RESEARCH BRIEF | SUMMER 2023

# Building Instructional Excellence and Advancing Student Achievement in Indiana

## Results of a Teacher and School Leader Incentive Program Grant

NIET | NATIONAL INSTITUTE FOR EXCELLENCE IN TEACHING

# Building Instructional Excellence and Advancing Student Achievement in Indiana

*Results of a Teacher and School Leader Incentive Program Grant*

## Introduction

Effective teachers are developed through preparation programs, but, more importantly, through continuing professional learning relevant to the students that they teach. To continue to grow, teachers need a supportive environment that allows them to develop their instructional skills through specific, actionable feedback (e.g., Arneson, 2015; Haep et al., 2016; Tuytens & Devos, 2017). School and district leaders can build a supportive environment through enhancing their human capital management system (HCMS) to include professional learning that incorporates research-based strategies (DeMonte, 2013), a collaborative learning environment (Lipscombe et al., 2020; Voogt et al., 2016), and coaching and mentoring of teachers on effective instructional practices and strategies (Damore & Rieckhoff, 2019; Kraft et al., 2018). Implementing an HCMS that includes these supportive elements leads to continuous improvement in teachers' instructional skills, which in turn leads to improved student performance.

In fall 2019, the National Institute for Excellence in Teaching (NIET) and Indiana district partners were awarded a U.S. Department of Education Teacher and School Leader (TSL) Incentive Program grant to expand and sustain HCMS to support teachers and improve students' academic success. The TSL program provided funding to implement sustainable HCMSs that include performance-based compensation and professional learning and growth opportunities to help recognize, develop, and retain effective educators in high-need schools (defined as at least 50% of students eligible for free or reduced-price lunch subsidies) and, thereby, improve students' academic success.

The Indiana TSL district partners served urban, rural, and small city communities. The Indiana TSL partnership impacted more than 120 administrators, 1,800 teachers, and 26,000 students in grades PK – 12. On average, these high-need schools had over 60% of students qualify for free and reduced-price lunch and over 50% of students were students of color. This research brief examines the evidence of successful accomplishment of the Indiana TSL partnership goals related to enhancing teachers' instructional skills and improving student achievement.

## Indiana TSL Partnership

Building an effective teacher workforce in schools requires school districts to improve their HCMS. Enhancing the HCMS contributes to better working relationships, advancing organizational knowledge, and improving student outcomes (Audisio et al., 2023; Backes et al., 2022; Ford & Forsyth, 2021; Taylor, 2022). Inversely, low-quality HCMS can lead to teacher turnover with detrimental effects on teacher quality and student achievement (Sorensen & Ladd, 2020). In 2016, the Center for American Progress released recommendations for school districts to improve their HCMS, which included mentorship for new teachers, high-quality professional development with frequent opportunities for feedback, opportunities for career advancement and leadership roles, and competitive compensation (Konoske-Graf et al., 2016). The HCMS improvements that Indiana TSL district partners implemented during the grant address all of these recommendations.

As part of the TSL grant, districts establish or enhance their HCMS through the implementation of the TAP System for Teacher and Student Advancement (TAP System). The TAP System is a comprehensive educator effectiveness model that hundreds of schools have implemented since 1999 through federal, state, and local funding initiatives. The TAP System's theoretical framework consists of four aligned core elements designed to improve educator effectiveness, and thereby improve students' academic success (National Institute for Excellence in Teaching, n.d.). These four core elements of the TAP System are described next.

Multiple career paths. Increasingly, schools are shifting away from traditional leadership structures toward an approach in which administrators work with teacher leaders to drive instructional improvements that impact every classroom (Torres, 2019; Wenner & Campbell, 2017). Skilled teachers in TAP System schools can serve as teacher leaders, receiving additional compensation for providing support to career teachers, who have primarily classroom instructional responsibilities. Along with administrators, teacher leaders form a leadership team to deliver professional support and appraise teachers' performance.

Ongoing applied professional growth. Research shows that teacher-led, ongoing, collaborative, and relevant professional development enhances teacher learning, student achievement, and teacher retention (Brown & Wynn, 2007; Doğan & Adams, 2018; Goddard et al., 2015; Hill & Papay, 2022; Ronfeldt et al., 2015). One foundational supportive structure for teachers' collaboration in TAP System schools is a weekly cluster meeting. Led by teacher leaders, the cluster meeting is embedded into the school day for career teachers to examine student data, engage in collaborative planning, and learn instructional strategies field-tested in their own schools. Professional learning continues into the classroom as teacher leaders model lessons, observe classroom instruction, and support career teachers in improving their practices.

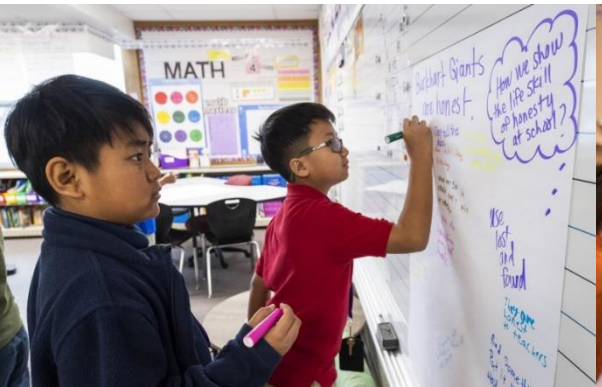
Instructionally focused accountability. Assessment of classroom instruction is essential to improve educator effectiveness, as well as to hold teachers accountable for their work and create relevant professional learning (Darling-Hammond, 2015; Looney, 2011). Additionally, research shows that implementing rigorous and comprehensive teacher evaluation systems encourages self-reflection and meaningful conversations about classroom practice, suggesting a promising school improvement strategy (Ritter & Barnett, 2016). Teachers in TAP System schools are observed several times a year by multiple trained observers using the NIET Teaching and Learning Standards Rubric. Evaluation results and student data guide formative feedback for one-on-one mentoring sessions and plans for cluster meetings.

Performance-based compensation. Performance-based incentive programs have shown gains in teacher retention (Cowan & Goldhaber, 2018) and student achievement (Brownback & Sadoff, 2020; Cohodes et al 2023; Eren, 2019; Pham et al., 2021). Teachers in TAP System schools can earn annual bonuses based on their observed skills, knowledge and responsibilities, the academic growth of their students, and the entire school's achievement growth.

As noted above, TAP System schools have career teachers and teacher leaders. Career teachers provide classroom instruction for students daily. Teacher leaders develop and support the career teachers through observations and feedback, coaching, and cluster meetings. As supporting the instruction of career teachers is one focus of the TAP System, evaluating career teachers' instructional skills gauges the impact of the TAP System in the Indiana TSL partnership. The following section highlights key findings from examining the impact of the Indiana TSL partnership for career teachers and students.

## Findings

Through the supportive framework of the TAP System, both teachers and students have benefited during the Indiana TSL partnership. Career teachers, whether already effective or working to develop effective instructional practices, improved their instructional skills during the grant. The advancement of instructional skills of career teachers helped students in the TSL schools perform better than students in comparable schools. The following sections provide detailed findings from the analyses.




## Finding 1. Improving Instructional Skills of Retained Teachers

One goal of the Indiana TSL partnership was to improve teachers' instructional skills as measured by their classroom observation scores. Career teachers who stayed with their district from the first through the third year of the grant received three years of support to continuously improve their instructional skills. Through the supportive and collaborative elements of the TAP System, teacher leaders and school administrators worked with all teachers to continue improving their instructional skills over three years of the grant. The TAP System helps teachers at different levels of effectiveness advance their instructional skills.

Changes in teachers' instructional skills are assessed by analyzing the average teacher observation ratings or Skills, Knowledge, and Responsibilities (SKR) scores (see the Appendix for details) from the first grant year (2019-20) to the third grant year (2021-22). Two teacher groups are formed based on a fixed effectiveness benchmark. In the first grant year, career teachers with SKR scores above the benchmark are the "effective teachers" group and career teachers with SKR scores below the benchmark are the "developing teachers" group. For these two groups, increases in the average SKR scores reveal improvement in teachers' instructional skills across the Indiana TSL partnership. As shown in Figure 1, on average, effective teachers increased their SKR scores by 0.14 points. This increase was statistically significant ($t(817) = 11.88$, $p < .001$) with a small effect size (Hedge's $g = 0.36$). Additionally, 99% of these effective teachers maintained their SKR scores above the effectiveness benchmark. The developing teachers increased their SKR scores, on average, by 0.52 points. This improvement was statistically significant ($t(33) = 6.45$, $p < .001$) with a very large effect size (Hedges' $g = 2.42$). Furthermore, 100% of developing teachers increased their SKR score and 91% improved their SKR score above the effectiveness benchmark by 2021-22. In sum, teacher instructional skills improved over three years of TAP System implementation within the Indiana TSL partnership. Developing teachers showed the most improvement, with their scores increasing three times as much as scores of those rated effective at the beginning of the grant.

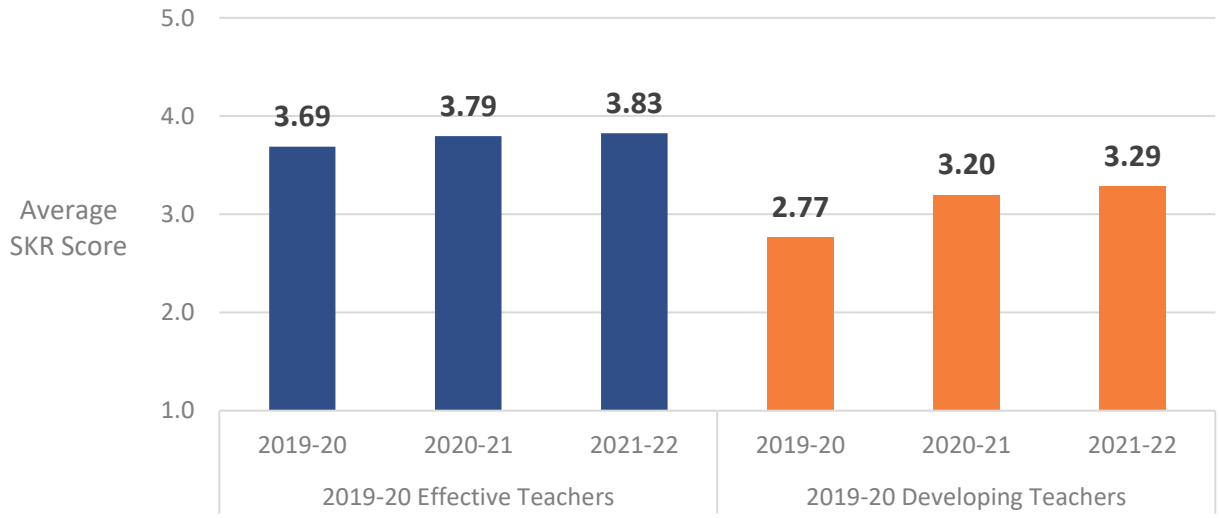



*Figure 1. Average Career Teacher SKR Score, 2019-20 to 2021-22.*

## Finding 2. Outperforming Comparison Schools in Student Achievement

The expected consequence from improving teachers' instructional skills is increased student achievement. To assess student achievement, the study compares the Indiana TSL partner schools with grades 3-8 state testing results to comparison schools. The comparison schools were selected based on having similar school demographics and state testing results to the TSL schools during the pre-grant year (2018-19; see the Appendix about the matching process). The school performance measures are the percentage of students proficient or

above on the English language arts (ELA) and mathematics state assessments. By examining the difference between the Indiana TSL partner schools and the comparison schools, calculated as the average performance of the former minus the average performance of the latter over the three grant years, this study provides insights into whether students' performance in Indiana TSL partner schools differs from that in the comparison schools.

During the pre-grant year of 2018-19, the Indiana TSL partner schools outperformed the comparison schools in both ELA and mathematics. However, neither of these differences were statistically significant and the effect sizes are small (ELA: $g = 0.26$; Math: $g = 0.29$). Since no state tests were administered in 2019-20, the state test data are first available for the 2020-21 school year, two years after the TSL grant was awarded. Overall, the Indiana TSL partner schools outperformed the matched comparison schools in mathematics and ELA across the grant years. The state assessment results for the grant years are presented in Figure 2. The mathematics differences for 2020-21 and 2021-22 had small effect sizes ($g = 0.38$ and $g = 0.44$, respectively) but did not attain statistical significance. Conversely, the ELA differences for 2020-21 and 2021-22 had medium effect sizes ($g = 0.61$ and $g = 0.71$, respectively) and were statistically significant ($t(50) = 2.25$, $p < .05$ and $t(50) = 2.61$, $p < .01$, respectively). The ELA results attained statistical significance, which means the results were not likely due to chance. In a practical sense, one could expect similar ELA results from implementing the TAP System in schools with similar characteristics to the Indiana TSL partner schools.

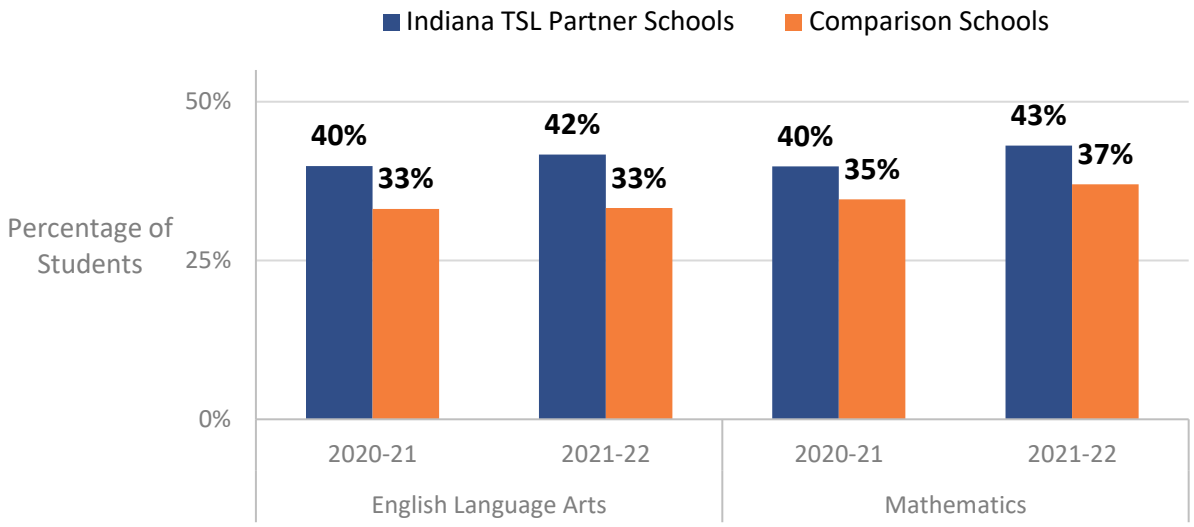



*Figure 2. Percentage Proficient or Above on Indiana State Assessments, Indiana TSL Partner Schools Average and Comparison Schools Average, 2020-21 to 2021-22.*

## Conclusion

Students in schools with a high percentage of students from economically disadvantaged households are often the students least likely to have access to effective educators (Max & Glazerman, 2014). By enhancing their HCMS with the supportive elements of the TAP System, Indiana TSL district partners created a collaborative working environment that improved instructional skills for teachers who remain in their district. This collaborative environment was particularly beneficial for developing teachers. These developing teachers improved their observation scores three times more than already effective teachers over the examined three-year period. The Indiana TSL partner schools' commitment to continuous improvement of the instructional workforce has also been beneficial for students. The Indiana TSL partner schools performed better in ELA and mathematics than matched comparison schools. In sum, through three years of continuous improvement of their implementation of the TAP System, the schools in the Indiana TSL partnership developed supportive environments that provided benefits to both teachers and students. Further, through their implementation of the TAP System, the Indiana TSL district partners built educator capacity, which ensures sustained impacts for both teachers and students.

# References


Arneson, S. (2015). Improving Teaching, One Conversation at a Time. *Educational Leadership*, *72*(7), 32–36.

Audisio, A., Taylor-Perryman, R., Tasker, T., & Steinberg, M. P. (2023). *Does Teacher Professional Development Improve Student Learning? Evidence from Leading Educators' Teacher Fellowship Model* (EdWorkingPaper No. 22–597). Annenberg Institute at Brown University. https://doi.org/10.26300/AH2F-Z471

Brown, K. M., & Wynn, S. R. (2007). Teacher Retention Issues: How Some Principals Are Supporting and Keeping New Teachers. *Journal of School Leadership*, *17*(6), 664–698.

Brownback, A., & Sadoff, S. (2020). Improving College Instruction through Incentives. *Journal of Political Economy*, *128*(8), 2925–2972. https://doi.org/10.1086/707025

Cohodes, S., Eren, O., & Ozturk, O. (2023). *The Long Run Effects of a Comprehensive Teacher Performance Pay Program on Student Outcomes* (Working Paper 31056). National Bureau of Economic Research. https://doi.org/10.3386/w31056

Cowan, J., & Goldhaber, D. (2018). Do bonuses affect teacher staffing and student achievement in high poverty schools? Evidence from an incentive for national board certified teachers in Washington State. *Economics of Education Review*, *65*, 138–152. https://doi.org/10.1016/j.econedurev.2018.06.010

Damore, S. J., & Rieckhoff, B. S. (2019). School Leader Perceptions: Coaching Tool and Process: *Journal of Research on Leadership Education*. https://doi.org/10.1177/1942775119868258

Darling-Hammond, L. (2015). Want to Close the Achievement Gap? Close the Teaching Gap. *American Educator*, *Winter 2014-2015*. https://www.aft.org/sites/default/files/darling-hammond.pdf

DeMonte, J. (2013). *High-Quality Professional Development for Teachers: Supporting Teacher Training to Improve Student Learning*. Center for American Progress. https://eric.ed.gov/?id=ED561095

Doğan, S., & Adams, A. (2018). Effect of professional learning communities on teachers and students: reporting updated results and raising questions about research design. School effectiveness and school improvement, 29(4), 634-659. https://doi.org/10.1080/09243453.2018.1500921

Eren, O. (2019). Teacher Incentives and Student Achievement: Evidence from an Advancement Program. *Journal of Policy Analysis and Management*, *38*(4), 867–890. https://doi.org/10.1002/pam.22146

Ford, T. G., & Forsyth, P. B. (2021). Teacher corps stability: Articulating the social capital enabled when teachers stay. *Journal of Educational Administration*, *59*(2), 233–252. https://doi.org/10.1108/JEA-02-2020-0036

Goddard, R., Goddard, Y., Sook Kim, E., & Miller, R. (2015). A Theoretical and Empirical Analysis of the Roles of Instructional Leadership, Teacher Collaboration, and Collective Efficacy Beliefs in Support of Student Learning. *American Journal of Education*, *121*(4), 501–530. JSTOR. https://doi.org/10.1086/681925

Haep, A., Behnke, K., & Steins, G. (2016). Classroom observation as an instrument for school development: School principals' perspectives on its relevance and problems. *Studies in Educational Evaluation*, *49*, 1–6. https://doi.org/10.1016/j.stueduc.2016.03.001

Hill, H. C., & Papay, J. P. (2022, October 25). Building better PL: How to strengthen teacher learning. Research Partnership for Professional Learning. https://annenberg.brown.edu/sites/default/files/rppl-building-better-pl.pdf

Konoske-Graf, A., Partelow, L., & Benner, M. (2016). *To Attract Great Teachers, School Districts Must Improve Their* Human *Capital Systems*. Center for American Progress. https://www.americanprogress.org/issues/education-k-12/reports/2016/12/22/295574/to-attract-great-teachers-school-districts-must-improve-their-human-capital-systems/

Kraft, M. A., Blazar, D., & Hogan, D. (2018). The Effect of Teacher Coaching on Instruction and Achievement: A

Meta-Analysis of the Causal Evidence. *Review of Educational Research*, *88*(4), 547–588. https://doi.org/10.3102/0034654318759268

Lipscombe, K., Buckley-Walker, K., & McNamara, P. (2020). Understanding collaborative teacher teams as open systems for professional development. *Professional Development in Education*, *46*(3), 373–390. https://doi.org/10.1080/19415257.2019.1613256

Looney, J. (2011). Developing High-Quality Teachers: Teacher evaluation for improvement. *European Journal of Education*, *46*(4), 440–455. https://doi.org/10.1111/j.1465-3435.2011.01492.x

Max, J., & Glazerman, S. (2014). Do Disadvantaged Students Get Less Effective Teaching? Key Findings from Recent Institute of Education Sciences Studies (Evaluation Brief). In *Mathematica Policy Research Reports* (a7da30900bb047038d31acd568b7e97d; Mathematica Policy Research Reports). Mathematica Policy Research. https://ideas.repec.org/p/mpr/mprres/a7da30900bb047038d31acd568b7e97d.html

National Institute for Excellence in Teaching. (n.d.). *The TAP System for Teacher and Student Advancement*. NIET: National Institute for Excellence in Teaching. Retrieved October 28, 2022, from https://www.niet.org/our-work/our-services/show/the-tap-system-for-teacher-and-student-advancement

Pham, L. D., Nguyen, T. D., & Springer, M. G. (2021). Teacher Merit Pay: A Meta-Analysis. *American Educational Research Journal*, *58*(3), 527–566. https://doi.org/10.3102/0002831220905580

Ritter, G. W., & Barnett, J. H. (2016). Learning on the job: Teacher evaluation can foster real growth. *Phi Delta Kappan*, *97*(7), 48–52. https://doi.org/10.1177/0031721716641649

Ronfeldt, M., Farmer, S. O., McQueen, K., & Grissom, J. A. (2015). Teacher Collaboration in Instructional Teams and Student Achievement. *American Educational Research Journal*, *52*(3), 475–514. https://doi.org/10.3102/0002831215585562

Sorensen, L. C., & Ladd, H. F. (2020). The Hidden Costs of Teacher Turnover. *AERA Open*, *6*(1), 2332858420905812. https://doi.org/10.1177/2332858420905812

Torres, D. G. (2019). Distributed leadership, professional collaboration, and teachers' job satisfaction in U.S. schools. *Teaching and Teacher Education*, *79*, 111–123.

Tuytens, M., & Devos, G. (2017). The role of feedback from the school leader during teacher evaluation for teacher and school improvement. *Teachers and Teaching*, *23*(1), 6–24. https://doi.org/10.1080/13540602.2016.1203770

Voogt, J. M., Pieters, J. M., & Handelzalts, A. (2016). Teacher collaboration in curriculum design teams: Effects, mechanisms, and conditions. *Educational Research and Evaluation*, *22*(3–4), 121–140. https://doi.org/10.1080/13803611.2016.1247725

Wenner, J. A., & Campbell, T. (2017). The Theoretical and Empirical Basis of Teacher Leadership: A Review of the Literature. *Review of Educational Research*, *87*(1), 134–171. https://doi.org/10.3102/0034654316653478

# Appendix: Methodology

**Data Sources**

The study includes data from the pre-grant year, 2018-19, and three grant years, 2019-20, 2020-21, and 2021-22. Teacher SKR scores are recorded in either NIET's or the partner district's data management system. Data for matching schools and student performance results are obtained from publicly available data sources on the Indiana Department of Education website.

**Measures**

Instructional Skills. Skills, Knowledge, and Responsibility (SKR) scores measure a career teacher's instructional skills. The scores are obtained through multiple teacher observation ratings by administrators and teacher leaders certified in using the NIET Teaching and Learning Standards Rubric. A weighted average of observation ratings and responsibility indicators creates an overall, end-of-year SKR score for each career teacher. The SKR scores range from a 1.0 (unsatisfactory performance) to 5.0 (exemplary performance) in half point increments. An overall score above a fixed benchmark (3.0 for this study) signifies an effective performance; scores below the benchmark indicate a less than effective performance.

The average SKR scores are examined across the grant years to assess improvement in instructional skills. The analyses include teachers who appear on personnel rosters, that is, those who were retained by their districts, and received SKR scores throughout the grant period.

Student Achievement. Student achievement is based on the percentage of students proficient or above (i.e., percentage passing) on the grades 3-8 Indiana state assessments in English language arts (ELA) and mathematics. These data are publicly available on the Indiana Department of Education website.

The comparison schools are selected using propensity score matching (PSM). PSM is a quasi-experimental method that uses statistical techniques to construct an artificial comparison group by matching each treatment unit (i.e., the Indiana TSL partner schools) with a comparison unit of similar characteristics. Using these matches, the impact of the TAP System is estimated by comparing average student performance between the Indiana TSL schools and the matched comparison schools. For this study, the percentage of students passing the state assessments, the percentage of students qualifying for free or reduced-price lunch, the percentage of English learners, and the percentage of students in special education were the characteristics used to determine a comparison group of schools. Additionally, the matched schools (a TSL school and its matched comparison) had to have the same tested grades in 2018-19.

Among the Indiana TSL partner schools, 27 have grades 3-8 state assessment results. One school had tested grades that produced no corresponding match among the comparison schools. The PSM matching is done without replacement, meaning each TSL school is uniquely matched with a comparison school, resulting in a total matched sample of 52 schools (26 TSL schools and 26 comparison schools).

Figure 2 shows the average percentage proficient or above for the TSL schools and the comparison schools for two grant years (2020-21 and 2021-22). To analyze whether the differences between the average percentage proficient of two groups are statistically and practically significant, independent samples *t*-tests and adjusted Hedge's *g* effect sizes are computed.

NIET | NATIONAL INSTITUTE FOR EXCELLENCE IN TEACHING


Website:
www.niet.org

Contact:
1-800-575-NIET

Address:
7333 E. Doubletree Ranch Road
Suite 250
Scottsdale, AZ 85258



The contents of this report were developed under a grant from the U.S. Department of Education. However, the contents do not necessarily represent the policy or endorsement of the U.S. Department of Education.