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Does the Study about Alaska Public Correspondence Schools (McCracken and Coleman, 2020) Apply to Private Homeschools?

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Introduction

In a recent report, McCracken and Coleman (2020) asserted that pass rates on Alaska state exams were higher for students who had been educated in public school correspondence programs than for students who were taught in traditional school settings. Their finding that correspondence programs appeared to be more impactful than traditional schools on the pass rates of non-White students, students with disabilities, and students from low-income homes was, perhaps, the most important outcome of the study because these minority groups typically benefit the least from traditional education (National Center for Educational Statistics, 2019). McCracken and Coleman (2020) should be recognized for bringing these findings into focus, especially if they are validated by future researchers. However, the authors' rationalization that these findings about public correspondence schools also applied to private homeschools (Coleman & McCracken, 2020) ignored the delineation between the two forms of schooling as spelled out in Alaska regulations and resulted in errant recommendations and generalizations. Normally, researchers who conduct exploratory studies compare disparate populations, make tentative conclusions, and call for additional exploratory and/or experimental studies. However, by making definitive conclusions and claiming that the findings held broad implications for private homeschool policy development, McCracken and Coleman went beyond the reach of the study. Finally, the authors' study of correlations between pass rates and educational settings ignored a large, established body of literature that showed that student academic gains were caused not by the location of instructional settings but instead by the level of Active Academic Engagement (AAE) that students experienced within them (e.g., Duvall, Ward, Delquadri, & Greenwood, 1997; Duvall, Delquadri, & Ward, 2004; Hall, Delquadri, Greenwood, & Thurston, 1982; Stanley & Greenwood, 1983). By not using this body of literature to build upon, McCracken and Coleman (2020) employed methods in the Alaskan study that researchers began to abandon decades ago (e.g., Stanley & Greenwood, 1983; Thurlow, Ysseldyke, Graden, & Algozzine, 1983).

In the following, information about the McCracken and Coleman (2020) study will be presented so that readers can understand why its results could be used to make tentative conclusions and recommendations relating to state-sponsored or state-controlled correspondence programs—but not to private homeschools. This discussion will report some of the important findings of their study and demonstrate how its sampling procedures and design resulted in overgeneralizations

regarding private homeschools. Finally, the article will conclude by challenging future researchers to focus on the intensity of instruction that occurs in homeschools as opposed to where the instruction takes place, because doing so would likely provide a deeper understanding of the effectiveness of homeschool instruction.

Caveats

Issue with Statistical Procedure Used. McCracken and Coleman (2020) used a good statistical procedure for analyzing archived data that had been collected over an 11-year period leading up to 2014. For example, the Welch Test for unequal variances was likely a suitable choice for the data analyses because it is proper to use when making comparisons in which scores generated by one group are more widely dispersed than scores from the other group. Additionally, it is an appropriate procedure to use when comparing groups that vary in size. Assuming that the authors were faced with one or both of these data patterns, it appears that they made the right decision to use this statistical procedure. However, because the Welch Test has been shown to increase the occurrence of statistically significant differences in instances where none existed (e.g., Ahad & Yahaya, 2014), it could mean that some of the pass rate differences between correspondence and traditional students were large enough to raise statistical red flags but not robust enough to signify differences that had any real or practical value. This does not make the findings reported by McCracken and Coleman (2020) incorrect, necessarily, but it does mean that their outcomes should be viewed with a lower degree of certainty.

Problems Related to the Generalizability of Findings Due to Sampling Procedures. A second, but more serious, matter relating to the McCracken and Coleman (2020) study involved their research sample. That is, the authors apparently wanted to study how private homeschooling impacted student pass rates on state exams, but, because they had no private homeschool data to analyze, the authors (see Coleman and McCracken, 2020) reasoned that they could, instead, study the pass rates of students who were enrolled in state-sponsored or state-controlled correspondence programs and subsequently generalize their findings to students who were taught in private homeschools because of relevant similarities (e.g., site of instruction, parent involvement) between the two forms of schooling. The following discussion is provided to help the reader understand why McCracken and Coleman (2020) erred in doing so.

When selecting participants for a research study, it is necessary to choose a sample of participants that reflects the targeted population as closely as possible because, the more the sample reflects the population of interest, the more applicable (i.e., generalizable) the findings will be to that population (Leedy & Ormrod, 2005). For example, if administrators from school district *X* (that included 10,000 seniors) wanted to determine how successful their district was at instilling confidence in students who were about to graduate from high school, then, instead of questioning all 10,000 seniors, the administration could select, for example, a sample of 250 seniors in the district and inquire how confident they felt as the date of their graduation approached. Furthermore, if the 250 seniors in the sample closely mirrored (i.e., had similar proportions of male and female students, racial characteristics, etc.) the senior class of 10,000, the administration could have a high level of confidence that the results obtained from the 250 seniors would generalize to the entire senior class. However, if the administrators from district *X* chose all 250 participating seniors from the neighboring school district *Y*, any claims that the findings applied to seniors who were about to graduate from district *X* would be unsubstantiated because the district populations might be very different from one another. In like manner, McCracken and Coleman (2020) analyzed the pass rates of students who attended public correspondence schools but not private homeschool students because private homeschool data were unavailable. Even so, the authors concluded that their findings relating to correspondence students generalized not just to correspondence students but also to private homeschool students—and in doing so, they erred in the process.

Because an unrepresentative sampling procedure can cause researchers to reach conclusions and make recommendations that are inaccurate, it is something journal reviewers typically look at very carefully when manuscripts are submitted for publication. Surprisingly, sampling errors are among the most common reasons why research manuscripts require substantial revision or get rejected outright for publication (e.g., Gay, 1992). Even so, on occasion, journal editors may miss or even overlook sampling shortcomings during the manuscript reviewing process and publish the article regardless of the sampling error involved (e.g., Hall, Ward, & Corner, 1988). To this point, Hall et al. (1988) used highly qualified judges to evaluate the research techniques used in 54 published articles and determined that 15 (28%) of the studies had used poor sampling procedures. As such, getting something published in a scientific journal means that a manuscript has gone through a screening process, but the process does not guarantee that the science behind the study is

necessarily adequate. Unfortunately, the study by McCracken and Coleman (2020) involved a sampling error that the journal editors apparently chose to overlook after the authors argued at length (Coleman & McCracken, 2020) as to why the unavailability of private homeschool data made it necessary to analyze information that came from an entirely different population (i.e., Alaska's public correspondence programs). Regardless, the tactic of generalizing research findings to an unsampled, unstudied population made it extremely difficult to determine what level of confidence, if any, could be placed in the inferences that were made by the authors.

While Coleman and McCracken (2020) reasoned that Alaska's state-sponsored and state-controlled correspondence programs were essentially private homeschools, an examination of the regulations that define the two forms of schooling would probably lead most readers to conclude otherwise. For example, Alaska regulations (Alaska Stat. § 14.03.290) set forth specific criteria relating to correspondence programs that involve professional educators at most every stage by requiring districts or departments to develop an annual Individual Learning Plan (ILP) for each enrollee. This requires collaboration between a student, the student's parent or guardian, a certified teacher assigned to the student, and other individuals who participate in the ILP. Specifically, the ILP must (a) be developed with the assistance and approval of a certified teacher assigned to the student by the district, (b) provide a course of study for the appropriate grade level consistent with state and district standards, (c) provide an ongoing assessment plan that includes statewide assessments that are used with public school students, (d) include a provision for modifying the ILP in the event that the student scores below proficient on a standardized assessment in a core subject, (e) include a signed agreement between the certified teacher and the parent or guardian that verifies compliance with the ILP, and (f) indicate how each student's work and progress will be monitored by the certified teacher assigned to the student. In effect, correspondence parents may be engaged in day-to-day lessons, but professional educators are also involved, to a degree at least, every step of the way.

In contrast to correspondence programs, Alaska private homeschool options provide parents with greater freedom and flexibility for customizing home learning environments. For example, parents can: a) teach their children at home independent of state requirements; b) use private tutors; c) decide whether they want local school board approval of their home education program; or d) register and operate their homeschool as a religious private school (Alaska Stat. § 14.30.010). At

the very least, a study of homeschools in Alaska should include collecting and analyzing data that reflect the educational performance of students educated under one or more of these homeschool options, because doing so would increase the likelihood that the findings would generalize to other similarly-structured homeschools. On the contrary, by excluding data that were collected from any students who were educated under these homeschooling options, McCracken and Coleman (2020) cast doubt that their findings would apply to private homeschools because, as spelled out in Alaska law (AL Stat. § 14.30.010), private homeschools are the ultimate responsibility of parents (see Donnelly [2012] for an in-depth analysis of private homeschooling) while correspondence programs are ultimately the responsibility of the state. By generalizing what they learned about correspondence programs to private homeschools, it is apparent that McCracken and Coleman (2020) went beyond their data.

Problems with the Study's Design. The conclusions of the McCracken and Coleman (2020) study implied that the findings from their ex post facto exploratory study (i.e., non-experimental study of historical data) were obtained through a rigorous experimental design. To be sure, exploratory methodology (Gay, 1992) has its place in scientific endeavor because it is used to better understand existing problems, define problems more clearly, arrive at tentative conclusions, and suggest future research (Leedy & Ormrod, 2005). However, by claiming that their findings were conclusive enough to guide homeschool policy development, rather than tentative, McCracken and Coleman (2020) went beyond the scope of their study and undermined their findings.

Important Discoveries and Other Findings

McCracken and Coleman (2020) primarily analyzed scores from two tests (i.e., Standards Based Assessment [SBA] and the High School Graduation Qualifying Examination [HSGQE]) that were designed to reflect what students learned during their public school experience. Although their study included results from official state tests, the fact that old scores (2005–14) were used for their analyses could be problematic because education standards and state assessment tests undergo constant revision. As such, it was inaccurate to imply that the outcomes in the McCracken and Coleman (2020) study were representative of what correspondence and traditional students currently know because some of their information was obtained one-and-a-half decades ago and would no longer apply. As a result, findings that are mentioned in the following paragraphs should

be viewed as a reflection of student performance in years past that, in some cases, may now be incorrect or obsolete.

Overall SBA pass rates. In reading through the McCracken and Coleman (2020) manuscript, it can be seen that the respective overall SBA pass rates for correspondence students and traditional school students were, for all practical purposes, the same (75.4 vs 74.3, scores rounded to the nearest tenth). Additionally, the authors reported that the correspondence students had higher pass rates than their traditional school counterparts in reading (86.1 vs 79.4) and writing (76.6 vs 74.2) but lower ones in math (63.4 vs 69.3).

These findings were inconsistent with other research outcomes showing that homeschool students typically performed as well or better than public school students in not just reading and writing but math as well (e.g., Duvall et al., 2004; Duvall, Delquadri, Ward, & Greenwood, 1997; Ray, 2010; Rudner, 1999). The simplest explanation for why the McCracken and Coleman (2020) study did not replicate the academic findings of earlier research may be due to the current study comparing two formats of publicly controlled education while previous studies (e.g., Duvall et al., 2004; Duvall, et al., 1997; Ray, 2010; Rudner, 1999) included student data collected from actual homeschools. Another explanation for the conflicting math outcomes might have to do with ever-changing math terminology: parents who instructed their children to reason well mathematically and calculate accurately by using older math terms and methods may not familiarize them with some of the most up-to-date math language and techniques that they could encounter on the SBA exam (e.g., asking a student to take a decomposed number and compose it into a simplified form is Common Core terminology for requesting the sum of two numbers [see Faulkner, 2013]). Given that professional teachers can also be confused by the changes that occur in mathematics terminology (e.g., Smith, Booker, Hochberg, & Desimone, 2018), the lower pass rates earned by correspondence students may have had more to do with changes in math terminology than with math skills per se. Without analyzing individual test items, it is difficult, if not impossible, to conclude why the correspondence students had lower pass rates for math than did the students who attended traditional schools.

Among other interesting findings of the McCracken and Coleman (2020) study were that the pass rates for non-White students, students with disabilities, and students from low-income homes were positively impacted by the Alaska correspondence study program. For example, the respective pass rates for correspondence students and traditional school students were reported to be 68.3 vs

64.9 (for African American students), 61.8 vs 54 (for Alaska Native and American Indian students), 80.1 vs 73.2 (for Asian and Pacific Islander students), and 74.3 vs 72.5 (for Hispanic students). Because it has long been known that each of these groups typically benefitted the least when taught in traditional education settings (NCES, 2019), further research on the impact that correspondence programs have on the pass rates of each of these populations would be helpful because it could show that parental involvement, as opposed to the locus of learning, is a key factor in supporting such positive learning outcomes.

Overall HSGQE pass rates. Although many of the HSGQE findings reported in the manuscript (McCracken and Coleman, 2020) substantiated findings from the SBA, there were inconsistencies, as well. For example, in contrast to the overall SBA pass rates that were only slightly higher for correspondence students, McCracken and Coleman (2020) reported that the overall HSGQE pass rates were significantly higher for correspondence students than for traditional school students (63.9 vs 54, respectively). The same was found to be the case with students from minority groups (i.e., 78.8 vs 65.9 [African American], 65 vs 61.3 [Alaska Native and American Indian], 81.7 vs 74.9 [Asian and Pacific Islander], and 74.5 vs 73.1 [Hispanic]) and disadvantaged homes (i.e., 72.7 vs 65). Pertaining to students with disabilities, the correspondence students again had a higher rate of passing the HSGQE test than did the traditional students on the SBA, but were not found to pass at a rate that was statistically significantly higher. Even so, these findings about minority correspondence students are insightful and signal the need for more research because they, like those for the SBA, likely indicate how impactful minority parents are at improving their children's academic performance.

Concerning HSGQE outcomes in the basic skill areas, the correspondence students had pass rates that were higher in reading (i.e., 86.4 vs 80.2), about the same in writing (i.e., 78.3 vs 78.9), and lower in math (i.e., 71.9 vs 75.9). In effect, the reading pass rates on the HSGQE substantiated those from the SBA while the pass rates for the HSGQE writing and math tests did not. Even so, when considering the HSGQE results in their entirety, the correspondence programs were clearly more effective than traditional schools at preparing students to pass the exam. The reader is reminded that the analyses of dated information from this test, like that from the SBA, made it difficult to judge whether the findings reported by McCracken and Coleman (2020) would generalize to current-day correspondence programs, much less private homeschools.

Refocusing Homeschool Research Efforts

Researchers would do well to build upon the notion that homeschool students likely make more academic gains than public school students, not only or even primarily because of the instructional setting, but because they experience more intense instruction than do the public school students. Instructional intensity can be determined by measuring the level of AAE that occurs during a lesson (AAE is defined as the amount or percent of time that students are engaged in reading curriculum materials [aloud or silently], talking about the curriculum or lesson, writing about curriculum issues, making physical academic responses [e.g., working math problems on a calculator], or typing) and is extremely important, as shown by a sizeable number of studies that demonstrated that academic gains accelerated when AAE increased and decelerated when AAE decreased (e.g., Broden, Beasley, & Hall, 1978; Delquadri, Greenwood, Stretton, & Hall, 1983; Delquadri, Greenwood, Whorton, Carta, & Hall, 1986; Duvall et al., 1997; Duvall et al., 2004; Gettinger & Seibert, 2002; Wallace, Reschly-Anderson, Bartholomay, & Huff, 2002). For example, in a study by Duvall et al. (1997), homeschool and public school students with learning disabilities were matched according to IQ, area of IEP disability, achievement scores, gender, SES, and grade. Throughout the course of this study, the students were directly observed at regularly scheduled intervals to determine the level of active academic engagement (AAE) that they experienced during their lessons. By the end of the study, pre- and post-testing indicated that the homeschool students had made more gains in reading, writing, and math according to standardized tests and other rate-based measures. But, more importantly, the direct observational data indicated that the homeschool students had made more gains because they experienced much higher levels of AAE during instruction—even though none of the parents involved were trained teachers. Consequently, it appeared that the intensity of the instruction (i.e., as indicated by the high levels of AAE that were exhibited by the homeschool students) was responsible for the students' academic gains as opposed to their instructional settings per se. In a similarly structured study (Duvall et al., 2004), homeschool and public school students with Attention Deficit Hyperactivity Disorder students were matched and tracked over a period of several months. The findings of this study substantiated those of the Duvall et al. (1997) study not only because the homeschool students generally made more gains than their public school counterparts but also because—as was evident via direct observation—their gains were possible because they experienced much higher levels of AAE during instruction. As such, studies like these need to be replicated, not just to validate the positive

outcomes as reported by others (e.g., Duvall et al.,1997; Duvall et al., 2004) but also to determine whether the intensity of homeschool instructional environments is maintained across, for example, academic subjects, number of children being homeschooled, students of different ages, and parent educational levels.

Final Summary

In conclusion, the study by McCracken and Coleman (2020) brought helpful insight regarding the positive impacts that Alaska correspondence programs have on overall state exam pass rates for students. The authors also showed that, compared to traditional school students, the pass rates for minority students, students with disabilities, and students from low-income homes enrolled in correspondence study programs achieved higher test scores. These findings suggest that further study is needed regarding the role that parental involvement contributes to increasing the academic skills of their children. However, McCracken and Coleman's (2020) effort to generalize their findings from public correspondence programs to private homeschools is not valid. Furthermore, their use of an ex post facto, exploratory approach to study dated information about public correspondence programs might allow researchers to reach tentative conclusions about public correspondence programs in Alaska, but generalizing such findings for the purpose of making policy recommendations regarding private homeschools was a substantial overreach.

Making accurate, research-based generalizations relating to homeschool policies will likely always be an arduous task for researchers, especially considering the difficulties involved with locating homeschool participants. To this point, McCracken and Coleman should be recognized for their hard work and attempts to grapple with this challenge. At the same time, their hard work does not alleviate the study's inherent sampling and design flaws that make their findings inapplicable to private homeschools. The only remedy for addressing this dilemma would be to include private homeschool students in future research studies. Such a research project would make a valuable contribution to the homeschool literature by illuminating the impact that the intensity of private homeschool instruction has on homeschool student outcomes.

References

Ahad, N. A., & Yahaya, S. S. S. (2014). Sensitivity analysis of Welch's t-test. *AIP Conference Proceedings, Penang, Malaysia, 1605*(1), 888. https://doi.org/10.1063/1.4887707

Broden, M., Beasley, A., & Hall, R.V. (1978). In-class spelling performance: Effects of home tutoring by a parent. *Behavior Modification, 2*(4), 511–530. https://doi.org/10.1177/014544557824005

Coleman, R., & McCracken, C. (2020). Who "counts" as homeschooled? The case of Alaska's correspondence schools. *Other Education: The Journal of Educational Alternatives, 9*(1), 177–206. https://www.othereducation.org/index.php/OE/article/view/231/258

Delquadri, J., Greenwood, C.R., Stretton, K., & Hall, R.V. (1983). The peer tutoring game: A classroom procedure for increasing opportunity to respond and spelling performance. *Education and Treatment of Children, 6*(3), 225–239. https://www.jstor.org/stable/42898779

Donnelly, M.P. (2012). Homeschooling. In C.L. Glenn & J. De Groof (Eds.). *Balancing freedom, autonomy and accountability in education* (Vol 1, pp. 199–220). Oisterwijk, Netherlands: Wolf Legal Publishers

Duvall, S.F., Delquadri, J.C., & Ward, D.L. (2004). A preliminary investigation of the effectiveness of homeschool instructional environments for students with attention deficit hyperactivity disorder. *School Psychology Review, 33*(1), 140–158.

Duvall, S.F., Delquadri, J.C., Ward, D.L., and Greenwood, C.R. (1997). An exploratory study of homeschool instructional environments and their effects on the basic skills of students with learning disabilities. *Education and Treatment of Children, 20*(2), 150–172.

Education, Libraries, and Museums. Alaska Stat. § 14.30.010 (2019).

Education, Libraries, and Museums. Alaska Stat. § 14.03.300 (2019).

Faulkner, V.N. (2013). Why the common core changes math instruction. *Phi Delta Kappan, 95*(2), 59–63.

Gay, L.R. (1992). *Educational research: Competencies for analysis and application* (4th ed.). New York, New York: Macmillan Publishing Company

Gettinger, M., & Seibert, J.K. (2002). Best practices in increasing academic learning time. In A. Thomas, & J. Grimes (Eds.). Best practices in school psychology (Vol. 4, pp. 773–787). Bethesda, MD: The National Association of School Psychologists

Hall, B.W., Ward, A.W., & Comer, C.B. (1988). Published educational research: An empirical study of its quality. *Journal of Educational Research, 81*(3), 182–189. https://www.jstor.org/stable/40539655

Hall, R.V., Delquadri, J.C., Greenwood, C.R., & Thurston, L. (1982). The importance of opportunity to respond in children's academic success. In E. Edgar, N. Haring, J. Jenkins, & C. Pious (eds.), *Serving young handicapped children: Issues and research* (pp. 107–149). Austin, TX: Pro-Ed

Hallahan, D.P., Kauffman, J.M., & Pullen, P.C. (2019). *Exceptional learners: An introduction to special education* (14th ed.). New York, New York: Pearson

Leedy, P.D., & Ormrod, J.E. (2005). *Practical research planning and design* (8th ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall

McCracken, C., & Coleman, R. (2020). A meaningful measure of homeschool academic achievement: Statistical analysis of standardized test performance in Alaska public correspondence schools. *Other Education: The Journal of Educational Alternatives, 9*(1), 207–252. https://www.othereducation.org/index.php/OE/issue/view/17

NCES. (2019). Status and trends in the education of racial and ethnic groups 2018. https://nces.ed.gov/pubs2019/2019038.pdf

Smith, M., Booker, L.N., Hochberg, E.D., & Desimone, L.M. (2018). Do organizational supports for math instruction improve the quality of beginning teachers' instruction? *Teachers College Record, 120*(7), 1–46.

Stanley, S.O., & Greenwood, C.R. (1983). How much "opportunity to respond" does the minority disadvantaged student receive in school? *Exceptional Children, 4*(49), 370–373. https://doi.org/10.1177/001440298304900414

Pawel, K., & Fidler, F. (2010). Interpreting significance: The differences between statistical significance, effect size, and practical importance. *Newborn and Infant Nursing Reviews, 10*(1), 50–54. https://doi.org/10.1053/j.nainr.2009.12.007

Thurlow, L., Ysseldyke, J.E., Graden, J.L., & Algozzine, B. (1983). What's "special" about the special education resource room for learning disabled students? *Learning Disability Quarterly, 6*(3), 283–288. https://doi.org/10.2307/1510439

Wallace, T., Reschly-Anderson, A., Bartholomay, T., & Huff, S. (2002). An ecobehavioral examination of high school classrooms that include students with disabilities. *Exceptional Children*, *68*(3), 345–359. https://doi.org/10.1177/001440290206800304.

Ysseldyke, J.E., Thurlow, M.L., Christenson, S.L., & Weiss, J. (1987). Time allocated to instruction of mentally retarded, learning disabled, emotionally disturbed, and nonhandicapped elementary students. *The Journal of Special Education, 21*(3), 43–55. https://doi.org/10.1177/002246698702100305

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