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Second-Language Acquisition and Bilingualism at an Early Age and the Impact on Early Cognitive Development

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Introduction

The possibility that early bilingualism affects children's language and cognitive development has long been a concern for parents and educators. In the first half of the 20th century, the prevailing view was that bilingualism and second-language acquisition early in life made children confused and interfered with their ability to develop normal cognitive functions[1] and succeed in educational environments.[2] These ideas were dramatically reversed in a landmark study by Peal and Lambert[3] that showed a general superiority of bilinguals over monolinguals in a wide range of intelligence tests and aspects of school achievement. Recent research has been more balanced, identifying areas in which bilingual children excel and others in which bilingualism has no effect on their development.[4]

Subject

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The question regarding the potential impact of bilingualism on children's development has always been important, but has increasingly emerged as a crucial concern for modern societies and for Canada in particular. In addition to the official commitment to a national policy of second-language acquisition and bilingualism, immigration has transformed Canada into a rich multilingual and multicultural nation. Public schools, especially in major urban centres, are home to large numbers of children for whom English or French is a second language. These children represent an enormous variety of home languages and often constitute the majority of children in a single classroom. Therefore, it is imperative that we understand the impact of these language backgrounds on children's cognitive and educational futures.

Problems

Information about the language, cognitive and educational development of children with varied language backgrounds is essential to interpret the performance of these children in school and assess their development. For example, children with limited proficiency in the language of schooling are certain to experience increased difficulty in coping both academically and socially, and it is important to identify these difficulties in order to understand what intervention or remedial approaches are needed.

Research Context

The research is typically conducted in classrooms, often settings containing both multilingual and monolingual children. The context in which the bilingualism or second language occurs is important, even though it is not always included as a formal aspect of research investigation. There is evidence that whether the child's home language is in a majority or minority situation, is valued in the community, and is used as a medium for literacy affects the child's linguistic and cognitive outcomes.[5] Therefore, the implications of the child's language experience should ideally be examined with careful attention to the social and linguistic factors that describe the child's educational environment.

Key Research Questions

The important issues that follow from linguistic diversity are the cognitive and educational outcomes for bilingual children. First, it is necessary to establish whether language acquisition proceeds at the same rate and in the same manner for children who are learning two languages simultaneously or are learning a second language after having begun to master one. Second, are

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children able to acquire literacy skills at school if they are either bilingual or learning a second language, especially if their home language is not the language of instruction? Finally, are there consequences for normal cognitive development in terms of the child's ability to acquire new concepts or perform various calculations (e.g., arithmetic), especially if school instruction is in the child's weaker language?

Recent Research Results

There are three main outcomes from this research. First, for general language proficiency, bilingual children tend to have a smaller vocabulary in each language than monolingual children in their language.[6] Nonetheless, their understanding of linguistic structure, called metalinguistic awareness, is at least as good[7] and often better[8] than that of comparable monolinguals. Second, the acquisition of literacy skills in these children depends on the relationship between the two languages[9] and the level of proficiency in the second language.[10] Specifically, children learning to read in two languages that share a writing system (e.g., English and French) show accelerated progress in learning to read; children whose two languages are written in different systems (e.g., English and Chinese) show no special advantage, but neither do they demonstrate any deficit relative to monolinguals. The benefit of learning to read in two languages, however, requires that children be bilingual and not second-language learners whose competence in one of the languages is weak. Third, bilingual children between four- and eight-years old demonstrate a large advantage over comparable monolinguals in solving problems that require controlling attention to specific aspects of a display and inhibiting attention to misleading aspects that are salient but associated with an incorrect response. This advantage is not confined to language processing, but includes a variety of non-verbal tasks that require controlled attention and selectivity in such problems as forming conceptual categories,[11] seeing alternative images in ambitious figures,[12] and understanding the difference between the appearance and functional reality of a misleading object.[13] These differences persist across the lifespan conferring cognitive benefits to bilinguals at all ages, and even providing cognitice reserve that allows bilinguals to function independently even through the early stages of dementia.[14]

Conclusion

The results of these studies demonstrate that childhood bilingualism is a significant experience that has the power to influence the course and efficiency of children's development. The most surprising outcome is that these influences are not confined to the linguistic domain, where such influence would be expected, but extend as well to non-verbal cognitive abilities. In most cases,

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the child’s degree of involvement with a second language, defined as the difference between bilingualism and second-language acquisition, is an important variable that determines both the degree and type of influence that is found. Three patterns of influence were noted in these studies. One outcome is that bilingualism makes no difference, and monolingual and bilingual children develop in the same way and at the same rate. This was found for cognitive problems such as memory-span development and language problems such as phonological awareness. The second is that bilingualism disadvantages children in some way. The primary example of this is in the development of vocabulary in each language. The third pattern, and the most prevalent in our studies, is that bilingualism is a positive force that enhances children’s cognitive and linguistic development, improving access to literacy if the two writing systems correspond and development of general executive processes for all bilingual children solving a wide range of non-verbal problems requiring attention and control. These executive control abilities are at the centre of intelligent thought.

Implications

Parents are often concerned that using a non-community language as the language of their home will disadvantage their children. This program of research provides solid evidence that the overwhelming effect of bilingualism in the home is positive. The disadvantages are relatively minor and easily overcome. The implications for schooling are more complex. Children’s success in school is strongly dependent on their proficiency in the language of instruction, a relationship that holds for important linguistic activities (e.g., learning to read), non-verbal computational subjects (e.g., mathematics), and content-based curricula (e.g., social studies). In all these cases, children must be skilled in the forms and meanings of the school language and be competent readers of that language. Bilingual children may not be at the same level as their monolingual peers, and second-language learners for whom English or French is not their home language may have not built up adequate skills in the instructional language to succeed in schools, although the vocabulary gap between monolingual and bilingual children disappears if only school-based words are considered.[6] The evidence for the overwhelming positive benefit of bilingualism, together with evidence that bilingual children are not cognitively handicapped, indicates an important role for schools in providing a means for these children to build up their language skills in the school language so that they can be full participants in the classroom and reap the most positive benefit from their educational experience.

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