Learning styles determine different immigrant students’ results in testing settings: relationship between nationality of children and the stimuli of tasks.

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Literature presents little examination on the learning styles and sensorial preferences of immigrants during decoding of different tasks in testing contexts. The verbal stimuli as presented in second language (L2) tests could influence the results of those groups and explain their maladaptive behaviours concerning academic failure. The stimuli and typology of tasks administered to different minorities should be seen as cues to understand their academic and cognitive behaviours (cognitive mapping and coding). Visual stimuli (either by means of pictures or orthographic cues) and auditory stimuli are differently encoded with regard to the students’ age of acquisition (of L2). This lack of knowledge indicates the need to have guidelines to evaluate the minorities at schools. According to the “Guidelines for research in ethnic minority communities” of the American Psychological Association [APA], the ethnic groups, focusing on immigrants in the US, must be examined and studied taking into account their language of origin, their culture and group meaning (the case of the islanders), their migration experience and individual acculturation preferences. This research intends to examine whether there are differences between ethnic and immigrant populations when performing specific tasks with pictures, written words and auditory exercises as stimuli for language and verbal reasoning assessment in Portuguese as a second language. Taking into account the reaction to each stimulus, we may obtain the necessary information of immigrants’ skills in second language as well as their cognitive preferences toward tests.

Method

Out of the 108 immigrant students, 81 did the recall test (two levels: recall of full text and words, in writing); 98 did the picture-based phonemic task; 93 children did the picture naming task; 89 did the dichotic hearing test. Children below A1 proficiency level did not carry out the tasks because they were not eligible for these specific tasks. In the core sample, 46 (43%) were male and 59 (55%) female, mean age=13 years old (SD=2.7). Twenty-five students came from China, 6 from Latin America, 31 from Eastern Europe (mainly Russia and Ukraine), 19 from Portuguese-speaking African countries, 12 from Western Europe and 14 from the Indian subcontinent. The mean length of residence was 3 to 4 years. The families had the same several languages’ background as their children. As for socio-economic status, participants were evaluated taking into account the educational background and the professional situation of their families (employed or not employed in Portugal; profession with or without specialisation).

Instruments

1) Story recall test
2) Picture naming task
3) Picture phonemic recognition task
4) Dichotic hearing test

The children were introduced to the tasks in a double manner: computer and paper simultaneously. For the specific block of the four tasks, individuals took approximately 20 minutes. They were informed of the tasks’ procedure and carried them out during their classes. The schools were also informed about it during the authorizations process. Participants were controlled for nationality and home language.

Results

The statistical differences were significant in all children’ groups in the auditory discrimination and visual decoding tasks: (p>.05) auditory text recall a) (F(5,80) = 5.414, p = .03, partial η^2 = 0.285) and b) (F(5,80) = 4.129, p = .02, partial η^2 = 0.179), picture naming (F(5,93) = 2.319, p = .04, partial η^2 = 0.117), picture phonemic recognition (F(5,98) = 25.24, p = 0.3, partial η^2 = 0.219) and dichotic hearing (words transfer) (F(5,83) = 2.730, p = .025, partial η^2 = 0.108). The Manova allowed to compare means and standard deviation error of performance in all tasks. η^2 values indicated that there were moderate to larger effects for the nationality as a factor that explains the variance of performance along the four tasks by comparing the six groups of students.

Table 1. Second language learners’ performance in different tasks determined by auditory and visual stimuli

Tasks	Nationality	Parents’ Nationality
	F ¹ partial η^2	M %
Auditory stimuli (recall test – full text)	5,414 0.285	1.649 .119
Auditory stimuli (recall test – words)	4,129 0.179	1,503 .119
Visual stimuli (picture naming)	2,319 0.117	1,937 .130
Visual stimuli (picture phonemic recognition)	25,24 0.219	1,312 .088
Auditory stimuli (dichotic listening)	2,730 0.108	1,662 .126

Discussion

The task inputs (stimuli) appeared to influence performance. Chinese children performed the worst when the tasks demanded listening comprehension while they did not show statistically significant differences and did not have the lowest means in the visual input tasks. Concerning visual decoding, the other groups contrasted: Asian (not Chinese) had the lowest means and the Eastern European had the highest performance. However, the Eastern European children also had more difficulty in the auditory recall task. Visual and auditory discrimination should be differently included for minorities, enhancing their solving problems in the areas they find more difficult: auditory discrimination in L2 for Chinese and visual (picture and orthographic) decoding for Asian from Indian countries. Further studies should also consider the dual task (picture and listening stimuli simultaneously) in the evaluation of differences among the minorities, regarding the younger ages, to understand how to mitigate the auditory discrimination difficulty, especially in specific groups of immigrants. As for listening comprehension and concerning context-based strategies, there are several abilities to be developed in immigrant school population, such as auditory discrimination, working memory, audience awareness and prior knowledge. Regarding the visual comprehension involved in decoding images and sequence of images, there are other abilities involving visual memory, prior cultural background and prior schooling experience. The early stages of L2 learning are critical in terms of tasks and their stimuli. The main question is to determine how different the tasks need to be for distinct cultural backgrounds in the same classroom.

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