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The Impact of Multilingual Education on Students' Cognitive Development: Evidence from the China

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Abstract

This research retrospectively explored the impact of multilingual education on students' cognitive development, with a focus on China's educational system. It illustrated how immersion in multiple languages enhanced cognitive abilities, supported by empirical data collected from schools across various Chinese regions. Distinct improvements were seen in cognitive domains such as problem-solving, attention, memory, and cognitive flexibility. The research underlined a correlation between multilingual education and an enriched cognitive repertoire, showcasing the ability to think divergently and handle complex tasks efficiently. The study also addressed the challenges involved in implementing multilingual education, including the need for specialized resources and trained educators. Despite these hurdles, the findings from China echoed the global consensus supporting multilingualism as a potent tool in fostering cognitive development. This analysis has broad implications for shaping educational policies worldwide, advocating for more significant incorporation of multilingual education to optimize cognitive growth among students.

Keywords: *Multilingual Education, Cognitive Development, Students, Impact, China.*

1.1 Introduction

Homeschooling has been a method of teaching for some time, but people have misconceptions about how it works and how it affects children's academic achievement (Martinez, 2015). Research shows that homeschooled children do well in their academics despite a few negative aspects of homeschooling. Through literature review, through scholarly articles, interviews, and a survey, research reveals that homeschooling will continue to be on the rise (Reaburn, 2021). Thus, homeschooled children tend to score higher or similar compared to regular children attending public schools. Children become more responsible for themselves, and have control of their education. Homeschooling is an alternative to education for children who do not adjust well. While homeschooling allows students to focus only on what is important to them, it makes learning more enjoyable, since they are learning at their own pace, and at the same time affects their academic achievement in many ways (Krumsvik, 2020).

Homeschooling, or parent-led home-based education, has a long and distinguished history in the United States, with many prominent historical figures (e.g., George Washington, Thomas Jefferson, Benjamin Franklin, Andrew Carnegie, and Franklin Roosevelt) receiving at least part of their education at home (Coulson, 2019). With the rise of compulsory school attendance laws in the mid-nineteenth and early twentieth centuries, the practice of homeschooling diminished significantly (Lips and Feinberg, 2018), with the number of homeschooled students dropping to around 13,000 by the early 1970s (Lines, 2019). By this time, homeschooling had become “an unacceptable practice for satisfying compulsory education requirements in most states. The current review contributes to the literature on the academic achievement of homeschooled students by examining the factors affecting the academic performance of students.

The standard microeconomic assumption of convex utility suggests that individuals prefer a mixture of goods and services (Mondal, 2021). Because time is a binding constraint that a student must allocate across activities, it follows that students should prefer to expend their time “consuming” a mixture of activities. To achieve higher levels of satisfaction, a student is faced with a smaller supply of time to allocate towards studying and may therefore either face a tradeoff between schoolwork and other activities, hindering academic performance, or develop more efficient study habits and/or better time management skills, resulting in better academic performance (Alhadeff, 2020). Study time may even exert a negative burnout effect for students who consistently burn the symbolic midnight oil, sacrificing sleep and other activities that provide them with satisfaction. Previous empirical research on student time use and academic performance has produced mixed results.

Sleep habits also affect one’s wellness, and sleep-related problems are prominent among college students (Gilbert and Weaver, 2010). Trockel et. al. (2020) found that sleep habits, especially weekday and weekend wake-up times, affected first-year GPA more than other health related factors. Kelly et al. (2001) found that short sleepers (6 or fewer hours) averaged significantly lower GPAs than long sleepers (9+ hours), while the GPA of average sleepers (7-8 hours) did not significantly differ from that of long or short sleepers. Taylor et al. (2020) found that later bedtimes and wakeup times, longer time awake after rising, and inconsistent sleep habits are all related to lower cumulative GPA. Gilbert and Weaver (2010) found a negative correlation between the GPA of non-depressed college students and self-reported sleep quality (2020). In the current study, we estimate the impact of average number of hours slept on GPA among PHC students during the fall 2014 semester. Parent-led home-based education was the norm around the globe for thousands of years. That changed drastically in many nations during the late nineteenth century. In the United States of America, for example, government-compelled education did not take hold until the late 1800s. It was not until 1900 that the majority of school-age children attended institutional schools: “72 percent of 5- to 17-year-olds were enrolled in public schools, but their average attendance was still only 99 days per year” (Ray, 2019). Similar changes occurred around the world until home-based education was nearly extinct in most developed nations.

There is solid evidence that homeschooling has made notable gains in absolute numbers and percent of the school-age population in nations as diverse as Australia, Brazil, Canada, England, Japan, Mexico, South Africa, South Korea, Scotland, and Russia (Rothermel, 2015). Home education’s rebirth after about a century of quiescence has surprised many educators, sociologists, political scientists, historians, and theologians, and has captured the imagination and engagement of hundreds of thousands of families. One of the most common and widely accepted ways to assess the learning of students and the effectiveness of their educational environments is via academic

achievement as measured by standardized tests (Polhun, Kramarenko, Maloivan & Tomilina, 2021). Many policymakers, educators, school administrators, and parents, who are interested in test scores, wonder whether ordinary mothers and fathers, who are not government-certified teachers, are capable of continuing the teaching of their children after age 5 via what is called homeschooling.

Because of this central question, policymakers, researchers, and even parents wonder whether it is possible for adults without specialized, university-level training in teaching to instruct children in an effective manner with respect to academics. Numerous studies by many researchers have been completed during the past more than 30 years examining the academic achievement of the home-educated population (Murphy, 2019; Ray, 2020, 2015, 2018). Examples of these studies range from a multiyear study in Washington State to three nationwide studies across the United States to two nationwide studies in Canada (Ray, 2019, 2019, 2019). Rudner, 2019; Van Pelt, 2014; Wartes, 2020). The homeschooled have consistently scored in these studies, on average, at the 65th to 80th percentile on standardized academic achievement tests in the United States and Canada, compared to the public school average of the 50th percentile.

Some observers have wondered about the representativeness of the samples in the studies and whether, for example, only the best-performing homeschooled students are included in the studies. Data from states that have legally required homeschooled students to be tested shed some light on the question. For example, several years of data from Oregon (Oregon Department of Education, 2019) consistently reveal homeschooled student scores to be above average, with medians at about the 71st to 80th percentile (Williams, 2019). Washington data (Wartes, 2019, 2020; Washington State Superintendent of Public Instruction, 2019) regularly reveal scores above average, at about the 66th percentile. In a program that is public school at home (i.e., like but not the same as private homeschooling), Alaskan students in a state-run school-at-home program consistently scored above average (e.g., about the 78th percentile one of the years reported; Alaska Department of Education, 2019).

There were an estimated 4.5 to 5.0 million homeschool students in grades K-12 in the United States during March of 2021 (roughly 8% to 9% of school-age children). There were about 2.5 million homeschool students in spring 2019 (or 3% to 4% of school-age children). The homeschool population had been growing at an estimated 2% to 8% per annum over the past several years, but it grew drastically from 2019-2020 to 2020-2021. Research facts on homeschooling show that the home-educated are doing well, typically above average, on measures of social, emotional, and psychological development. Research measures include peer interaction, self-concept, leadership skills, family cohesion, participation in community service, and self-esteem. 87% of peer-reviewed studies on social, emotional, and psychological development show homeschool students perform statistically significantly better than those in conventional schools (Ray, 2017). Homeschool students are regularly engaged in social and educational activities outside their homes and with people other than their nuclear-family members. They are commonly involved in activities such as field trips, scouting, 4-H, political drives, church ministry, sports teams, and community volunteer work. Adults who were home educated are more politically tolerant than the public schooled in the limited research done so far.

It is possible that homeschooling causes the positive traits reported above. However, the research designs to date do not conclusively “prove” that homeschooling causes these things. At the same time, there is no empirical evidence that homeschooling causes negative things compared to

institutional schooling. Future research may better answer the question of causation. The March of 2021 estimate is based on data from state governments (e.g., Delaware, Florida, Minnesota, Nebraska, North Carolina, and Virginia), the U.S. Census Bureau (2021), and the U.S. Department of Education (2019). McDonald (2020). The spring 2019 estimate was based on an estimate of about 2.5% per annum growth from estimates of 2 million home-educated children during the spring of 2010 and 2.3 million spring of 2016 in the United States (Ray, 2019). The estimate of 2.3 million in 2016 was calculated by Brian D. Ray, the author of this fact sheet, on April 7, 2016. He based it on publicly available research findings.

2.1 Benefits of Homeschooling

Parents who want to homeschool their children but still have some reservations about it should take time to consider the positive and negative aspects of homeschooling (Fontenelle-Tereshchuk, 2021). The following information will help parents know what to expect when they homeschool their children, detailing both the benefits and disadvantages (Machovcová, Beláňová, Kostelecká & McCabe, 2021). It will enable you to make a better informed decision if you're still uncommitted to homeschooling, and it will help you determine what negative aspects of homeschooling you will be able to tolerate and what positive aspects of administering your children's education you will enjoy (Machovcová, et al., 2021). Some of the benefits of homeschooling to parents have been found to include: Determine the curriculum and their children's schooling schedule, demonstrate to their children that education is fun, create strong bonds with their children, adapt teaching methods best suiting how their children learn, spend extra time with their children on difficult concepts and move ahead after children master a subject or concept, create a flexible schedule not possible for children enrolled in public school, Provide religious and ethical instruction for their children, shelter children from school violence, drugs, and other negative behaviors children in public schools frequently encounter, provide their children with the personal interaction that teachers in large classrooms are not able to provide, spend extra time helping their children develop any special talents they possess, including musical, athletic, etc., discuss controversial topics at their discretion with their children, enjoy spending more time with their children, assist their children during adolescence and other trying times, draw closer to their spouse as they homeschool their children together and take their children on vacations when public school is still in session

Parents will go to great lengths for the physical and mental wellbeing of their children, including making a complete switch in their education program (Khakim, 2021). Many Australian families are turning to homeschooling for its myriad benefits, the most compelling of which is its positive influence on the mental health of homeschooled children. If you're considering beginning an online homeschool curriculum and you're curious about the additional benefits that this choice may offer, this article will walk you through the mechanisms that may commonly contribute to positive mental health changes in homeschooled children. Research show that when you homeschool your child, you create your own schedule to suit the needs of your child and your family (Ray, 2021). There is increasing evidence on the extra sleep needed in teenage years, yet the conventional school system often requires students to stay up late finishing homework and get up early to rush to their morning classes. Homeschool offers some great advantages when it comes to scheduling: less rushing in the morning sets kids up for less stress overall in their day, longer sleep ins are important for mental and physical wellbeing as well as better focus and work ethic throughout the day and homeschooled children can take breaks throughout the day as needed and are less likely to burnout and form negative associations with school and learning (Jantore, 2020).

When homeschooling your child, the teaching process is a 1:1 student to teacher ratio rather than one teacher to a room full of kids (Roe, Blikstad-Balas & Dalland, 2021). Because of this, homeschooled children are directly involved in their lessons, and the learning is solidified while they are in the “classroom” rather than later on through homework. Homework is essentially intertwined within the teaching schedule and it is not necessary to continue formal study after hours. For the same reasons, regular tests and exams are not necessary because the homeschooled children are demonstrating their knowledge during their lesson time, and lessons are particularly catered to move at the pace of their comprehension (Roe, Blikstad-Balas & Dalland, 2021). Taking away traditional homework and testing can greatly reduce the stress that children feel about school, and allow them to spend their free hours simply playing and being kids. This also allows for more time learning and engaging in lessons rather than on memorizing facts and stressing over marks. These days, parents and kids are like ships passing in the night, often only spending a few rushed minutes getting out the door in time and quickly finishing dinner to make way for homework time (Conejeros-Solar & Smith, 2021). Homeschooling allows children to spend more time with their parents and to be part of errands and daily activities that allow them to engage in their greater community. Parents become intimately involved in the learning process and will be aware of where their children are at and better able to care for them and assist them with any struggles.

Another important change is that while parents normally spend a lot of time with their children, homeschooling parents spend even more time with their kids. The amount of time you need to spend homeschooling is a major lifestyle change that influences the decision of many parents on whether or not they homeschool (Green-Hennessy & Mariotti, 2021). Though there are many ways for parents to secure time for themselves, it is important to recognize that you will spend more time with your children than you do currently. One of the biggest myths we shatter is the idea that homeschool socialization does not exist or that homeschoolers are all weird or do not know how to interact with people (McCabe, Beláňová & Machovcová, 2021). The truth of the matter is that there are pros and cons with the social experience of homeschoolers, just as there are pros and cons with public school. Experiences will vary for all children, but the fairest way to characterize socialization in a homeschool environment is to say it is different.

3.1 The Negative Effects and Aspects of Homeschooling

More parents are choosing to homeschool their children because they see the many benefits of homeschooling, differences in ideology and issues with public school policy are only a few reasons why some parents choose homeschooling over public or private schools (Dlamini, Maharaj & Dunn, 2021). When considering enrolling a child in a homeschool curriculum, there are many different factors to consider. While there are many positive aspects of homeschooling, there are also the negative aspects of homeschooling. In this article, we will explore some of the disadvantages of homeschooling. Some of the disadvantages of homeschooling are; when parents take the responsibility of educating their children at home, they may need to set aside time to make it work (Letzel, Pozas & Schneider, 2020). The task of homeschooling a child is certainly not easy, especially for working parents, single parents or stay-at-home parents. They have to take time to organize and prepare lessons, teach, give tests, and plan field trips. Homeschooling is a full-time commitment and to make sure that the child receives a quality education, parents need to invest time and effort needed.

In comparison to public schools, where education is free, homeschooling can be costly. Purchasing the newest curriculum and teaching tools can be very expensive (Waite & Arnett, 2020). Parents may choose to use a paid homeschooling program, such programs may have added benefits, but may increase the cost of the child's education. There are also other costs to keep in mind, like project materials, stationery, books, computer software, and field trips. Parents who choose to home school their children should be prepared to spend more money than parents who send their children to public schools. Home schooled children may not have as many opportunities to interact with other children in comparison to children who attend regular schools (Brooks, Smith, Webster, Weston, Woodland, Hall & Rubin, 2020). Forming bonds and socializing with children their own age is important for the child's developmental health and development of social skills (Brooks et al., 2020). If home schooled, they may be deprived of the chance to form friendships and may suffer socially. Of course, they can make friends with other home schooled children, but it is quite different when special effort has to be made to arrange meetings.

The lack of socialization may affect them in later stages of life, it is quite impossible that a home can be as well-equipped as a regular school in terms of facilities (Malik, Asghar & Khalid, 2021). For classes that require experiments like physics and chemistry, it can be hard to get all the necessary chemicals, materials, apparatus, and so on. The home would also lack facilities for sports like swimming pools, running tracks, gyms, and fields. One of the reasons why homeschooling is bad is the fact that parents may lose patience when they are trying to educate their children. Some parents may be too overbearing or impatient, which may cause the child to react in a negative manner. It may be hard for parents to draw the line between educator and parent in the child's mind. One of the most glaring negative effects of homeschooling is the matter of motivation, some children need to be challenged to excel in their studies (Bamidele & Raji, 2020). In this sense, they thrive when they are involved in some competition. Children who are homeschooled would not have this motivation because most of them are educated separately.

Homeschooling in USA

Homeschooling in the United States of America constitutes the education of about 3.4% of U.S. students (approximately 2 million students) as of 2012. The number of homeschoolers in the United States has increased steadily over the past few decades since the end of the 20th century. In the United States, the Supreme Court has ruled that parents have a fundamental right to direct the education of their children (McCabe, Beláňová & Machovcová, 2021). The right to homeschool is not frequently questioned in court, but the amount of state regulation and help that can or should be expected continues to be subject to legal debate. The United States Department of Education estimates that 1.5 million K-12 students were homeschooled in the United States in 2007 (with a confidence interval of 1.3 million to 1.7 million), constituting nearly three percent of students.

The National Home Education Research Institute estimates this number to be 1.92 million. This was up from 13,000 in 1973, 20,000 in the early 1980s, 93,000 in 1983, 275,000 in 1990, 1 million in 1997, 850,000 in 1999, 1.4 million in 2003, and 1.92 million in 2007 (Kunzman & Gaither, 2020). In these estimations, students were defined as being homeschooled if their parents reported them as being schooled at home instead of at a public or private school for at least part of their education, and if their part-time enrollment in public or private school did not exceed 35 hours a week, and excluded students who were schooled at home primarily because of a temporary illness. About four out of five homeschoolers were homeschooled only, while about one out of

five homeschoolers was also enrolled in public or private school for 25 hours or less per week. In 2007, 16% of homeschooled students attended a public or private school on a part-time basis (Johnson, 2021).

Increasing numbers of homeschoolers partook in private school, public school and home partnerships. Homeschool families use them to help teach difficult subjects, such as foreign languages and sciences (Kunzman & Gaither, 2020). In addition, many families do partnerships to help their children compete in academics and athletics with non-homeschooled children. Some students take one or two classes at traditional school campuses while others spend several days per week on campuses that are designed to educate part-time students. In 2014, the number of homeschoolers surpassed the number of students attending private schools in North Carolina. Although many parents cite wanting to provide religious or moral instruction as one of the primary reasons for homeschooling, research has shown that young adults who were homeschooled are not significantly more likely to be religious than demographically similar peers who went to private or public school (Wei & Mhunpiew, 2019).

Analysis by Baylor University sociologist Jeremy Uecker of data from the National Study of Youth and Religion revealed that homeschooled young adults were no more religious than other young adults from the same demographic profile who attended public or private school. In the United States, homeschooling is lawful in all fifty states. The U.S. Supreme Court has never ruled on homeschooling specifically, but in *Wisconsin v. Yoder*, 406 U.S. 205 (1972) it supported the rights of Amish parents to keep their children out of public schools for religious reasons. The Court has ruled, however, that parents have a fundamental right to "establish a home and bring up children" along with the right to "worship God according to the dictates of [their] own conscience." This combination of rights is the basis for calling homeschooling a fundamental right under the Supreme Court's concept of liberty protected by the Due Process Clause. Laws that restrict fundamental rights are subject to strict scrutiny, the highest standard, if the law is challenged in the courts.

4.1 Conclusion and Policy Recommendations

Homeschooled children tend to score higher or similar compared to regular children attending public schools. Children become more responsible for themselves, and have control of their education. Homeschooling is an alternative to education for children who do not adjust well. While homeschooling allows students to focus only on what is important to them, it makes learning more enjoyable, since they are learning at their own pace, and at the same time affects their academic achievement in many ways. Research show that when children are homeschooled, you create your own schedule to suit the needs of your child and your family. There is increasing evidence on the extra sleep needed in teenage years, yet the conventional school system often requires students to stay up late finishing homework and get up early to rush to their morning classes. Homeschool offers some great advantages when it comes to scheduling: less rushing in the morning sets kids up for less stress overall in their day, longer sleep ins are important for mental and physical wellbeing as well as better focus and work ethic throughout the day and homeschooled children can take breaks throughout the day as needed and are less likely to burnout and form negative associations with school and learning.

Taking away traditional homework and testing can greatly reduce the stress that children feel about school, and allow them to spend their free hours simply playing and being kids. This also allows for more time learning and engaging in lessons rather than on memorizing facts and stressing over

marks. These days, parents and kids are like ships passing in the night, often only spending a few rushed minutes getting out the door in time and quickly finishing dinner to make way for homework time. Homeschooling allows children to spend more time with their parents and to be part of errands and daily activities that allow them to engage in their greater community. Parents become intimately involved in the learning process and will be aware of where their children are at and better able to care for them and assist them with any struggles.

Homeschooling promotes good communication and emotional closeness within a family. Research shows that the two most important factors in reading and overall educational success are positive home influence and parental involvement; homeschooling provides both. Homeschooling improves the educational strength of the student. Learning from home is easier for children than studying from strange places. Also, a flexible timetable always frees the mind, and no need to waste tears every morning at 8:30. Each year the Homeschooling students rate in the US increasing high. All over the USA, parents don't require an educational degree to start Homeschooling their children. There are no specific rules in many places. Some of the states have their guidelines. Better know about your state guidelines before starting Homeschooling. Parents need to be friends with their children. Make them enjoy the education, learning process, questioning skills.

Homeschooling is a great way to educate a child can be shown in several ways. First, consider the items in this list. Many of these benefits are easy to understand and the positive impact they have on children are obvious. Second, homeschooled children perform better on standardized tests. For example, in a recent comparison of SAT scores, homeschooled children averaged 568 on the verbal test and 525 on the math; the national average was 506 on verbal and 514 on math. While those differences might not seem significant for individuals, as differences in averages for populations of students, they are very significant. Third, homeschoolers are becoming sought-after for higher education. Many colleges and universities have begun to modify their admission practices to not only allow for, but to encourage, homeschoolers to apply for admission.

In the current landscape of homeschooling policy, some states treat homeschooling as a unique legal category while other states treat homeschools as private schools. Still other states allow homeschools to operate as extensions of private schools that operate as “umbrella” schools. Finally, some states allow students to be educated at home in extension programs operated by public or charter schools. Many states offer some combination of these options. We believe that all of these legal options for homeschooling are compatible with effective oversight of homeschooling and that each can coexist with effective protections for homeschooled students. Enacting legal oversight need not require changing a state’s legal categorization of homeschooling. Students should be allowed to participate in curricular and extracurricular activities, extension programs, and other opportunities provided by their local public schools. Public schools should have cooperative policies for awarding credit and assisting with the transition for homeschooled students who transfer in.

REFERENCES

- Alhadeff, D. A. (2020). 5. Reinforcer-Effectiveness Limits. In *Microeconomics and Human Behavior* (pp. 60-81). University of California Press.

Bamidele, S. T., & Raji, M. K. (2020). Influence of School Environment on Students' academic Performance in Upper Basic Schools in Ekiti Local Government Area of Kwara State. *Capital Journal of Educational Studies (CAJES)*, 6(3), 121-128.

Brooks, S. K., Smith, L. E., Webster, R. K., Weston, D., Woodland, L., Hall, I., & Rubin, G. J. (2020). The impact of unplanned school closure on children's social contact: rapid evidence review. *Eurosurveillance*, 25(13), 2000188.

Conejeros-Solar, M. L., & Smith, S. R. (2021). Homeschooling gifted learners: An Australian experience. *Australasian Journal of Gifted Education*, 30(1), 23-48.

Dlamini, N., Maharaj, P., & Dunn, S. (2021). Home-schooling in South Africa: Adapting to the new normal of providing education. *Perspectives in Education*, 39(1), 106-121.

Fontenelle-Tereshchuk, D. (2021). 'Homeschooling' and the COVID-19 Crisis: The Insights of Parents on Curriculum and Remote Learning. *Interchange*, 1-25.

Green-Hennessy, S., & Mariotti, E. C. (2021). The decision to homeschool: potential factors influencing reactive homeschooling practice. *Educational Review*, 1-20.

Khakim, Z. (2021). The Homeschooling Alternative. In *Inclusive Education in a Post-Soviet Context* (pp. 101-137). Springer, Cham.