning strategies and cognitive processes in typical tasks from the preschool curriculum. The Spanish adaptation has been shown to have good reliability with a Cronbach Alpha of 0.74; discriminant validity has been confirmed with respect to the differential diagnosis between children with Down Syndrome, children with learning difficulties and healthy children (Calero, Robles & García-Martín, 2010) and between children with high and low academic performance. Validity criteria of the different subtests have also been confirmed, with correlations between the ACFS subtests and other tests assessing the skills in question falling between 0.64 and 0.74 (Calero, Carles, Mata & Navarro, 2010).

Language Competence Register (LCR). The teachers assessed the child's global language competence (production and comprehension of oral language) using a Likert-type rating scale from 1 to 5. For example, they answered the following question: in your assessment, does the child understand the instructions you give about how to do a school assignment? This register has been shown to have a Cronbach Alpha reliability of 0.94 for the complete set of items.

The Education Delegation of the Autonomous Community of Andalusia (Spain) granted access to twenty schools in the metropolitan area of Granada with the highest concentration of immigrant children. After obtaining permission from staff of the selected preschools, children were selected from candidates who presented the required personal characteristics (absence of behavioural, learning or sensory problems), taking into account their family circumstances (whether or not they were immigrants, and the parents' native language).

Permission and informed consent were obtained from the principals and teachers of all participating preschools, and from all parents. The preschoolers were then given the different tests and language information was obtained from their teachers.

Preschoolers were assessed individually in a room separate from their regular classroom, during two sessions lasting 20 to 30 minutes. The tests were administered by a psychologist from the research group who was experienced with these techniques, and they were given in the same order for all children. The two sessions were separated by a period of 2 or 3 days.

Data Analysis

A quasi-experimental pre-post design was employed with three groups (native Spanish, children with S-S immigrant parents and children with N-S-S immigrant parents). The data were analyzed with ANCOVA and repeated measures analysis of a general linear model. All statistical analyses were done with SPSS version 18.0 software. The independent variable in the ANCOVA was the grouping 'origin and parents' command of the language', according to three groups: Spaniards, immigrants with Spanish-speaking parents and immigrants with non-Spanish-speaking parents. The dependent variables were scores on the K-BIT and the ACFS pretests. There were two factors in the repeated measure analysis: an intra-group factor (time) and an inter-groups factor (groups by cultural origin).

Research Results

The results of ANCOVA with language proficiency as a covariate showed significant differences on K-BIT scores among the three sets of children grouped according to parents' cultural background (see Table 1). The differences were seen in both the overall IQ score ($F(2,175) = 13.363, p < 0.05$), and in the scores on the verbal subtest ($F(2,175) = 20.81, p < 0.05$). However, no difference was seen in the nonverbal subtest score. With regard to the total score on the K-BIT, the Bonferroni adjustment for multiple comparisons confirmed that native-Spanish children obtained significantly higher scores than both immigrant children of S-S immigrants parents ($p < 0.012$) and immigrant children of N-S-S immigrant parents ($p < 0.0001$). However, Bonferroni did not confirm such differences between groups of immigrant children. In the verbal subtest there were significant differences between the group of native-Spanish children and immigrant children of S-S immigrants parents ($p = 0.009$) and immigrant children of N-S-S immigrants parents ($p < 0.0001$). Moreover, the two groups of immigrant children also differed significantly in their results for the verbal subtest ($p < 0.002$), with moderate effect sizes for total and verbal scores.

With regard to performance as evaluated with the ACFS, there were no significant differences between the groups in pretest scores on any of the ACFS subtests except for verbal planning ($F(2,175) = 4.475, p < 0.05$). The Bonferroni test detected significant differences only between native Spanish children and the group of immigrant children of N-S-S immigrants parents group ($p = 0.011$), with better performance in the former group.

Table 1. Differences between Groups in Intelligence and Cognitive Performance with Spanish Language Proficiency as a Covariate.

	Groups						F(2,175)	p	Eta squared
	Spanish children		Immigrants with Spanish-speaking parents		Immigrants with non-Spanish-speaking parents				
	M	SD	M	SD	M	SD			
K-BIT vocabulary	101.13	14.29	89.00	11.75	78.00	13.07	20.81	0.0001*	0.19
K-BIT matrices	108.13	12.39	103.42	11.62	102.41	13.52	2.081	0.13	0.02
K-BIT total	103.00	11.76	93.31	10.75	86.52	12.67	13.363	0.0001*	0.13
ACFS Classification	4.69	2.38	4.31	3.05	4.70	2.69	0.394	0.67	0.00
ACFS Auditory memory	5.09	3.56	4.80	2.54	3.96	3.41	0.368	0.69	0.00
ACFS Visual memory	5.91	1.97	5.89	1.85	5.80	1.92	0.522	0.59	0.00
ACFS Pattern sequences	9.55	4.37	8.49	4.66	8.13	4.86	0.019	0.98	0.00
ACFS Perspective-taking	8.99	3.56	9.11	3.17	8.39	3.66	0.461	0.63	0.00
ACFS Verbal planning	4.92	3.59	3.07	3.59	1.96	2.18	4.475	0.01*	0.04

* $p < 0.05$

Results of a general linear model of repeated measures reveals significant differences between the ACFS pretest and posttest scores in all the subtests of the scale and in the total score for the whole sample: for the subtest on classification (Wilks $\lambda(2,175) = 0.426$; $p < 0.0001$), for the subtest on auditory memory (Wilks $\lambda(2,175) = 0.469$; $p < 0.0001$), on visual memory (Wilks $\lambda(2,175) = 0.579$; $p < 0.0001$), on pattern sequence (Wilks $\lambda(2,175) = 0.709$; $p < 0.0001$), on perspective taking (Wilks $\lambda(2,175) = 0.622$; $p < 0.0001$), on verbal planning (Wilks $\lambda(2,175) = 0.672$; $p < 0.0001$) and total score (Wilks $\lambda(2,175) = 0.234$; $p < 0.0001$).

Table 2. Pretest/posttest scores for each ACFS subtest, analyzed according to a general linear model of repeated measures.

ACFS tasks	Groups	Pretest		Posttest		Interaction Intra-group		Inter-group	
		M.	S.D.	M.	S.D.	Wilks Lambda	Eta Squared	F(2,175)	Eta Squared
Classification	Spanish children	4.58	2.33	7.62	2.49	0.999	0.00	0.185	0.00
	Immigrants with S-S parents	4.40	3.10	7.55	2.45				
	Immigrants with non-S-S parents	4.80	2.70	7.71	2.09				
Auditory memory	Spanish children	4.99	3.51	8.39	2.79	0.991	0.00	0.796*	0.03
	Immigrants with S-S parents	4.98	2.65	8.00	2.88				
	Immigrants with non-S-S parents	4.02	3.42	6.80	3.26				
Visual memory	Spanish children	5.92	2.01	7.39	1.74	0.999	0.00	0.269	0.00
	Immigrants with S-S parents	5.87	1.83	7.36	1.82				
	Immigrants with non-S-S parents	5.76	1.90	7.11	1.72				
Pattern sequence	Spanish children	9.33	4.36	10.67	3.76	0.979	0.02	0.798	0.00
	Immigrants with S-S parents	8.68	4.64	10.83	4.23				
	Immigrants with non-S-S parents	8.36	4.96	9.71	4.40				
Perspective taking	Spanish children	8.94	3.47	10.37	3.27	0.977	0.02	1.182	0.01
	Immigrants with S-S parents	9.21	3.18	11.47	1.81				
	Immigrants with non-S-S parents	8.53	3.74	10.38	2.91				
Verbal planning	Spanish children	4.77	3.54	6.02	3.49	0.990	0.01	9.881**	0.10
	Immigrants with S-S parents	3.23	3.74	4.36	3.64				
	Immigrants with non-S-S parents	2.04	2.24	3.64	3.03				
Total	Spanish children	38.54	10.66	50.48	10.55	0.994	0.00	3.575*	0.04
	Immigrants with S-S parents	36.67	11.50	49.34	10.97				
	Immigrants with non-S-S parents	33.51	11.63	45.20	10.97				

* $p \leq 0.05$, ** $p \leq 0.01$

No significant intra-group differences appeared in the interaction of the factors 'time' (pretest/posttest) and 'cultural origin' (Spanish children/ immigrant children whose parents were from S-S countries/ immigrant children whose parents were from N-S-S countries) on any of the ACFS subtests or on the total score.

Nor were significant inter-group differences observed on most of the subtests of the scale: classification, visual memory, perspective taking and pattern sequence. Significant inter-group differences did appear on auditory memory ($F(2,175) = 0.796; p < 0.043$), verbal planning ($F(2,175) = 9.881; p < 0.0001$) and total score ($F(2,175) = 3.575; p < 0.030$) (see Table 2). *Post hoc* analyses with the T3 Dunnett test detected significant differences between native Spanish children and the group of immigrant children of N-S-S immigrant parents for **verbal planning** ($p < 0.0001$) and **total score** ($p < 0.029$), with **better transference in the former group**. *Post hoc* analysis also shows significant differences between native Spanish children and the group of immigrant children of S-S immigrant parents in the **verbal planning subtest** ($p < 0.044$), in favor of Spanish children.

Discussion

Results show that preschoolers with immigrant parents obtained lower scores than the native children on a classic intelligence test, owing mainly to the verbal subtests from each test, especially when the parents were not Spanish-speaking. However, no significant differences appeared on the non-verbal subtests, despite a tendency for immigrant children to score somewhat less than the native children (Taylor & Whittaker, 2003).

When a dynamic assessment test was used, it can be observed that the groups level out in their performance and that all groups obtain similar results on the measurement of learning potential, including on those tasks where there had been an initial difference in performance between the groups of children. One noteworthy result is that on both the static test (K-BIT vocabulary subtest) and the dynamic test (verbal planning pretest and transfer score from this same subtest and from auditory memory), command of the language is a determining variable for the performance level attained. It is important to note that both native and immigrant children responded similarly to training with highly verbal content. In other words, the immigrants, even those who for environmental reasons had a lesser command of the language, showed similar learning potential to that of the native children. It can thus be reasoned that the differences that place them at a disadvantage from their earliest years of schooling can easily be overcome with early, individualized intervention (Haywood & Lidz, 2007; Hessels, 2000).

Conclusions and Implication for Practice

This study shows the importance of considering alternative assessment methods for populations with a different cultural origin. Dynamic assessment is an option to be considered, since it makes it possible to obtain information about the needs of each individual and his/her potential to benefit from teaching processes. At the same time, results show that it is of vital importance to reinforce knowledge of the language of the receiving country in order to ensure appropriate integration of immigrant children in the schools. For these reasons, we consider that flexibility in the educational context, from its earliest stages, is the best strategy to be adopted in educational policies.

Based on the above, we would indicate the following to be very necessary:

- Initiate early assessment with immigrant children. That is directed toward identifying their strong and weak points. So that action steps may be designed in order to prevent likely problems in school adjustment.
- In addition to taking into account their command of the dominant language of their receiving country.

In this direction, curriculum-focused dynamic assessment seems to be a very useful option for establishing individualized interventions. This conclusion should be replicated in research using different samples, and carried out in different countries.

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