

Bilingual Acquisition and Cognitive Development in Early Childhood: Challenges to the Research Paradigm

Yavuz Akbulut*

ABSTRACT. The belief that learning a second language (L2) poses challenges to cognitive performance in early childhood is questioned along with the ideas of proponents and opponents. It is regarded colorable to claim that development in bilinguals and monolinguals can be different because of the functions or advantages of specific experiences in each language. Studies maintaining that bilingualism influences cognitive development in early childhood lead one to the conclusion that language and cognition are interdependent rather than independent issues. Nevertheless, bilingualism has been treated as a single discrete independent variable ignoring that it is a multidimensional notion, which seems to remain a problem in the experimental paradigm of research. Thus, to scrutinize on the influences of bilingualism, it is considered crucial to take into consideration the unique features of participants, tasks and the relationships of those tasks to the constructs in question. Finally, bilingual children's ability to transfer their decontextualized skills and knowledge from one language to another is regarded as an advantage while children in monolingual contexts are only able to carry out the very same tasks only in one language.

Keywords: Cognitive development, early childhood, bilingual acquisition

INTRODUCTION

The popular belief in monolingual-dominated societies that learning a second language (L2) introduces threats to young children's cognitive command had been discussed for a long time in the literature. The current discussion begins with the theses of researchers and theoreticians who regard bilingual acquisition as a disadvantage to cognitive command in early childhood. Then, counter-arguments of scholars maintaining that bilingualism is an advantage are introduced. Issues of phonological awareness and literacy are discussed briefly followed by the problems with assessment of bilingual acquisition. Finally, challenges to the research paradigm have been discussed with an emphasis on the multidimensional nature of language acquisition.

Bilingual Acquisition as a Disadvantage

Researchers, theoreticians and professionals alike often viewed the simultaneous acquisition of two languages with apprehensiveness since it was thought to result in delayed, incomplete or even impaired language development and to exceed the capacity of the children to learn better. For instance, in one of the pioneering studies conducted by Streets (1976), the results showed that rural bilingual children in Wales were not only confused but scored relatively lower than monolingual children on IQ tests (Cook, 2002). Starting with the 1960s, the propensity has changed towards the positive advantages of L2 use. These studies denunciate earlier studies since they depended largely on L2 users who differed in many factors other than knowing a second language. The comparison realized in the earlier studies was unfair since they were based on the participants from advantaged-middle class children as the control group, and disadvantaged immigrant minorities as the experimental group. This

* Instructor, Anadolu University, Faculty of Education, Department of Computer Education and Instructional Technologies, yavuzakbulut@anadolu.edu.tr

critique is empirically retained via some recent studies such as González's (2001) work focusing on the external factors influencing language minority children's development. After critically reviewing the contemporary literature on guiding factors during bilingual acquisition other than the language itself, she concluded that socioeconomic status and sociocultural factors influenced the language development of minority children. Therefore, comparisons based merely on cognitive issues regardless of the differences in sociocultural factors would be insufficient to declare that development levels attained by bilingual children are interfered by exposure to a second language.

Bilingual Acquisition as an Advantage

Studies conducted after the 1960s generally controlled for the confounding variable of sociocultural differences. They found that L2 user children showed advantages over monolingual children. This noticeable change in the inclination of studies on bilingual children from assuming a devastating cognitive impairment to promising accelerated learning and enhanced ability is reviewed clearly by Hakuta (1986).

Lambert and Tucker (1972) explored the effect of a bilingual context on children's language and cognitive progress. Experimental group was exposed to monolingual French instruction at school and English in their neighborhood. Development of English and French control groups was also explored. Students in the control groups had kindergarten instruction in their native languages, while the experimental class had a monolingual French-speaking teacher who stressed the development of French language skills through story telling, vocabulary build-up, songs and group projects. This longitudinal study put forward that experimental group showed no symptoms of retardation or negative transfer which had been considered potential when exposure to more than one language was on stage. Moreover, on tests of English word knowledge, word discrimination and language usage, the experimental group fell above the 80th percentile on national norms. They did as well as the control groups. Finally, their reading ability, listening comprehension, and knowledge of concepts in English were at the same level as those of control groups. In this respect, one might ask whether the experimental group was able to accommodate to non-language subject-matters. The results revealed that the experimental group was as successful as the control groups in terms of non-language subject-matters such as mathematics, even though they had the instruction in the target language, but had the very same tests administered to control groups. They were able to demonstrate their arithmetic achievement in English although the instruction was in French. The reader might think that ample instruction helps the children to deal with the challenges of bilingual contexts. This inclination is refuted by Yelland, Pollard and Mercuri (1993), which will be discussed in the following pages.

One of the pioneering studies claiming a cognitive advantage for bilingual children is that of Ben-Zeev (1977). She tried to select participants from similar socio-economic backgrounds in order not to weaken the study by the confounding factor mentioned above, namely external factors, which have recently been explored by González (2001). The results indicated that in spite of being at a lower vocabulary level in the beginning, bilinguals showed more advanced processing of verbal material. They were more advantageous in comparison to monolingual children in terms of the readiness to impute and reorganize structures. However, the study required further work to determine whether the effects of bilingualism on cognition found in the study was situation-specific or could be generalized to other situations. The finding of Ben-Zeev's (1977) study that the bilingual children displayed greater word awareness than their monolingual counterparts has been replicated across some studies (Bialystok, 1986 &

1988). For instance, Bialystok (1986) compared the performances of matched grade I English monolingual and French-English bilingual children on tasks of sentence segmentation and word judgments. With the exception of sentences consisting entirely of monosyllabic words, the bilingual children consistently outperformed the monolingual children. The tasks involved the children in manipulating their knowledge of words rather than in demonstrating the extent of that knowledge. The first type of judgments involved children in noticing semantic similarity between pairs of words. The second type of judgments was rather interesting. Children were required to indicate the bigger word in pairs of two types (a) the bigger word referred to bigger objects (e.g., hippopotamus / skunk), and (b) bigger word referred to smaller objects (e.g., train / caterpillar). Bialystok (1986) argued that making correct judgments on the second type, which was considered as 'incongruent', requires relatively much control of the children's knowledge about words, because 'children must deliberately suspend focus on the large object and pay attention only to the size of the word' (1986, p.22). There was not a significant difference between the two groups in terms of word similarity judgment; however, the bilinguals were significantly better on judgments of word size than the monolinguals. They performed equally well both on the congruent and incongruent tasks in comparison to monolinguals who performed well on congruent items and badly on incongruent items.

Bialystok (1988) clarifies the ambiguous points of Ben-Zeev's (1977) study mentioned above. She showed that some of the advancements demonstrated by full bilinguals extend to partial bilinguals. Moreover, she found some differences among bilinguals in relation to their efficiency on some tasks. However, both groups of bilinguals outperformed the children of the monolingual control group supporting Ben-Zeev's (1977) finding and refuting the comment that the result of Ben-Zeev's (1977) study might be reversed in accordance with other unique situations.

Phonological awareness in bilingual children

A number of studies examined the issue of phonological awareness and development of literacy in bilingual children in terms of the norms that are set by monolingual children. Rubin and Turner (1989) compared English-speaking first grade students with a bilingual group in a somewhat narrow or limited way (Bialystok & Herman, 1999). The children had been attending French programs since kindergarten in which their entire school activities were conducted in French. They found an advantage for bilingual children in comparison to their monolingual peers in the English program. Bruck and Genesee (1993) tried to focus on other factors than the language itself that could have had an impact on the results in favor of the French immersion children (Bialystok & Herman, 1993). They found an advantage of the bilinguals in kindergarten; however, no advantage in grade I. Yelland et al. (1993) examined whether the reported benefits of childhood bilingualism extend to children whose experience with a second language is relatively more limited. They focused on the developing word awareness skills of two groups of preparatory and grade I children. The first group was strictly monolingual in English; the other which was named as 'marginal bilingual' group consisted of English monolinguals who were participating in Italian sessions just for an hour each week. After only six months of instruction in Italian, the marginal bilingual group showed significantly higher level of awareness in terms of vocabulary skills than the monolingual group. They inferred that bilingual context had great influence on word awareness, and this led to higher processing skills in reading acquisition in grade I. The contribution of the study is that it combines observations about the benefits of early bilingualism with studies in reading proficiency, and assumes a link between metalinguistic

awareness and reading preparedness. Moreover, the results of the study implied that the benefits to the development of metalinguistic awareness stemming from bilingualism were not dependent primarily on the acquisition of some critical degree of competence in the second language, which is a situation specific to children.¹ Rather, significant benefits were observed for children whose contact with a second language was restricted. This might have important implications for educational practice, that is, even one-hour practice per week might provide children with some cognitive and educational benefits.

Acquisition of literacy in bilingual children

Bialystok and Herman (1999) discuss areas of development that have been shown to be fundamental to the acquisition of literacy identifying specifically the effects that bilingualism has on children's early literacy development. They try to reconcile some of the findings in the literature to see whether or not bilingual children differ from their monolingual peers. They found that in all areas of development, bilingual children were progressing at a different rate and in a different manner in comparison to monolingual children. However, the differences between the groups were multidimensional, that is, some differences might be to the advantage of bilingual children whilst others might seem to the disadvantage of them, both of which require further scrutiny.

The norm is not monolingualism

Further counter-evidence for the claim that bilingual children are disadvantageous in terms of language development comes from the studies of Meisel (1997) and Genesee (2002). Meisel (1997) explains the differences in bilingual children's language via referring to the realization of surface structures rather than impairment in the domain of grammatical structures. He claims that in order to talk about impairment in the grammatical constraints of the language in bilingual children, we should first see that children have access to certain properties of grammars, most crucially the functional categories.² Genesee (2002) reviews evidence from studies of children in the early stages of acquiring a second language particularly focusing on a distinctive and common behavior among bilingual children, namely code-mixing. After viewing the issue from cognitive, linguistic and communicative perspectives, he maintains that being exposed to two languages simultaneously does not put children at risk of incomplete language development. In fact, bilingual children demonstrate different language behaviors in comparison to monolingual children; however, these should not be considered as incompetence by assuming monolingualism as the 'norm'. The trend in the world is toward bilingualism, which is likely to make it as the 'norm'. Therefore, getting insights about this new norm via scrutiny is better than comparing it with the debatable norm, monolingualism.

Problems with assessment

Oller and Pearson (2002) criticize the way bilingual children are considered as deficient in cognitive skills in the literature. They claimed that studies maintaining to imply deficiencies tried to correlate between bilingual status and low scores on academic or intelligence tests. Their position seems persuasive, that is, it is not tenable to imply that bilingual children are

¹ To see the outcomes of bilingualism and realization of BICS and CALP on adolescents, see also Wakabayashi (2002).

² Studies on the realization of surface morphology in bilingualism goes parallel to second language acquisition studies on the very same issue (Haznedar, 2001&2003; Ionin & Wexler, 2002; Prévost & White, 2000)

handicapped by the extra cognitive burden imposed by learning multiple languages merely via taking academic tests into consideration whose reliability might easily be questioned. Moreover, it has been argued that time on task in learning is a primary variable in achievement level. It is not reasonable to expose monolinguals and bilinguals to the tests favoring monolinguals and requiring them to complete the tasks at the same time. Oller and Pearson (2002) further pronounce that “dilution of time on task for each language in bilingual education causes bilingual students to be overburdened and consequently to be at risk for failure” (2002, p.6). Their work provides a list of sources advocating that bilingual children enjoy significant and consistent advantages over monolinguals on several cognitive tasks.

Challenges to the Research Paradigm

Before suggesting implications regarding above studies, it should be borne in mind that there are problems about the experimental paradigm of research on the effect of bilingualism on children’s cognitive development in all of them. The basic problem is that bilingualism has been treated as a single independent variable in research designs and dependent variables such as cognitive flexibility, metalinguistic development, or acquisition of literacy are considered to be merely bound to this independent variable. In this respect, speaking more than one language is considered to be an objective, identifiable and binary notion. Nevertheless, the credibility of any research design largely depends on the reliability and validity of the independent variable (Bialystok & Herman, 1999). Bilingualism is not a discrete issue. Being male or female, being young or adult, or attending school or not are binary, valid and reliable independent variables. However, being bilingual or not cannot be classified in such an easy way. To put it differently, this experimental paradigm prevents researchers from reaching conclusive remarks about multidimensional dependent variables, since bilingualism itself is multidimensional. Therefore, in order to understand the influences of bilingualism, it is important to take the unique features of participants, tasks and the relationships of those tasks to the constructs into consideration.

Bialystok (2002) lists the factors that might effect the characteristics of bilingual acquisition including the education level and the language of parents, particularly those of mothers (Lyon, 1996), the literacy environment that the child is exposed to, the extent of the child’s proficiency in the first language, the purpose of learning the second language and the degree of community support for the target language. She claims that within the multiplicity of different variables influencing children’s performance, it is not possible to isolate the role of bilingualism on children’s performance and explore its contribution or harm to performance independently. For example, Bialystok, McBride-Chang and Luk (2005) compared 204 five- and six-year-olds who were monolingual English, bilingual English-Chinese, or Chinese-speaking children who are beginning to learn English. The comparison was on the basis of participants’ phonological awareness and word decoding tasks in English and Chinese. Analyses revealed that there was no overall influence of bilingualism on learning to read. As mentioned before, performance depended on several other factors namely structure of the language, proficiency in that language, and instructional experiences with it. Thus, the findings suggested the importance of evaluating the features of the languages along with the instructional context. Such results implying the multidimensional nature of bilingualism should prevent us from reaching conclusive remarks on the mere effects of bilingualism on cognition of bilingual children.

In order to deal with the given methodological problems, Grosjean (1998) identifies methodological and conceptual issues in studying bilinguals, first explaining the issues,

namely bilingual participants, language mode, stimuli, tasks, and the models of bilingual processing, then discussing the problems caused by these issues and finally proposing tentative solutions to those problems. He presumes that dealing with these issues will take time, effort and inventiveness; however, in order to create clearer and less ambiguous outcomes, it is important to take into account the full complexity of bilingualism. The recommendations provided by Grosjean (1998) are also supported by Bialystok and Herman (1999).

CONCLUSION

Despite given methodological issues in literature on bilingualism, it is colorable to maintain that the course of development in bilinguals and monolinguals might be different because of the functions or advantages of specific experiences in each language. While children in a bilingual context may be able to transfer their decontextualized skills and knowledge from one language to another, children in monolingual contexts are only able to carry out the very same tasks only in one language. This transfer between languages implies the possibility for a bilingual advantage in development (Bialystok & Herman, 1999). The extent of this bilingual advantage might also depend on the degree of relationship between the two languages (Bialystok, Luk, & Kwan, 2005).

The extent to which bilingualism influence cognitive development in early childhood has been discussed so far, which shows that language and cognition are interdependent rather than independent issues. As Bialystok (2002) claims, language and cognition proceed through similar mechanisms in response to similar experiences, and with mutual influence on each other. Therefore, although the methodological concerns and controversial findings from the mainstream present challenges to further research, it can be suggested that teachers dealing with bilingual children provide them with multiple opportunities to use both languages (Rubin & Carlan, 2005), which will help children view their bilingualism as a strength to improve their language proficiency and cognitive skills simultaneously.

Bilingual children constitute a very heterogeneous group to study on in terms of the ways children learn multiple languages (i.e. simultaneous acquisition vs. successive acquisition) along with the degree of mastering the languages. Regardless of the pattern of bilingualism, it is important to keep in mind that researchers interested in the research paradigm mentioned in the current review should be highly proficient in both the first language and second language(s) along with a grounded theoretical background on the cognitive aspects of the early childhood development. In addition, it can be plausible to prepare a comprehensive language background history of children for each language as suggested by Fredman and Centeno (2006). Finally, as suggested by Fredman and Centeno (2006), research findings might differ in accordance with the language pair acquired by children. In this respect, there needs to be more research on the acquisition of Turkish where it is one of multiple languages simultaneously or spontaneously acquired by children.

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Erken çocuklukta çift dilliliğin kazanımı ve bilişsel gelişim: Araştırma paradigmasındaki problemler

Yavuz Akbulut*

Öz. İkinci dil kazanımının bilişsel performansa olumsuz etik ettiğine yönelik inançlar savunucuların ve karşı çıkanların fikirlerinden yararlanılarak sorgulanmıştır. Kazanılan farklı dillerde yaşanan farklı deneyimlerin getirdiği avantajlar, ayrıca dillerin farklı işlevleri nedeni ile tek dilli ve çift dilli çocuklarda gelişimin farklı olduğunu öne sürmek kabul edilebilir görünmektedir. Çift dilliliğin bilişsel gelişimi etkilediğini savunan çalışmalar dil ve biliş kavramlarının birbirlerinden bağımsız değil, birbirleri ile ilişkili olduğu sonucuna yönelmektedir. Ancak çift dilliliğin tek başına bir bağımsız değişken olarak algılanması ve çok yönlü bir olgu oluşunun göz ardı edilmesi, araştırma paradigmasında hala rastlanan bir problemdir. Bu nedenle çift dilliliğin etkileri üzerine odaklanabilmek için, çift dilli çocukların eşsiz olan özelliklerinin dikkate alınması, gerçekleştirilen görevlerin özelliklerinin incelenmesi ve bu görevlerle incelenen yapılar arasındaki ilişkilerin açığa çıkarılması gerekmektedir. Son olarak, çift dilli çocukların bir dili öğrenme ortamında elde ettikleri deneyimleri başka bir dil öğrenme ortamına aktarma yetileri bir avantaj olarak ele alınmış, tek dilli çocukların aynı görevleri sadece tek bir dil ortamında yerine getirmeleri nedeniyle daha dezavantajlı olabilecekleri tartışılmıştır.

Anahtar Sözcükler: Bilişsel gelişim, erken çocukluk, çift dilliliğin kazanımı

* Öğretim Görevlisi, Anadolu Üniversitesi, yavuzakbulut@anadolu.edu.tr