



Gifted Education

Executive Summary

Gifted education is offered by some districts and schools as a way to provide further enrichment to students with high academic or creative potential. The structure, delivery, and funding of gifted programs vary substantially, as do rates of school district implementation of gifted education programs. [Senate Bill 806](#) and [House Bill 2366](#) would require all school districts in Missouri with 3% or more of their students identified as gifted to establish a state-approved gifted program. Larger schools (>350 students) would be required to have teachers certified in gifted education if they provide gifted education services, while smaller schools would have a six-hour training requirement. Statewide in Missouri, 4.3% of students are identified as gifted, compared to 6.7% nationwide.

Highlights

- Studies of individual gifted education programs have found that they can lead to increased academic outcomes. However, more general, broad-scale analyses of gifted programs have found mixed results.
- Certain demographic groups are substantially under- or over-represented in gifted education programs based on race, socioeconomic status, and location.
 - Districts that do not have gifted education programs are largely located in rural areas of Missouri.
- Universal screenings have been shown to be one way to narrow the gaps in access to gifted education.

Limitations

- Because of the substantial variation between gifted education programs, it is difficult to make generalized statements about the effectiveness of these programs.
- The lack of standardized student outcome measures could make it difficult to assess the effectiveness of gifted programs and make changes where needed.

Research Background

Does Gifted Education Lead to Better Outcomes?

Connecting gifted education to better outcomes for students can be difficult because there is substantial variation in the structure, delivery, and funding of gifted education programs.¹ To this point, there are at least 20 different types of gifted education interventions used in the U.S. including pulling students out of class temporarily, separate gifted classes, separate gifted schools, subject-specific accelerations, after-school enrichment programs, and mentoring.² Furthermore, the content of these interventions can vary, as can the grade levels when these

interventions occur. Additionally, the value of gifted education instruction could potentially vary by instructor training. Finally, the measuring of student outcomes in gifted programs tends to be largely informal in elementary and middle school settings. In a national survey of school district personnel, it was found that 40.1% of elementary and 64% of middle school gifted programs used informal outcome measures such as teacher-developed checklists or questionnaires.³ The lack of standardized student outcome measures could make it difficult to assess the effectiveness of gifted programs and make changes where needed.

Studies of individual gifted education programs have found that they can lead to increased academic outcomes⁴ though that is not always the case.⁵ One study found small increases in reading and math achievement associated with gifted education and no associations between gifted education and non-academic metrics, such as school attendance rates and reported engagement.⁶ However, higher academic achievement was not found to be evenly distributed across all groups. Black and low-income students had smaller increases and students at smaller schools, with <750 students, tended to have no increases in academic achievement associated with gifted education programs. More general, broad-scale analyses of gifted programs have found mixed results in the causal effects of these programs.⁶ One limitation of this analysis is that the results are averaged across different gifted programs. Because of differences between gifted programs and how they are implemented, it is likely that the effectiveness of gifted education programs varies substantially from school to school and program to program. One meta-analysis did find that grouping gifted students and allowing accelerations (taking higher level classes or skipping a grade) provides significant improvements for gifted students.⁷

Demographic Group	Asian	Black	Hispanic	Multi-race	White	Free/Reduced Price Lunch (FRL)
% of K-12 Students	2.1%	15.5%	7.0%	4.6%	70.1%	49.9%
% Gifted	7.0%	7.8%	4.9%	5.5%	92.6%	28.3%
Under/Over-Representation in Gifted Programs	+234.7%	-49.7%	-29.7%	+20.2%	+32.0%	-43.4%

Table 1. Demographic composition of gifted programs. This table lists the composition of the Missouri K-12 overall student population and gifted student population by race. The bottom row indicates percentage that different racial/ethnic groups in Missouri are under- or over-represented in gifted programs relative to that group’s proportion of K-12 students overall. Created using data from DESE’s 2020 State Gifted Education Report.

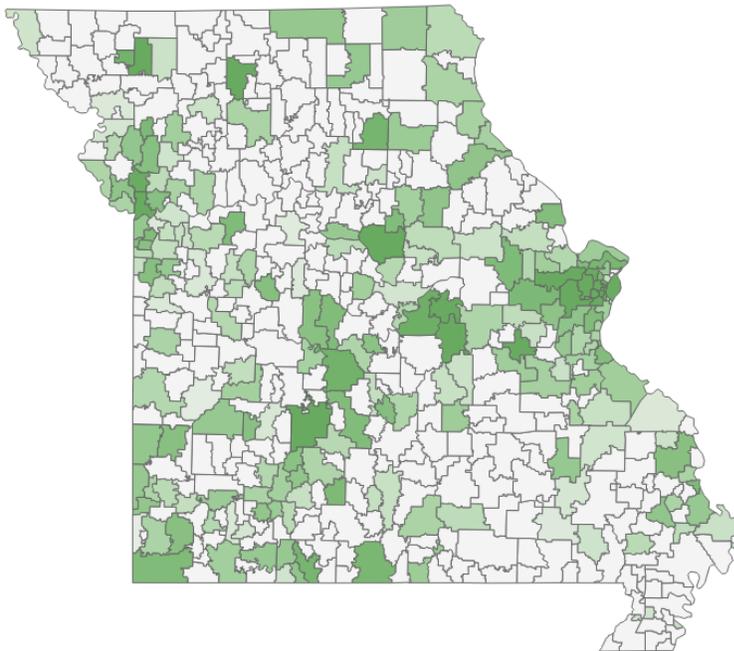
Equity in Gifted Education

Certain demographic groups are under-represented in gifted education in Missouri (**Table 1**). For example, Black students in Missouri make up 15.5% of the student population but only 7.8%

of the population in gifted programs, meaning that this population is under-represented by about half (-49.7%). Students that are Black and/or of low socioeconomic status tend to be especially under-represented. This follows national trends.⁴ Additionally, there can be barriers to access for gifted students for English Language Learners (ELLs) and for students with disabilities such as dyslexia, ADHD, etc.⁸ Students in rural areas tend to also have challenges accessing gifted programs.⁹ The Missouri Department of Elementary and Secondary Education (DESE) produced a [report](#) with guidance for school districts to begin addressing some of the inequities observed in gifted education in Missouri.¹⁰

Identification of Gifted Students

Selection methods for gifted programs vary substantially and different factors may be considered including test scores, teacher recommendations, and socioeconomic status. Biases in the identification of gifted students may explain in part why certain groups of students tend to be under-represented. For example, in one study conducted in the Midwest, teachers were provided with student descriptions that included race. Teachers were then asked to recommend students for gifted education based on these profiles. Profiles of Black students tended to be identified at lower rates as gifted than students with no race specified even with otherwise similar descriptions.¹¹ In another study, students with names associated with low socioeconomic status were less likely to be identified as gifted.¹² Furthermore, it has been found that parental contact with schools tends to increase the likelihood that a student will be selected for a gifted program.¹³ Universal screenings (i.e., testing all students for giftedness) have been shown to be



one way to narrow the gaps in access to gifted education.⁸ Universal screenings are one of the requirements for state-approved gifted education programs.¹⁴ For more information, see our Science Note on [Education Opportunity Gaps](#).

Figure 1. Participation rates in gifted education programs in Missouri 2020. Darker green indicates a higher proportional level of student participation in gifted programs. Values range from 0% to >10%.

Source: <https://dese.mo.gov/quality-schools/gifted-education>

Missouri & Gifted Education

[House Bill 2366](#) and [Senate Bill 806](#) would require all school districts in Missouri with 3% or more of their students identified as gifted to establish a state-approved gifted program. DESE has produced a set of [guidelines](#) for state-approved gifted education programs that includes selection protocols and gifted education teacher caseloads.¹⁴ Additionally in the proposed legislation, teachers providing gifted services would be required to be certified in gifted education in school districts with average daily attendances of 350 students or more. For districts below this threshold, teachers providing gifted services would instead be required to participate in six or more hours of professional development on gifted education. Students are determined to be gifted using the definition in RSMo [162.675](#):

"[C]hildren who exhibit precocious development of mental capacity and learning potential as determined by competent professional evaluation to the extent that continued educational growth and stimulation could best be served by an academic environment beyond that offered through a standard grade-level curriculum" - RSMo [162.675](#)

While not all districts in Missouri offer gifted education services, all districts are required to offer grade or subject-specific accelerations (i.e., skipping a grade or taking a higher level class) for students with advanced academic capability and socio-emotional readiness (RSMo [162.722](#)).

In 2020, 4.3% of all K-12 students in Missouri (37,772 students) were identified as gifted. Of the gifted students, around 15% of identified gifted students (5,754 students) were not in state-approved gifted education programs. Districts that do not have gifted education programs are largely located in rural areas of Missouri (**Figure 1**). Nationwide, the most recent average proportion of students enrolled in gifted programs was [6.7%](#).¹⁵

References

1. Bhatt, R. (2011). A review of gifted and talented education in the United States. *Education Finance and Policy*, 6(4), 557-582. https://doi.org/10.1162/EDFP_a_00048
2. Southern, W.T. & Jones, E.D. (2015) Types of Acceleration: Dimensions and Issues. In Assouline, S.G., Colangelo, N., VanTassel-Baska, J. & Lupkowski-Shoplik, A (Eds.), *A nation empowered: Evidence trumps the excuses holding back America's brightest students* (Vol. 2). Belin-Blank Center.
3. Callahan, C., Moon, T., & Oh, S. (2017). Describing the Status of Programs for the Gifted: A Call for Action. *Journal for the Education of the Gifted*. doi: 10.1177/0162353216686215.
4. Callahan, C.M., Moon, T.R., Oh, S., Azano, A.P., & Hailey, E.P. (2015). What Works in Gifted Education: Documenting the Effects of an Integrated Curricular/Instructional Model for Gifted Students. *American Educational Research Journal*, 52(1), 137-167. <https://doi.org/10.3102/0002831214549448>
5. Bui, S. A., Craig, S. G., Imberman, S. A. (2014). Is gifted education a bright idea? Assessing the impact of gifted and talented programs on achievement. *American Economic Journal: Economic Policy*, 6(3), 30-62.
6. Redding, C., & Grissom, J. A. (2021). Do Students in Gifted Programs Perform Better? Linking Gifted Program Participation to Achievement and Nonachievement Outcomes. *Educational Evaluation and Policy Analysis*, 43(3), 520-544. <https://doi.org/10.3102/01623737211008919>

7. Steenbergen-Hu, S., Makel, M. C., & Olszewski-Kubilius, P. (2016). What One Hundred Years of Research Says About the Effects of Ability Grouping and Acceleration on K-12 Students' Academic Achievement: Findings of Two Second-Order Meta-Analyses. *Review of Educational Research*, 86(4), 849-899. <https://doi.org/10.3102/0034654316675417>
8. Card, D. & Giuliano, L. (2016) Universal screening for gifted education. *PNAS*, 113(48): 13678-13683 doi: 10.1073/pnas.1605043113
9. Azano, A.P., Callahan, C.M., Brodersen, A.V., & Caughey, M. (2017). Responding to the Challenges of Gifted Education in Rural Communities. *Global education review*, 4, 62-77. <https://dese.mo.gov/media/pdf/identifying-and-serving-traditionally-underrepresented-gifted-students>
10. Missouri Department of Elementary and Secondary Education (Revised July 2021) Identifying and Serving Traditionally Underrepresented Gifted Students: Guidance for Missouri School Districts.
11. Elhoweris, H., Mutua, K., Alsheikh, N., & Holloway, P. (2005). Effect of Children's Ethnicity on Teachers' Referral and Recommendation Decisions in Gifted and Talented Programs. *Remedial and Special Education*, 26(1), 25-31. <https://doi.org/10.1177/07419325050260010401>
12. Figlio, David. 2005. Names, expectations and the black-white test score gap. NBER Working Paper No. 11195. <https://www.nber.org/papers/w11195>
13. Walsh, P. (2008). Are Involved Parents Providing Public Goods or Private Goods? *Public Finance Review*, 36(6), 678-705. <https://doi.org/10.1177/1091142107308298>
14. Missouri Department of Elementary and Secondary Education (July 2021) Missouri Gifted Program Guidelines. <https://dese.mo.gov/media/pdf/gifted-program-guidelines-2021>
15. U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection: 2004, 2006, 2011-12, and 2013-14.