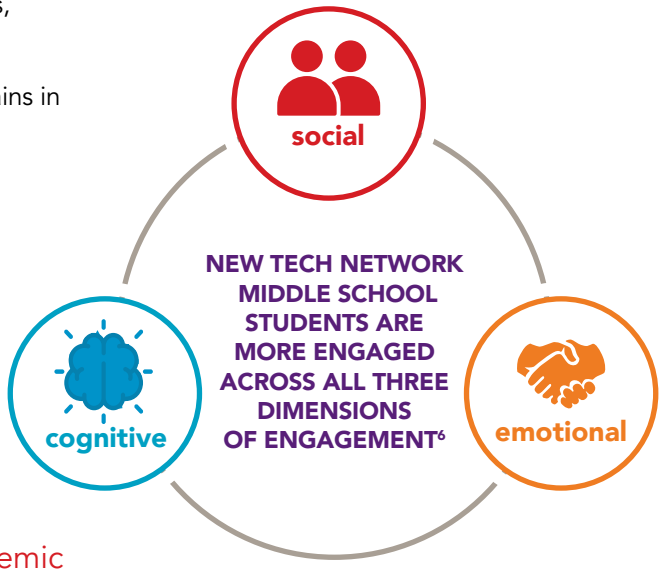
EVIDENCE OF NEW TECH NETWORK IMPACT: SUMMARY REPORT

NEW TECH NETWORK STUDENTS HAVE A RIGOROUS ACADEMIC EXPERIENCE AND OUTPERFORM NON-NTN STUDENTS

NEW TECH NETWORK (NTN) STUDENTS

NTN students outperform non-NTN students and demonstrate workforce readiness skills.[1] **New Tech Network students**:

- outperformed on SAT/ACT[2], and state exams[3] in English, Math, Biology, English Language Arts, and Algebra
- made statistically significant gains in critical thinking[4]
- report stronger instructional methods[5] than non-NTN students



Middle school is pivotal in establishing a strong academic pipeline because disengagement from school that leads to dropping out often begins in middle school. Increased student engagement has been demonstrated to increase the likelihood of graduating high school and enrolling in college.[7]

Statistically significant survey **results demonstrate that NTN students are more engaged in**[8]:

- innovative technology use in their classrooms
- investigations of real-world problems
- communicating to external audiences
- peer feedback and collaboration
- data analysis

NEW TECH NETWORK SCHOOLS

NTN schools have **higher 4-year high school graduation rates**,[9] and students **demonstrate college and career readiness success**.

New Tech Network **PBL enables increased access and opportunity** for underrepresented STEM students.[10]

NEW TECH NETWORK PROFESSIONAL DEVELOPMENT AND COACHING ENABLES NTN EDUCATORS TO BUILD AND REINFORCE KNOWLEDGE[11]

NTN PROFESSIONAL DEVELOPMENT AND COACHING

New Tech Network professional development and coaching enables professional growth that challenges the established "rhythm" of schooling, and **requires reflection on beliefs, values, identity, and mindsets**.[12]

New Tech Network professional development and coaching:

- enables authentic elementary **student learning environments**[13]
- **supports and sustains** adult shifts over time
- provides consistent **high quality** virtual and in-person adult **learning experiences**[14]
- provides **specific benifits, including**:
  - Project creation
  - Tools and resources
  - Application to practice

> "While learning may represent the acquisition of new knowledge, growth implies the transformation of knowledge into the development of the individual. Growth is qualitative change, movement to a new level of understanding, the realization of a sense of efficacy not previously enjoyed."[15]

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REFERENCES AND STUDY NOTES

Ancess, J. and Kafka, T. (2020). Bells Elementary School's Journey of Change: A Beacon of Light on the I-95. New York, NY: National Center for Restructuring Education, Schools and Teaching

- NTN elementary case study

Barnett, E., Kafka, T., and Kim, J. (2020). Adult Learning in the New Tech Network's SCLN Project. New York, NY: National Center for Restructuring Education, Schools and Teaching.

- Mixed methods study using an extensive literature review, interviews, surveys, observations of events, and document analysis

Bergeron, L. (2017, February). Examining Student Outcomes in New Tech Network Title 1 Eligible Schools. Paper presentation at the annual conference of the Eastern Educational Research Association, Richmond, VA.

- Quantitative analysis using National Student Clearinghouse data for ten NTN schools

Bergeron, L. (2019, February). Reconsidering research paradigms: using Texas End of Course performance to evaluate innovation in EPISD. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.

- Percentage of students who met standard in each of the three performance bands were compared using chi-squared testing.

Bergeron, L. and Bogdan, C. (2019a). End of course outcomes in Texas. Internal Report. New Tech Network, Napa, CA.

- A chi-square test of independence was performed to examine the relationship between the intervention and EOC performance.

Bergeron, L. and Bogdan, C. (2019b). Critical thinking and end of course findings: An exploration of practical significance and statistical significance. Internal Report. New Tech Network, Napa, CA.

- Change over time was evaluated for statistical significance using the GLM function in SPSS for Repeated Measures comparing pre- and post-test scores.

Bergeron, L., Boesche-Taylor, B., Gehrke, A., Dugan-Knight, M., Kamdar, S., Vorse Wilka, J., and Gittens, C. (2019, March). A multifaceted examination of deeper learning in PBL elementary schools: school culture, critical thinking, and access to opportunity. Paper presented at the annual meeting of the Society for Research on Educational Effectiveness, Washington, DC.

- Explanatory quantitative case study research design using the Insight Assessment Educate Series (formerly the California Critically Thinking Skills Test) for 4th grade with testing for statistical significance in the change scores and the Youth Truth Student Experience Survey for grades 3–5 with comparative analysis using ordinal regression.

Bergeron, L., Boesche-Taylor, B., and Bogdan, C. (2021, April). Quality assurance and network activation: a network approach to professional development evaluation. Paper presentation at the annual conference of the American Educational Research Association, virtual.

- Mixed methods survey research study

Blafanz, R., Fox, J., Bridgeland, J., and McNaught, M. (2009). Grad nation: A guidebook to help communities tackle the dropout crisis. America's Promise Alliance (NJ1).

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Fredricks, J. A., Blumenfeld, P. C., and Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. Review of Educational Research, 74, 59–109

Gordon, M. and Bergeron, L. (2018, November). Using Different Data Sources to Address the Same Research Questions: Evaluating the Effectiveness of New Curriculum on Student Outcomes. Presentation at the California Education Research Association annual meeting, Anaheim, CA.

- Quantitative case study

Hernández, L. E., Darling-Hammond L., Adams, J., and Bradley, K. (with Duncan Grand, D., Roc, M., and Ross, P.). (2019). Deeper learning networks: Taking student-centered learning and equity to scale. Palo Alto, CA: Learning Policy Institute.

- Multisite nested case study approach using exemplar cases

Hinnant-Crawford, B. (2020). New Tech Network Comparative Analysis: Academic Outcomes in Texas Addendum. Cullowhee, NC: Western Carolina University.

- Secondary data analysis with OLS Regression and multi-level modeling (9 NTN, 53 non-NTN schools) was used to estimate the impact of New Tech Network on academic student outcomes.

Hinnant-Crawford, B. and Virtue, E. (2019). New Tech Network Comparative Analysis: Non-Academic Outcomes in Three States. Cullowhee, NC: Western Carolina University.

- Concurrent triangulation mixed method design collected site visit and survey data from nine schools (5 NTN/4 non-NTN) and 253 students (NTN =149/Non-NTN 105).

Lynch, S. J., Peters Burton, E., Behrend, T., House, A., Ford, M., Spillane, N., Matray, S., Han, E., Means, B. (2018). Understanding Inclusive STEM High Schools as Opportunity Structures for Underrepresented Students: Critical Components. Journal of Research in Science Teaching, 55, 712, 748

- Multiple instrumental case study with subsequent cross case analysis

Muller, P. and Hiller, S. (2020). Potential Impacts of the New Tech Network (NTN) Middle Grades Education Experience on Student Non-Academic Outcomes. Internal report. Center for Evaluation, Policy, and Research.

- Mixed methods and comparative multi-case study design

Orthner, D. K., Cook, P., Rose, R., and Randolph, K. A. (2002). Welfare reform, poverty, and children's performance in school: Challenges for the school community. Children and Schools, 24, 105–121

Stocks, E., Odell, M., and Culclasure, B. (2019, April). The Effect of the New Tech Network Design on Students' Academic Achievement and Workforce Skills. Paper presentation at the annual conference of the American Educational Research Association, Toronto, Canada.

- Quasi-experimental design (QED)

Trobst, S., Kleickmann, T., Lange-Schubert, K., Rothkopf, A., Moller, K., Troebst, S., and Moeller, T. (2016). Instruction and Students' Declining Interest in Science: An Analysis of German Fourth- and Sixth-Grade Classrooms. American Educational Research Journal, 53(1), 162–193.

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[3] Bergeron, 2019; Gordon and Bergeron, 2018; Lynch et al., 2018; Bergeron, 2019; Bergeron and Bogdan, 2019a; Stocks, Odell, and Culclasure, 2019; Hinnant-Crawford, 2020
[4] Bergeron and Bogdan, 2019b; Bergeron, et al, 2019
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[7] Trobst, et al, 2016; Orthner, Cook, Rose, and Randolph, 2002; Blafanz, Fox, Bridgeland, and McNaught, 2009; Fredricks, Blumenfeld, and Paris, 2004
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[9] Gordon and Bergeron, 2018; Bergeron, 2017
[10] Bergeron, 2017; Gordon and Bergeron, 2018; Lynch, Peters Burton, Behrend, House, Ford, Spillane, Matray, Han, Means, 2018; Stocks, Odell, and Culclasure, 2019, Bergeron, 2019
[11] Hernández, Darling-Hammond, Adams, and Bradley, 2019
[12] Barnett and Kim, 2020
[13] Ancess and Kafka, 2020
[14] Bergeron, 2019; Bergeron, Boesche-Taylor, and Bogdan, 2021
[15] Duke, 1993