



Yale-New Haven Teachers Institute

The Teachers Institute Approach: University-School Partnerships to Provide Intensive Teacher Professional Development

Ellen Eliason Kisker

Twin Peaks Partners, LLC

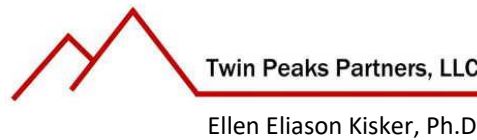
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Contents

Executive Summary	i
The Teachers Institute approach is straightforward and well-specified.	1
Teachers Institutes incorporate most of the features of high-quality teacher professional development.	3
The Teachers Institute theory of change shows how founders designed the program to improve teaching and learning.	4
From the beginning, the program has collected data to monitor the program and outcomes.	4
Annual data collected by the YNHTI constitute a rich record of participants’ experiences.	5
Annual data collected from faculty seminar leaders capture their experiences and perspectives.	6
Special studies of curriculum unit use provide a deeper understanding of program outcomes.	6
More rigorous evaluation has been investigated, but design challenges have so far posed an insurmountable challenge.	6
For many years, the Yale-New Haven Teachers Institute has addressed limitations in the professional development offered by district schools.	7
Teacher leaders help ensure that the Teachers Institute meets teachers’ needs.	7
Collegiality and support have consistently enriched teachers’ experiences in Teachers Institute seminars.	8
Curriculum units written in Institute seminars ensure that teachers’ learning reaches their students.	9
Curriculum units cover all core subject areas and grades and incorporate deeper learning strategies.	9
Most Institute curriculum units are clearly written, accurate, and usable by another teacher.	10
Nearly all Fellows use their Institute curriculum units.	10
Other teachers use Institute curriculum units too.	11
Fellows almost universally agreed that they benefitted in a variety of ways from their Institute participation.	11
Teachers Institutes may increase teacher retention rates.	12
Fellows expect Institute curriculum units to increase student engagement in learning and mastery of unit materials and to contribute to higher student achievement.	12
Unit activities, tailored content, and teacher enthusiasm and preparation engage students.	13
Fellows observe better learning and achievement along with higher student engagement.	14
Many faculty also report experiencing benefits from leading Institute seminars.	14
Implementation of the Teachers Institute model over time and across locations demonstrates its replicability.	15

Consistency in program experiences and outcomes over time suggest that the Teachers Institute approach can succeed under a variety of conditions.	15
The successful implementation of Teachers Institutes in other locations further demonstrates program replicability.	15
The YNHTI demonstrates the important contribution that university-school partnerships can make to teaching and learning.	16
APPENDIX A: Teachers Institute Programs	17
APPENDIX B: Overview of Research	18
Acknowledgments	19
Endnotes	19

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Executive Summary

What is a Teachers Institute?

- A **school district-university partnership** that **offers intensive seminars** in which:
 - University faculty bring content expertise and K-12 teachers bring knowledge of students to learn about topics that teachers themselves have identified as useful to their teaching.
 - Each teacher writes a curriculum unit on some aspect of the seminar topic, with the support of colleagues and the seminar leader, to teach to their students in the following year.
 - Admission is not selective, but teachers must commit to full participation with principal verification that they will be able to teach their curriculum unit.
 - New and long-serving teachers from all grade levels, core subject areas in the humanities and STEM, and multiple schools participate.
- **Teacher leadership and collegial relationships** among teachers and faculty are fundamental to the approach.
- An Institute includes **features of high-quality teacher professional development programs**: alignment with district and school goals and standards; a focus on content knowledge and how to teach it; involvement of teachers as active learners; collegial exchange of ideas and sharing of expertise among teachers and faculty; and long duration with substantial involvement in seminar sessions, meetings, research, and curriculum writing.

What benefits does this approach have?

- Almost all participating **teachers experience important benefits**:
 - Professional and intellectual growth; professional respect
 - Stronger knowledge of the seminar subject and confidence in teaching it
 - Collegial relationships with teachers from other district schools
 - New opportunities for leadership and motivation to pursue leadership opportunities in the district
- Teachers develop **higher expectations of their students' ability to learn the unit subject**:
 - The curriculum units include more deeper learning strategies than the teachers' usual teaching.
 - Teachers expect their units to **increase student engagement** in learning and mastery of unit materials and to contribute to higher student achievement.
- **Curriculum units are well-received and extend the benefits** of a Teachers Institute:
 - Units are published and used by other teachers.
 - According to teachers who use them, Institute curriculum units elicit the same or greater student attention, interest, and motivation as commercial units, and lead to the same or higher student mastery.
 - Faculty reviews indicate that the curriculum units are accurate and range from acceptable to exceptional quality.
- Participating **faculty also experience benefits**:
 - Improvements to their own teaching or scholarship
 - Greater understanding of local schools and the challenges confronting teachers and students
 - An opportunity to share their expertise with their community
- For school districts and university partners, these benefits contribute to **improved teaching, higher teacher morale and retention, and stronger connections between the university and local public schools**.

Can the Teachers Institute approach be implemented successfully in other communities?

- The Teachers Institute approach is well-defined in **published understandings and procedures**.
- Consistency in program experiences and outcomes in New Haven over decades suggests that the approach **can succeed under a variety of conditions**.
- **Successful implementation in other locations** further demonstrates program replicability.
 - Institutes are more likely to be sustained when they continue to adhere to the understandings and procedures of the approach.

The Teachers Institute Approach: University-School Partnerships to Provide Intensive Teacher Professional Development

by
Ellen Eliason Kisker, Ph.D.¹

The Yale-New Haven Teachers Institute (YNHTI) pioneered an approach to teacher professional development that is intensive, focuses equally on enhancing content knowledge and developing approaches to teaching the content, involves teachers in leadership roles, and operates through partnerships between school districts and universities. The Yale National Initiative (YNI) is dedicated to disseminating and supporting this model of teacher professional development.

When the YNHTI began providing teacher professional development in 1978, concern about the condition of secondary education, especially in urban public schools, was widespread. Declining test scores and the poor preparation of many graduates for college or the workforce had eroded public confidence in schools. School administrators were facing changing expectations, difficult social problems, and shortages of qualified teachers. In response to these issues, the YNHTI was established as a partnership between Yale University, an institution with a self-interest in improving both local schools and secondary education throughout the country, and New Haven Public Schools, a district serving a high proportion of disadvantaged minority students with high levels of absenteeism and dropout.²

The partnership's primary goal was, and is, to strengthen teaching and learning in New Haven's public schools while also providing university faculty with meaningful opportunities for service. Four principles guided the development of the YNHTI: (1) the classroom teacher and teacher-developed materials are fundamentally important for effective learning; (2) teachers of students at different levels need to interact as colleagues, addressing the common problems of teaching in their discipline; (3) any effort to improve teaching must be "teacher-centered" and involve teachers as leaders; and (4) the university can assist in improving public schools only if it makes a significant and long-term commitment to do so.³ Reflecting Yale's commitment, the partnership is permanently endowed as a unit of the university, and the program continues to provide teacher professional development.

From its inception, the YNHTI has collected data and conducted descriptive analyses to inform its work. This report focuses primarily on the YNHTI and summarizes results from this research and what has been learned from the YNHTI's experiences over time. Some research included in this overview has included additional Teachers Institute programs, as noted in subsequent sections. Appendix B describes the elements and timing of the research that has been conducted.

The Teachers Institute approach is straightforward and well-specified.

The essential features of the Teachers Institute approach are described in the understandings and procedures laid out in *The Teachers Institute Approach*.⁴ Public school districts, in partnership with one or more universities and colleges, form Teachers Institutes that offer collegial seminars led by faculty on topics that teachers themselves have identified as important to their work. Teachers of core subjects are selected for Teachers Institutes based on a fit between their professional development interests and the seminars offered, not on prior preparation or writing skills. Seminar schedules vary across Institutes, but typically seminars meet weekly over a period of several months. In the seminars, the faculty seminar leader guides participating teachers (named Fellows) in learning about the seminar topic, and the Fellows develop curriculum units on some aspect of the topic to use with their students. Fellows in each seminar are considered professional colleagues and support each other in developing ways to teach the topic. The curriculum units are published online for other teachers to use. Fellows receive a stipend and faculty are compensated for their work in the Teachers Institute.

At the heart of the Teachers Institute approach is a set of seminars on topics in the humanities and sciences. The topics are determined by an iterative process beginning with Teacher Representatives (teacher leaders within

participating schools) who canvass their colleagues for suggestions of topics that could enrich their classroom instruction. Program leaders seek proposals for seminars on these topics from university faculty. Eventually, program leaders and Teacher Representatives select a set of three-to-five seminars that best address teachers' needs.

The admission of teachers into the Teachers Institute is not selective; however, teachers who apply to become Fellows commit to full participation by attending all meetings, researching the seminar subject and unit topic, and meeting all deadlines in preparing a curriculum unit. Any K-12 teacher of a core subject (English and language arts, history and social studies, the arts, languages other than English, science, and mathematics) whose principal certifies that the applicant will be assigned to a classroom in which they can teach a curriculum unit on the planned topic may apply. Because the interactive, iterative process of determining seminar topics results in seminars designed to meet the demand for them, all applicants with principal support are accepted into their first or second choice of a seminar.

The teachers accepted into each YNHTI seminar are a diverse group. Seminars typically include teachers from all grade levels, several subject areas, and multiple schools, which promotes articulation of curriculum throughout the school system as well as interdisciplinary teaching and curriculum.⁵ Fellows include relatively new teachers as well as long-serving teachers still committed to improving their teaching. When asked about the Fellows in their seminar, seminar leaders have also commented on their diversity along other dimensions, including their skills and interests, preparedness, prior knowledge, writing ability, and dedication to seminar tasks.

The YNHTI is committed to reaching as many district teachers as possible, and typically, one third to one half of participating teachers each year are participating for the first time. The veteran Fellows in each seminar often support first-time participants in meeting program requirements.

The seminars are intensive. Fellows are required to attend 13 two-hour meetings of their seminar, including a meeting in both March and April and 11 weekly meetings between early May and mid-July. In addition, Fellows are required to attend four talks by Yale faculty members on topics related to current or potential Institute seminars. These talks are designed to stimulate thought and discussion and highlight interdisciplinary relationships in scholarship and teaching. The YNHTI also offers two workshops presented by veteran Fellows on curriculum unit development. These workshops present the Institute's curriculum unit guidelines along with examples of approaches to writing and teaching a curriculum unit. Fellows also spend considerable time working on their curriculum units, and they meet individually with their seminar leader at least twice to discuss their unit.

The seminars focus on both content knowledge and approaches to teaching the content, and they support Fellows in writing a curriculum unit on some aspect of the seminar topic. The curriculum units ensure that Fellows take some part of what they are learning in their seminar into their classroom and provide a way for Fellows to share what they have learned with colleagues. The curriculum units are published electronically and available to other teachers on the YNHTI web site, and they are also printed and deposited in those schools that maintain a collection of units.

Curriculum unit guidelines define the required elements of the curriculum units and guide the writing process. The elements prescribed in the guidelines include an essay presenting the content to be taught and planned pedagogical strategies, several examples of lesson plans, an annotated bibliography, and an appendix describing the standards that the curriculum unit addresses. The guidelines are accompanied by mechanical specifications for formatting the final unit for publication.

Because program leaders view the curriculum unit writing process as key to increasing content knowledge and improving teaching skills, the guidelines define a process in which units are developed in stages over time with comments from seminar leaders and other Fellows. Writing the units in stages also makes their completion more manageable for many Fellows.

The curriculum unit guidelines set limits on the curriculum units to keep the scope of work manageable. The guidelines require authors to include only a few examples of teaching methods or lesson plans, and they do not require authors to provide complete lesson plans. Such an expectation would detract from the focus on enhancing

content knowledge. In addition, the guidelines place a word limit on curriculum units and limit printed copies of units to 25 single-spaced pages. As a result, the curriculum units written in the YNHTI are not structured like commercial curriculum units.

Each seminar is led by a Yale faculty member and supported by a veteran Fellow (named as Coordinator). The seminar leader is primarily responsible for presenting the seminar content, discussing how knowledge on the topic is acquired and transmitted, and sharing related pedagogical strategies. Depending on the seminar topic, the seminar leader may introduce Fellows to university laboratory facilities or museums, and all Fellows receive access to the Yale University library during the seminar. The seminar leader also advises Fellows on the development of their curriculum units. The Seminar Coordinator, a Fellow who has participated before and is familiar with the seminar format and process, handles administrative details, supports Fellows who need assistance with their curriculum unit, and promotes collegiality in the seminar.

Seminar leaders are a diverse group. Between 1978 and 2021, 128 Yale faculty have served as seminar leaders. Slightly more than one third of these faculty conducted seminars in more than one year of the YNHTI. Approximately 60% were faculty in humanities fields, while about 40% were faculty in science, technology, engineering, and mathematics (STEM) fields. Almost all were tenured senior members of the Yale faculty. Nearly two thirds held the rank of professor (some held endowed chairs or were the chairperson of their department), while one third were assistant or associate professors.

The seminars assume that teachers can engage in serious study of the field and are designed to be collegial. The faculty seminar leader and the Fellows in the seminar are considered professional colleagues whose contributions to the seminars are equally important. Seminar leaders bring their knowledge of the seminar topic, and Fellows bring their knowledge of the classroom and relevance of the seminar topic to their teaching. Seminar leaders are discouraged from lecturing and encouraged to facilitate the exchange of ideas and sharing of expertise.

As this overview of the program shows, teacher leaders are essential to the YNHTI. Teachers Institutes are planned, implemented, and sustained by teachers. Each Institute seminar topic is suggested by teachers based on what they think will enrich their classroom instruction. Teachers recruit their colleagues to participate, and one teacher in each seminar plays a coordinating role as described above.

In recognition of the intensive and professionally significant nature of participation, both faculty seminar leaders and Fellows receive some remuneration. Fellows receive a stipend upon completion of their curriculum unit and satisfaction of other requirements (including completion of a questionnaire about their program experiences). Faculty receive one month's salary (one ninth of their academic year salary).

Teachers Institutes incorporate most of the features of high-quality teacher professional development.

Educators and researchers have identified features of high-quality teacher professional development. The National Comprehensive Center for Teacher Quality identifies five features, based on the research literature and best practices: (1) alignment with school goals, state and district standards, and other professional learning activities; (2) focus on core content and modeling of teaching strategies for the content; (3) inclusion of opportunities for active learning of new teaching strategies; (4) provision of opportunities for collaboration among teachers; and (5) inclusion of embedded follow-up and continuous feedback.⁶ More recently, Darling-Hammond et al. (2017) examined rigorous studies of teacher professional development programs that demonstrated positive effects on teaching practices or student outcomes to identify common features of these programs.⁷ They found that effective teacher professional learning includes most or all of seven widely shared program features: (1) a focus on teaching strategies associated with specific curriculum content; (2) active learning to engage teachers directly in designing and trying out teaching strategies; (3) support for teachers to share ideas and collaborate in their learning; (4) use of curricular models and modeling of instruction to show teachers what best practices look like; (5) sharing of expertise about content and evidence-based practices, focused directly on individual teacher needs; (6) built-in time for teachers to think about, receive input on, and make changes to their practice by facilitating reflection and soliciting feedback; and (7) sustained duration.

The Teachers Institute approach encompasses many of these recommended best practices: (1) each Teachers Institute is aligned with school reform goals and is designed to support a district's strategic plan, and the curriculum unit each teacher develops is aligned with state and local standards; (2) Institute seminars deepen teachers' knowledge of core subjects and assist them in developing strategies to teach their own students what they have learned; (3) teachers are active learners in Institute seminars, receiving feedback from their peers and often trying out the units with their students as they prepare them; (4) the collegial exchange of ideas and sharing of expertise among school teachers and university faculty members lies at the very center of Institute seminars and is a tenet of the Institute approach; and (5) Institute seminars are of substantial duration, involving a minimum of 26 hours in session plus substantially more time for meeting with seminar leaders, researching seminar topics, and writing curriculum units.

The Teachers Institute theory of change shows how founders designed the program to improve teaching and learning.

The Teachers Institute theory of change identifies the immediate products, intermediate outcomes, and longer-term outcomes that are expected when the Teachers Institute program is implemented as intended (Figure 1). The immediate products of Institute seminars are the curriculum units written by teachers in the seminars and the professional recognition and university privileges that Fellows receive. By writing curriculum units in a collegial setting with other teachers and a university faculty leader, Fellows are expected to increase their content and pedagogical knowledge, which is expected to improve instruction and enhance student engagement in learning, which will improve student learning of the seminar topic and contribute to improved student achievement. Working with colleagues and university faculty in the seminar and the recognition and privileges that participants receive are expected to increase teacher leadership in their district, improve teacher morale, and promote greater teacher collegiality and collaboration. These improvements, in turn, are expected to promote greater teacher retention and performance, which contribute to improved student achievement. Finally, the university faculty who lead seminars are expected to experience improvements to their own teaching and scholarship, as well as develop a greater disposition to contribute to public education. The pathways identified in the theory of change are supported by research and data collected by the program.⁸

The theory of change also has a longitudinal dimension that is difficult to illustrate but crucial for understanding the potential impact of Teachers Institutes. Over time a significant proportion of district teachers will participate, and some teachers will participate in multiple years. In New Haven, for example, during the period from 1992 to 2021, 561 teachers participated. Half had participated once, nearly one quarter had participated twice, and slightly more than one quarter had participated more than twice.⁹

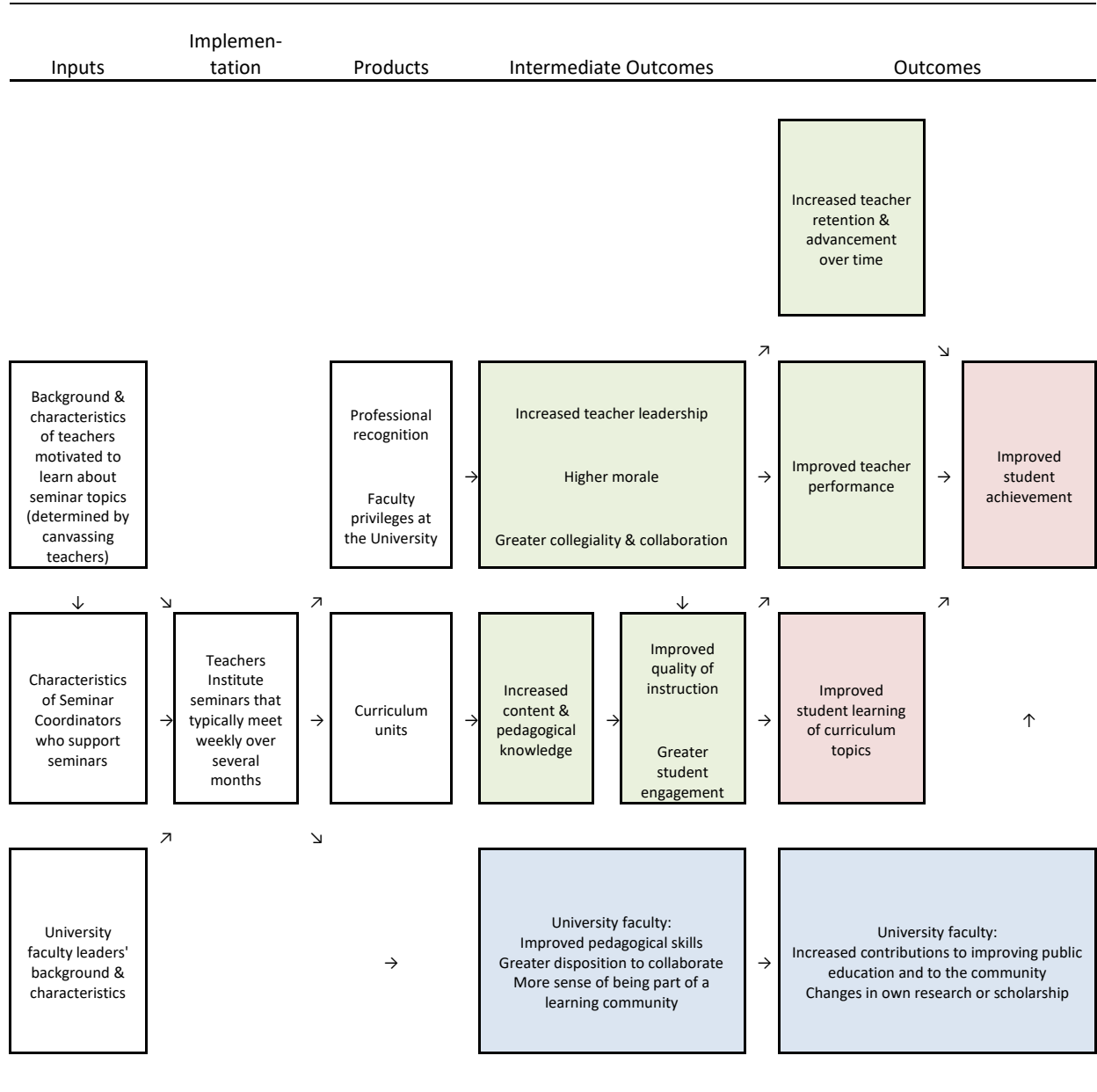
Teachers Institutes support teacher retention, and higher teacher retention compounds the benefits for students over time. Teachers who stay continue to use Institute-developed curriculum units and apply their enhanced knowledge and classroom practices in teaching future cohorts of students. They provide leadership and continue to foster collaboration and higher morale and collegiality among teachers.

Curriculum units are available for use by other teachers, further extending the potential effects of the Teachers Institute seminars. While the extent of unit use by other teachers remains uncertain, a 2016-17 survey of New Haven teachers estimated that 11% of other teachers had used Institute units. A pop-up survey of website users over 17 months identified thousands of teachers across the country and around the world who had used or planned to use Institute curriculum units they found online.¹⁰

From the beginning, the program has collected data to monitor the program and outcomes.

The YNHTI and the YNI have a long history of conducting research to inform implementation of Teachers Institutes. In addition to annual surveys of participating teachers and annual feedback from seminar leaders, special studies of curriculum unit use have explored in detail the extent to which and ways in which the curriculum units written in program seminars fulfill their expected role in program implementation and outcomes. Key findings from descriptive analyses of data from these sources are presented in subsequent sections of this report.

Theory of Change for Teachers Institutes



Annual data collected by the YNHTI constitute a rich record of participants' experiences.

The YNHTI has long collected data with which to assess the program. From 1978 to 1985, Fellow questionnaires, consisting primarily of open-ended questions, were administered at the end of annual seminars. Beginning in 1986, the Fellow questionnaires have contained both fixed-choice and open-ended questions. The fixed-choice questions were developed from previous open-ended questions to which possible answers had become predictable. Prior to 2014, Fellows completed the questionnaire on paper. Starting in 2014, the questionnaire was expanded and administered online using Qualtrics. For a core set of questions, data are available for three decades (1992-2021). For an additional set of questions, data are now available for eight years (2014-2021).

The unit of analysis in the longitudinal data is the Fellow-seminar combination; that is, Fellows are represented in the data each time they participated in a seminar and completed a Fellow questionnaire. Altogether, the data

include 561 different Fellows and 1,350 instances of Fellow participation. Individual Fellows participated in 1 to 19 seminars between 1992 and 2021. Because Fellows are required to complete the Fellow questionnaire to receive their stipend, the data include all Fellows who completed their seminar.

Annual data collected from faculty seminar leaders capture their experiences and perspectives.

At the conclusion of each year's seminars, the YNHTI seminar leaders are asked to evaluate their experience by responding to a set of open-ended questions. These questions seek seminar leaders' observations about the Fellows in their seminar, their seminar approach and format, balance in their seminar between general study of the seminar topic and individual curriculum unit development, soundness of curriculum units written in their seminar, their experiences participating in the seminars and advice for new seminar leaders, and the benefits they received from leading a YNHTI seminar.

Analyses of the YNHTI seminar leader evaluations from a 15-year period (2007-2021) are described in this report. Over this period, 44 Yale faculty members led 57 seminars. Most of these faculty members led one seminar, but one fifth of them led more than one (two to four seminars).

Special studies of curriculum unit use provide a deeper understanding of program outcomes.

Because curriculum units written by Fellows are the primary way in which the YNHTI is likely to improve teaching and learning, in-depth data on curriculum unit use have periodically been collected to augment the Fellow questionnaire data. In 1982 and 1987, structured questionnaires were administered district-wide to Fellows, former Fellows, and other New Haven teachers who may have used Institute curriculum units. Most recently, 2015 and 2016 Fellow questionnaire data were augmented with data from three other sources for a study focused on curriculum unit features and use: (1) a survey of website users, (2) an online survey of teachers in New Haven Public Schools, and (3) focus groups with Fellows and other teachers who had used YNHTI curriculum units.^{11,12} Unlike the Fellow questionnaire data that include all Fellows who completed seminars, the special surveys of teachers and website users did not achieve high response rates, and the focus groups included a small number of Fellows and other teachers. The special surveys faced difficulties obtaining complete lists of teachers and contact information, and because Institute curriculum units were available in a variety of ways (in print at school repositories and online), teachers may not always have known that curriculum units they were using were Institute units. Although findings based on these data cannot be generalized and must be considered exploratory, they currently provide the best available in-depth information about unit use by Fellows and others.

More rigorous evaluation has been investigated, but design challenges have so far posed an insurmountable challenge.

While the importance of demonstrating program impacts has increased over time, some aspects of the YNHTI's approach to teacher professional development limit the feasible research designs and present challenges for measuring some important outcomes.¹³ Because the development of seminars and recruitment of teachers are closely intertwined, random assignment of teachers would alter the program in important ways. Random assignment of larger units (schools or districts) or a matched comparison group design might address this issue but would be difficult to implement except when a new Teachers Institute is beginning. Achieving adequate statistical power to detect meaningful impacts might be difficult unless a district has many schools willing to participate and funds for a large data collection effort are available. And because Teachers Institute curriculum units are published online, spillover of effects to comparison group teachers is a potential source of bias in impact estimates.

Measuring student outcomes also presents a challenge for evaluation of the Teachers Institute approach. Institute seminars and the resulting curriculum units address a range of specific topics. Existing student achievement tests, however, measure overall achievement and are very unlikely to be sensitive to changes in student learning of specific topics. The wide range of seminar topics and grade levels addressed in curriculum units also make developing topic and grade level specific tests for an evaluation unrealistic.

For many years, the Yale-New Haven Teachers Institute has addressed limitations in the professional development offered by district schools.

The Teachers Institute provides professional development that addresses limitations that New Haven teachers report facing in their work. It does so by involving teachers in determining seminar topics, supporting them in writing a curriculum unit on their seminar topic, and paving the way for them to teach the unit they develop. Many Fellows have felt that they had little or no control in their school over key aspects of their planning and teaching. In recent years, approximately one quarter of 2014-2020 Fellows reported having minor or no control over selecting content, topics, and skills to be taught or selecting textbooks and other instructional materials.

Many recent Fellows have reported limitations in the professional development available to them. Half of 2014-2020 Fellows reported having a small role or no role at all in determining the content of their in-service professional development. More than one third of 2014-2021 Fellows disagreed that their school provides professional development that

deepens content knowledge. Only slightly less than half had participated in content-focused professional development that extended to more than two sessions, and few had participated in content-focused professional development that took place in eight or more sessions. In contrast, the Teachers Institute focuses on increasing teachers' content knowledge in seminars that meet weekly for several months.

The Institute seminars have consistently attracted teachers seeking to both satisfy their own need to learn and their desire to improve their teaching and engage their students. More than four fifths of 1992-2021 Fellows were motivated to participate in the Teachers Institute by the opportunity to develop materials to motivate their students and develop curriculum that fits their needs, the opportunity for intellectual stimulation, the opportunity to increase their mastery of the subject they teach, and the opportunity to work with university faculty.

The program has been highly successful in meeting Fellows' professional development needs, according to the Fellows themselves. Nearly three quarters of the 1992-2021 Fellows reported that the program overall was useful to a great extent, and most of the remaining Fellows said it was useful to a moderate extent. The success of the Teachers Institute is reflected in the high rates at which Fellows return to participate in additional seminars.

Teacher leaders help ensure that the Teachers Institute meets teachers' needs.

A hallmark of the Teachers Institute approach is leadership by participating teachers. The teacher leaders—Teacher Representatives and Seminar Coordinators—have well-defined, important roles in shaping and supporting the seminars. Consistently high ratings from Fellows show that the teacher leaders have filled their roles well.

Some Fellows served as Teacher Representatives responsible for canvassing their colleagues to learn about topics they would like seminars to address, staying in touch with prospective Fellows and

encouraging and assisting them in applying, and promoting use of curriculum units written by Fellows. As a result of their work, nearly three quarters of all Fellows between 1992 and 2021 agreed that they had sufficient opportunity to suggest seminar topics. Two thirds to three quarters of Fellows reported that their Teacher Representative was

I feel that my participation has improved my professional development in several ways: confidence with content, variety of teaching approaches, involvement in school- and district-level leadership roles. I've been observed by administrators while teaching my curriculum unit with very positive feedback. They appreciate the rigor and creativity I've been able to incorporate in my units. *2019 Fellow*

The Yale-New Haven Teachers Institute is a blessing for New Haven teachers who really care about developing new ideas and inspiration for their students that comes from content-driven study of a topic. Our school system is woefully lacking in any professional development that requires in-depth, intellectual research. But isn't this our own goal in teaching our students? I find that my past units give me confidence to push my students to do the same. I know that other teachers who participate have the same high expectations for their students. It builds a much more academically rigorous culture, something our students often seem to crave. *2020 Fellow*

Being a first year Fellow, the most valuable aspects of the seminar were having peers and the Seminar Coordinator readily available to critique my work and provide guidance and support during the writing process. *2016 Fellow*

very helpful in maintaining frequent contact, encouraging teachers to apply to the Institute, and assisting teachers in applying. It appears that over time (until the COVID-19 pandemic disrupted schools), Fellow ratings of the helpfulness of their Teacher Representative, already high, increased slightly, on average.

Some experienced Fellows served as Seminar Coordinators, assisting the seminar leader with logistics, promoting collegiality, and helping other Fellows in their seminar meet program requirements and complete their curriculum units. A consistently high proportion of 1992-2021 Fellows agreed that their Seminar Coordinator provided leadership without diminishing the collegial relationships within the seminar. More than three quarters of Fellows reported that their Seminar Coordinator was very helpful in providing information about deadlines and information about the curriculum unit guidelines.

Collegiality and support have consistently enriched teachers' experiences in Teachers Institute seminars.

When working conditions in a school are poor, teachers' experiences in the Teachers Institute seminars may help

The support of other teachers gave me confidence in my curriculum decisions. During the school year, teachers are often too busy to give feedback on each other's disciplines; the seminar allows us to work in a positive, supportive, collaborative environment. 2014 Fellow

counterbalance the conditions in their school and provide some of the support they need to remain in their current teaching position. When teachers are unable to develop strong collegial working relationships at their school, the opportunity to work with other district teachers in a Teachers Institute seminar may provide some of the professional interactions and feedback that teachers, especially new teachers, need.

Collegiality among Fellows is central to participants' experiences in the Teachers Institute. Fellows have consistently found interactions with other Fellows to be useful, and two thirds of 1992-2021 Fellows reported that these interactions were useful to a great extent. Fellows' ratings of the usefulness of their interactions with other Fellows did not decline during recent years when the COVID-19 pandemic forced seminars to meet online.

The YNHTI, through relationships with the university professors who lead seminars and by granting access to university resources, extends support for Fellows beyond their immediate program participation. Most of the 1992-2021 Fellows indicated that contact with Yale faculty members was useful to a moderate or great extent. More than two thirds of Fellows found membership in the Yale community to be useful to at least a moderate extent.

The experience professionally and personally was extraordinary. The opportunity to work with other teachers and such a gifted seminar leader was a privilege. The seminars modeled excellent instructional strategies (collaboration, discussion, demonstrations) with the delivery of high content knowledge. The seminar leader set a tone of mutuality, respect, curiosity, and appreciation of each Fellow's contribution. 2014 Fellow

The Yale University faculty members who serve as seminar leaders play a key role in sustaining the Teachers Institute over time. They consistently receive very high ratings from Fellows. Nearly all Fellows in the years from 1992 to 2021 reported that their seminar leader was useful to a moderate or great extent. In fact, more than three quarters of Fellows reported that their seminar leader was useful to a great extent. Among 2014-2021 Fellows, only a few felt they did not receive enough guidance from their seminar leader, did not have enough opportunities to meet with their seminar leader, or did not receive helpful feedback on their curriculum unit drafts.

Working with [the seminar leader] has been illuminating for me. She is so supportive and truly cares about education. [She] even came to my classroom and read to my class in order to get an idea of some of the strategies I wanted to implement in my curriculum. It was so refreshing to work with someone who is so well-established in her career but so willing to learn from a young teacher and a group of six-year-old students. 2019 Fellow

In leading Institute seminars, seminar leaders have generally succeeded in balancing the complementary and inseparable but sometimes competing demands for studying the seminar topic with developing applications of that

knowledge for the classroom. Many seminar leaders reported that the balance in their seminar between the seminar subject and the curriculum units was appropriate, but some acknowledged that more time devoted to the units would have been beneficial. More than three quarters of the 1992-2021 Fellows of the Yale-New Haven Teachers Institute agreed that in their seminar there was a good balance between general study of the seminar topic and discussion of work in progress on their units.

Curriculum units written in Institute seminars ensure that teachers' learning reaches their students.

Writing a curriculum unit helps Fellows work out how they will teach and engage their students in learning about some aspect of the seminar topic. The Teachers Institute provides written curriculum unit guidelines specifying the required contents and format of Institute curriculum units. Unlike most commercial curriculum materials, the curriculum unit guidelines require units to emphasize subject matter and teaching approaches, and the program expects Fellows not to provide complete lesson plans.¹⁴ Most 1992-2021 Fellows reported that the curriculum unit guidelines were useful to a moderate or great extent.

I was particularly interested in the topic of my unit and found great satisfaction in developing it. I look forward to teaching it in the fall and hope that it will indeed make a difference in my students' lives and in our classroom community. 2014 Fellow

The Teachers Institute requires in its application that the teacher's principal verify that the teacher's intended curriculum unit is consistent with school goals and district academic standards and that the teacher will be assigned a curriculum area or course in which to teach the unit in the coming year. Recent Fellows have most often written a unit to supplement their existing curriculum. It has not been uncommon, however, for Fellows to write a unit to fill a gap in their curriculum. The 2014-2021 Fellows were most likely to choose a topic based on its importance for their students, but some reported that the primary source of the idea for their unit arose from their students' or their own interest in the topic or their desire to do further work on a topic.

Curriculum units cover all core subject areas and grades and incorporate deeper learning strategies.

A systematic review of Institute units written in New Haven, Delaware, and Philadelphia Teachers Institutes and in YNI seminars showed that across seminars and locations, Teachers Institute curriculum units are written in all core subject areas and target students in all grades from kindergarten through 12th grade.¹⁵

I anticipate that my students will be excited about participating in this unit study; they will embrace and implement research techniques, making use of learned reading strategies to access primary and secondary source information. Students will also make text-to-self-to-world connections, learning to objectively embrace others from diverse cultures and understanding their place in the world. 2016 Fellow

I am quite certain my students will be excited with this unit as the content is something they enjoy. The hands-on activities are going to be challenging but I chose them because the students will likely be highly engaged with them. Although I try to make hands-on learning a standard in my classroom, this unit will give me more opportunities to make sure that happens. 2019 Fellow

Most curriculum units written by recent YNHTI Fellows incorporate teaching and learning strategies that promote deeper learning. 2014-2021 Fellows, who were asked about a longer list of teaching and learning strategies than earlier Fellows, most often reported using the following strategies to a great extent in their unit: asking students to generate ideas and refine them, apply facts and processes to real situations, make something, articulate ideas in writing, give and receive feedback and incorporate it into their work, and reflect on their learning. These most-included teaching and learning strategies span most of the dimensions of deeper learning (the skills and knowledge students must have to succeed in 21st century jobs and civic life) identified by the William

and Flora Hewlett Foundation.¹⁶ They include strategies to help students master core content, promote students' critical thinking and problem solving, improve students' communication, and help students learn how to learn. Working collaboratively in small groups is another deeper learning strategy identified by the Foundation that is used in many Institute curriculum units. In many cases, Fellows were more likely to report using deeper learning strategies in their Institute curriculum unit than they were to use them in their teaching more generally.

Fellows teach diverse students and usually write curriculum units designed for all of them. The classes of most 2014-2021 Fellows included special education students and students whose first language was not English. Two thirds also taught classes that included gifted students. Half of the 1992-2021 Fellows developed curriculum units for all students, ranging from the least to the most advanced students. The diversity of their students led one quarter to one third of unit authors across program locations to discuss differentiation, how to create a positive learning environment, or how to address anticipated challenges, such as frequent student absences, in teaching the unit.¹⁷

Most Institute curriculum units are clearly written, accurate, and usable by another teacher.

Teachers Institute curriculum units are written with an audience of other teachers in mind. A systematic review by teacher reviewers of units written in several Teachers Institutes and the YNI determined that 81% of the units across program locations were written clearly, and the subject matter and teaching strategies could be understood by other teachers.

Teacher reviewers found most curriculum units (87%) to be usable by another teacher. The small proportion of units found to be unclear or not easily usable is notable, given that teachers are not selected for the program based on prior preparation or skill in writing.

Faculty reviewers indicated that the content of the subsample of units they reviewed was accurate in all cases, but the depth of understanding demonstrated varied from superficial understanding (10% of units) to in-depth understanding (55% of units). In general, seminar leaders reflecting on the soundness of the curriculum units written in their seminar have indicated that all the units contained accurate content and appropriate teaching strategies, but many described variations in the quality of the units, reflecting primarily variations in writing ability and the amount of research done by the Fellows. Most seminar leaders were quite pleased with many of the units written in their seminar, using terms like “spectacular” and “impressively substantial” to describe the best units. Seminar leaders also often reported that in a few units, the writing needed improvement.

A systematic review of curriculum units showed that nearly all units identify the academic standards that they address. Many units go further to describe how the unit fits with the district curriculum. The standards addressed in the Institute curriculum units were most often Common Core State Standards (CCSS), but about half of the units identified other state or national standards that they addressed.¹⁸

Nearly all Fellows use their Institute curriculum units.

The curriculum units ensure that Fellows’ learning reaches their students. Virtually all 1992-2021 Fellows expected to teach their curriculum unit during the following school year. On average, Fellows planned to teach their curriculum unit to three quarters of the students in their classes. In total, 1992-2021 Fellows planned to teach their units to 72,820 students in the school year immediately following their seminar. Some students are taught multiple units, both in the same school year and in subsequent years by different teachers as they move from grade to grade.¹⁹ Over time, repeated use of units by the teachers who developed them extends their benefits to more students, and dissemination of the Institute curriculum units to other teachers within the district and through the website further increases the number of students who benefit.

Nearly all Fellows who had participated in a previous seminar reported that they had implemented the curriculum unit they developed in their most recent previous seminar. Slightly more than half had implemented their unit as planned, and slightly more than half had implemented it with adaptations, such as rearranging the unit to fit the curriculum, implementing parts of the unit at various times, adapting the unit to a different grade or to differentiate instruction, supplementing the unit to fit the needs of particular classes, and adjusting pacing or activities based on experience teaching the unit or in response to student interest while teaching the unit. Moreover, many reported that they had used the teaching strategies or content objectives in their unit when teaching their existing curriculum. Most of these Fellows reported that the goals of their unit had been met, and nearly all planned to teach their previous unit again.

Other teachers use Institute curriculum units too.

Fellows sometimes use curriculum units written by other Fellows, and other teachers also use Institute units. While the extent of use by other teachers is uncertain due to challenges collecting data on unit use, the curriculum unit study estimated that 11% of other teachers in New Haven had used Institute units. Moreover, publication of Teachers Institute curriculum units online leads to their use by thousands of other teachers, many of them public school teachers, across the country and around the world. A website pop-up survey, even with a low response rate, documented use by more than two thousand teachers over a 17-month period. These teachers were most likely to read the subject matter or teaching strategies to prepare for teaching other materials or to implement the unit with adaptations.

When using Institute units written by other teachers, New Haven teachers were most likely to read the teaching strategies (66% of teachers) or subject matter (62% of teachers) in the units to get ideas or prepare for teaching their own curriculum. Many reported that they implemented the most recent unit they had used with adaptations (43% of teachers) or read the bibliography to identify other resources (31% of teachers).

Institute curriculum units are well-regarded. In New Haven, nearly all teachers who responded to the online survey were satisfied with the units they had used and planned to implement again the unit they had used most recently.

Fellows almost universally agreed that they benefitted in a variety of ways from their Institute participation.

Most 1992-2021 Fellows cited the opportunity for intellectual stimulation as an important reason for participating, and after completing their Institute seminar, nearly all agreed that their seminar helped them grow professionally and intellectually (two thirds agreed strongly). The intellectual stimulation and learning that teachers experience in Teachers Institute seminars also strengthens their knowledge of their subject and confidence in their ability to teach it. Some Fellows noted that these improvements are recognized by administrators in assessments of their performance. These positive experiences may help sustain them in teaching.

More than three quarters of 2014-2021 Fellows agreed that the seminar provided useful knowledge or information, gave them opportunities to work on their teaching, led them to seek information from others, and led them to think about teaching in a new way. Nearly two thirds indicated that their seminar made them pay closer attention to their teaching and provided useful feedback about teaching. In their narrative comments at the end of their seminar, some Fellows also noted that becoming an expert on the topic of their curriculum unit aided them in differentiating instruction during their unit. Some reported that preparation of their curriculum unit taught them research or curriculum development skills, improved their planning and preparation skills, and motivated them to apply these skills to other curriculum units.

Respect for teachers is fundamental to the design of the YNHTI, and some Fellows identify respect as a key benefit of their participation. At the end of their seminar, some Fellows highlighted the respect or sense of professionalism they received from the program, the resulting respect they gained from their peers or school administration, or the respect they gained for the teaching profession.

Participation in the YNHTI sometimes helps Fellows fulfill a requirement or goal of their performance evaluation process. Some Fellows reported that their YNHTI participation was recognized explicitly in their performance evaluation or that observations when they were implementing their YNHTI curriculum unit contributed to their evaluation. Others, however, reported that although their YNHTI participation was very helpful to them, it was not mentioned or seen as a strength in their evaluation.

By offering teachers the opportunity to learn together in a collegial setting and by facilitating professional relationships among teachers in different schools in the district, the YNHTI may over time build collegial relationships among teachers in a school and in the district that support teacher retention. In describing the effects of participating in the Teachers Institute, some Fellows noted that the colleagues they worked with in the YNHTI became part of a professional network to which they could turn for support at any time.

By providing opportunities for leadership while remaining classroom teachers, the Teachers Institutes also may facilitate leadership in other school-wide decision-making and increase the likelihood that teachers remain teaching in their present school. Some Fellows reported at the end of the program that their seminar participation increased their confidence as a teacher leader, motivated them to pursue leadership opportunities in the district, or increased their visibility in the district and led to new leadership opportunities.

Teachers Institutes may increase teacher retention rates.

Lower teacher retention in high-poverty public schools remains an obstacle to instructional improvement, student achievement gains, and reductions in achievement gaps.²⁰ Multiple factors influence teachers' decisions to remain

teaching at their school and in their district, including factors related to school working conditions, salary, and curriculum. When working conditions in a school are poor, teachers' experiences in the YNHTI seminars may help counterbalance the conditions in their school and provide some of the support they need to remain in their current teaching position--curricular support, collegiality and

It kept me academically and intellectually engaged in the midst of professional development that isn't necessarily as stimulating as YNHTI. These seminars keep me excited about teaching. 2017 Fellow

opportunities for teacher leadership without leaving the classroom.

At the end of their Institute seminar, most Fellows reported that they expect to remain in teaching in five years, although some expect to take an administrative position, go to graduate school, or retire. On average, Fellows had taught for 11 years and expected to remain teaching for 12 more years. Most of those who expected to remain in teaching in five years expected to remain teaching in their current school (78%) or in their district (11%). Many Fellows noted in narrative comments that their Institute participation contributes to their motivation to teach, and some spoke directly about the influence of YNHTI participation on their desire to remain in teaching.

I have attested that the Institute, my participation in it, and my leadership roles holistically account for more than half the reason I still teach in New Haven. Salaries remain noncompetitive, stipended leadership roles have now ended; New Haven Public Schools does not do a lot to keep talented teachers in the district. 2017 Fellow

Some evidence exists showing that Teachers Institutes may in fact increase teacher retention rates. Among teachers who had participated in the YNHTI during or before the 2000-2001 school year, 63% were still teaching in the New Haven School District five years later, compared with 43% of New Haven teachers who had not participated in the YNHTI. After controlling for race, sex, and years of teaching experience, the analysis showed that teachers who had participated in the Institute by 2000-2001 were almost twice (1.93 times) as likely to remain teaching in the district in 2004-2005.²¹

Fellows expect Institute curriculum units to increase student engagement in learning and mastery of unit materials and to contribute to higher student achievement.

The research literature highlights the importance of student engagement and shows that it is associated with better learning and higher achievement.²² In the literature, researchers have reached broad agreement that student engagement consists of at least three interrelated dimensions: behavioral engagement (participation, effort, attention, persistence, positive conduct, absence of disruptive conduct), emotional engagement (sense of belonging, reactions to teacher, classmates, academics, and school), and cognitive engagement (investment in learning, willing to exert effort for understanding complex ideas and mastering difficult tasks).²³

The YNHTI has accumulated consistent evidence showing that greater student engagement is a key outcome of teacher participation in Teachers Institute seminars. Statements made by New Haven Fellows suggest that when they speak about their students' engagement, they are considering primarily behavioral and cognitive engagement.

YNHTI Fellows consistently report high levels of student engagement when they teach the curriculum unit that they developed in their Institute seminar. When surveyed in 2016-17 about how their students responded when they taught their Institute curriculum unit, the majority of New Haven Fellows rated their students' response as "highly engaged". Most of the remaining Fellows reported that their students were "moderately engaged".

Most New Haven teachers who had used Institute curriculum units reported that compared with commercial curriculum they have used, YNHTI units elicit the same or greater student attention, interest, and motivation, and lead to the same or higher student mastery. More than half reported that Institute units were superior overall to commercial curriculum materials they have used.

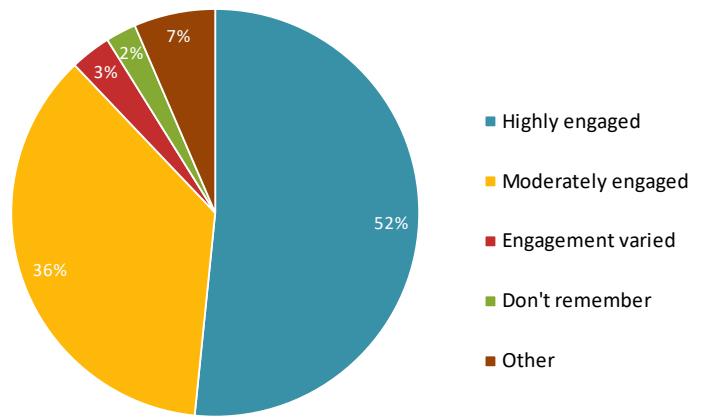
Unit activities, tailored content, and teacher enthusiasm and preparation engage students.

In their narrative survey responses, many Fellows described features of their unit or how they planned to teach it that would engage their students. Many highlighted hands-on activities, inquiry-based activities, or specific teaching strategies. Some identified activities designed to promote deeper understanding of the content and the skills to apply it, as well as interpersonal skills to enable students to take initiative, think critically and creatively, work collaboratively, and communicate ideas. As noted previously, Fellows reported that their Institute curriculum units are more likely to include some of these deeper learning strategies than their teaching does ordinarily.

They knew they were doing something special that I had worked on for them, which seemed to make them more engaged than working on the standard curriculum. 2015 Fellow

I suspect that some of the power of my Institute based lessons comes from the level of comfort I feel in the acquired knowledge base. I have a deep connection to the material. I have spent an inordinate amount of time reading, thinking, and writing about the material. I imagine my students can feel my connection to the material and I think that makes for some persuasive thinking. 2011 Fellow

Engagement of Fellows' Students During Institute Units



Source: 2016-2017 Survey of New Haven Teachers

Sometimes it is the new or different content of their curriculum units that Fellows believe engages their students. Some Fellows noted that their students would be engaged because they designed the activities or content in their unit specifically for their students.

Other Fellows expressed excitement about teaching their Institute curriculum unit and suggested that their enthusiasm will be contagious. They expected their students to respond to the curriculum unit with their own enthusiasm and engagement in unit activities.

Deeper knowledge of the topic and confidence in teaching it, along with more preparation to teach the unit than is usually possible, also enabled some Fellows to engage their students more effectively.

Fellows observe better learning and achievement along with higher student engagement.

Not only do Fellows and other New Haven teachers using Institute curriculum units often report that student engagement, attention, and interest are higher during these units, many also report that student motivation to do work and student mastery of the material are higher during Institute units than during commercial curriculum units they have used. Almost none reported that student motivation was lower, and none reported student mastery was lower during Institute units than during commercial units they had used.

Nearly half of 1992-2021 YNHTI Fellows agreed strongly that they have higher expectations of their students' ability to learn about the seminar subject, and one fifth agreed strongly that they learned new teaching strategies from other participants in their seminar. Fellows' higher expectations of their students may be important, because higher teacher expectations have been associated with higher student achievement.²⁴

In their narrative survey responses, some Fellows discuss explicitly how improved student engagement leads to greater motivation and better learning or achievement. When students are more engaged, some Fellows assert, they become more personally invested in the topic or make connections between the topic and their everyday life, which leads to greater commitment to learning and deeper understanding of the topic.

A few Fellows described improvements in student behavior resulting from higher engagement or noted how student engagement led to increased confidence among students that they could succeed in the subject area. A few Fellows also noted that the increased engagement of their students supported their school's improvement plan.

Many faculty also report experiencing benefits from leading Institute seminars.

In their end-of-seminar feedback, 2007-2021 seminar leaders reported benefitting from their seminar experience in a variety of ways, with many seminar leaders highlighting improvements to their teaching, scholarship, or knowledge of K-12 education in New Haven. Some seminar leaders noted that they learned teaching strategies from Fellows or that teaching a different sort of student gave them new insights and perspectives on their own teaching or the material studied in the seminar.

The Institute has made and continues to make a tremendous contribution to public school education and to the culture of Yale-- which could well use more such ways for faculty to connect their expertise and convictions to the world beyond Yale's walls. Seminar leader

Many seminar leaders noted that leading their seminar improved their understanding of New Haven schools and the challenges confronting teachers and students. For some, this knowledge informed them about the pipeline into their discipline or facilitated connections across education levels.

Several seminar leaders noted that the YNHTI is important outreach or provides an important service to the community. Some seminar leaders saw leading a seminar as outreach to other levels of education.

Most seminar leaders concluded that leading a YNHTI seminar was a valuable experience. Despite the substantial work required to conduct seminars and work with Fellows on curriculum units, more than one third of seminar leaders participated in more than one year of the YNHTI.

Some of the benefits described by seminar leaders are also benefits experienced by Yale University. The YNHTI is an important way in which the university fulfills its commitment to the community. Moreover, the benefits reported by seminar leaders suggest that the YNHTI may improve teaching at the university (through insights faculty gain about teaching approaches and the pipeline into their discipline) and forge connections between faculty in different departments.

The experience will contribute to my own teaching in that I will utilize far more classroom demonstrations than I currently show ... I will also integrate them much more deeply in the course material instead of them just being a gee-whiz sort of thing. *Seminar leader*

Prior to the institute, I had never taught a seminar before. My instruction had been limited to lectures and laboratories. I hope that I can use this experience make my undergraduate and graduate courses more interactive. *Seminar leader*

Implementation of the Teachers Institute model over time and across locations demonstrates its replicability.

Consistency in program experiences and outcomes over time suggest that the Teachers Institute approach can succeed under a variety of conditions.

In her preface to the first longitudinal report using Fellow questionnaire data, a progress report presenting data from 1982 to 1990,²⁵ Gita Wilder wrote:

What is most notable about the findings reported here is their consistency. Although each Institute year brings a new crop of Fellows (albeit many Fellows return for repeat engagements with the Institute), the responses of Fellows to their experiences with the Institute have been similar. With great uniformity, Fellows describe their Institute experiences enthusiastically. They credit the Institute with enhancing their interest in the subjects they teach, increasing their engagement with teaching, and augmenting their senses of autonomy in their classrooms. They are unfailingly positive about the benefits to them of participation in the seminars and about the experience of having prepared their curriculum units. Such consistency of responses is manifest not only among each year's Fellows, but among Fellows across years. This consistency of findings was entirely unexpected. The teachers who have been Fellows of the Institute are a heterogeneous group. They teach different subjects and different grades. Their preparation is varied; they majored in different fields as undergraduates. Moreover, they teach the full range of students who attend the New Haven Public Schools. In short, the Fellows are representative of the larger population of New Haven teachers.

Remarkably, virtually the same text could be written today about the Fellow questionnaire data collected from 1992 to 2021. The data show notable consistency over time in the experiences of program participants and the outcomes they report. Data vary from year to year, but the variations are relatively small in most cases and reveal few trends over time.

On the one hand, this consistency in experiences and outcomes is not surprising, because the YNHTI leadership and features of the YNHTI seminars have not changed. On the other hand, such consistency in findings *is* surprising in light of the changes that have taken place in national education and school district policies and in the context for teaching, including the COVID-19 pandemic. This suggests that the experiences of Fellows in Teachers Institutes do not depend on the specific context in which seminars are conducted.

The successful implementation of Teachers Institutes in other locations further demonstrates program replicability.

The YNHTI launched a National Demonstration Project in 1999 to determine whether the Teachers Institute approach could work in other cities with similarly disadvantaged students but with distinct challenges. Public school districts in four cities—Pittsburgh, PA; Houston, TX; Albuquerque, NM; and Santa Ana, CA—created partnerships with local universities to implement Teachers Institutes. Compared with the YNHTI, these districts were much larger, faced greater language barriers, and worked with differing institutions of higher education.²⁶

An external evaluator determined that the National Demonstration Project succeeded in reaching its goal of demonstrating that the Teachers Institute model could be replicated in a relatively short time in sites that are considerably larger than New Haven.²⁷ All four demonstration sites succeeded in implementing Teachers Institutes, three continued operating throughout the three-year demonstration period, and two sustained program operations after demonstration funding ended. Their experiences highlighted the importance of early and frequent communication with key audiences and stakeholders, strong leaders who insist on the model, starting small and growing slowly, focusing on outcomes, and addressing local goals and priorities.

Building on the lessons of the National Demonstration Project, the YNI has continued to disseminate and support implementation of the Teachers Institute model. In addition to the YNHTI, Teachers Institutes are currently operating in three locations: Philadelphia, Delaware, and on the Navajo Nation in Arizona. Negotiations are under way to develop Teachers Institutes in several other locations.

The YNHTI demonstrates the important contribution that university-school partnerships can make to teaching and learning.

Decades after the program began, the YNHTI, through a committed university-school partnership and steadfast adherence to its founding principles and program model, continues to provide intensive teacher professional development on topics that teachers request. Participating teachers consistently report positive experiences and expect improved student learning when they teach the curriculum units they write in their seminar, and many teachers participate in YNHTI seminars multiple times. The YNHTI represents an important contribution of Yale University to public schools in its community (and other communities that have implemented a Teachers Institute), but the university also benefits from greater communication between faculty and teachers across levels of education and the insights that faculty gain from their participation. Thousands of students have received instruction using YNHTI curriculum units, and while it has so far not been possible to measure the impacts of that instruction rigorously, teachers' observations of student engagement and learning during their curriculum units are very promising.

APPENDIX A: Teachers Institute Programs

This report focuses on the Yale-New Haven Teachers Institute (YNHTI), which was established in 1978 as a partnership of New Haven Public Schools and Yale University (teachersinstitute.yale.edu). The YNHTI developed the Teachers Institute approach and continues to provide professional development for teachers in New Haven Public Schools.

In 2004, after the successful testing of the Teachers Institute model of teacher professional development in a four-year National Demonstration Project, the YNHTI launched the Yale National Initiative (YNI) to strengthen teaching in public schools. The YNI is a long-term endeavor to influence public policy on teacher professional development, in part by establishing Teachers Institutes that will provide state and local policy makers effective examples of the innovative Institute approach in their own communities. Its activities include conducting annual seminars with a condensed schedule for teacher leaders from existing Teachers Institutes and other locations that are seriously considering implementation of a Teachers Institute.

The League of Teachers Institutes is an informal alliance of the Teachers Institutes that the YNI has helped to create. Information on local Teachers Institutes can be found at: teachers.yale.edu/curriculum/league-members

APPENDIX B: Overview of Research

From the beginning, the Yale-New Haven Teachers Institute (YNHTI) has conducted research to help program leaders monitor program experiences and expected outcomes. Much of this research is summarized in this report. The table below provides an overview of the data that have been collected.

Data collection	Topics	Administration	Dates
Fellow questionnaire	Fellow characteristics, teaching experience and context, program experiences, expected outcomes	Currently fixed choice questions and essay questions administered online	Annually 1978-present
Seminar leader evaluations	Seminar leader experiences and expected outcomes	Currently essay questions administered online	Annually 1978-present
Surveys of curriculum use	Use of Teachers Institute curriculum units by authors, other Fellows, and other teachers	Most recently administered online in Fellow questionnaire, targeted surveys of New Haven teachers, and website popup surveys	2016-present 1987 1982
Curriculum unit reviews	Features of Teachers Institute curriculum units	Most recently structured reviews of curriculum units by teacher reviewers and former seminar leaders	2016-17 1985
National Demonstration Project	Special study of the replicability of the Teachers Institute approach in four other diverse locations	Implementation study by an outside evaluator and Fellow questionnaires administered at each location at the conclusion of seminars	1999-2002

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Endnotes

¹ Dr. Kisker is an independent researcher (Twin Peaks Partners, LLC) who conducts education policy research for a variety of clients. Prior to establishing her business, Dr. Kisker was a senior researcher at Mathematica Policy Research, Inc for many years. Dr. Kisker has conducted rigorous evaluations of education programs, led topic reviews for the U.S. Department of Education's What Works Clearinghouse, and provided technical assistance to research teams conducting evaluations of education programs. Dr. Kisker has been conducting research on the Teachers Institute approach since 2006.

² Vivian, James R., editor (1985). *Teaching in America: The Common Ground*. Accessed on 6/20/2022 at <https://teachersinstitute.yale.edu/pubs/A4/>.

³ Ibid.

⁴ The Yale National Initiative (2007). *The Teachers Institute Approach: A Manual Containing the Steps, Understandings, Procedures, and Timeline for Establishing and Maintaining a Teachers Institute*. New Haven, CT: Yale-New Haven Teachers Institute, Yale University.

⁵ Vivian, James R., editor (1985). *Teaching in America: The Common Ground*. Accessed on 6/20/2022 at <https://teachersinstitute.yale.edu/pubs/A4/>.

⁶ Archibald, Sarah, Coggshall, Jane G., Croft, Andrew, and Goe, Laura (2011). *High-Quality Professional Development for All Teachers: Effectively Allocating Resources*. Washington, DC: National Comprehensive Center for Teacher Quality.

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⁸ Kisker, Ellen Eliason (2018). *Updating the Theory of Change*. On *Common Ground*, Number 16, pp. 5-7.

⁹ Kisker, Ellen Eliason (2022). *Thirty Years of Intensive Teacher Professional Development: 1992-2021 Yale New Haven Teachers Institute*. New Haven, CT: Yale-New Haven Teachers Institute.

¹⁰ Kisker, Ellen Eliason (2018). *Taking New Content Knowledge into the Classroom: Use of Teachers Institute Curriculum Units*. New Haven, CT: Yale-New Haven Teachers Institute.

¹¹ Kisker, Ellen Eliason (2018). *Taking New Content Knowledge into the Classroom: Use of Teachers Institute Curriculum Units*. New Haven, CT: Yale-New Haven Teachers Institute.

¹² Kisker, Ellen Eliason (2018). *Teachers Institute Curriculum Units: Key to Teacher and Student Learning*. New Haven, CT: Yale-New Haven Teachers Institute.

¹³ Kisker, Ellen Eliason (2006). *A Guide for Developing a Prospective Evaluation of Teachers Institute Seminars*. New Haven, CT: Yale-New Haven Teachers Institute.

¹⁴ Teachers using an Institute curriculum unit, whether the author or another teacher, must create any additional lesson plans needed as part of their preparation to teach the curriculum unit.

¹⁵ Kisker, Ellen Eliason (2018). *Teachers Institute Curriculum Units: Key to Teacher and Student Learning*. New Haven, CT: Yale-New Haven Teachers Institute.

¹⁶ William and Flora Hewlett Foundation (2013). *Deeper Learning Competencies*. Accessed at https://www.hewlett.org/wp-content/uploads/2016/08/Deeper_Learning_Defined__April_2013.pdf on November 3, 2017.

¹⁷ Kisker, Ellen Eliason (2018). *Teachers Institute Curriculum Units: Key to Teacher and Student Learning*. New Haven, CT: Yale-New Haven Teachers Institute.

¹⁸ Not all states where Fellows teach have adopted the CCSS, and not all Fellows teach subjects that are addressed in the CCSS.

¹⁹ Arnold, Taylor B. (2010). *Modeling the Number of Students Reached by the Teachers Institute*. New Haven, CT: Yale-New Haven Teachers Institute. The simulation model estimates that in New Haven, over a five-year period, Fellows will teach their units to 24, 890 students, and 4,447 of these students will be taught multiple Institute units. If unit use by other teachers is considered, the model estimates that 60,431 students will be taught Institute units over a five-year period, and 22,542 of these students will be taught multiple Institute units.

- ²⁰ Carver-Thomas, Desiree, and Darling-Hammond, Linda (2019). The Trouble with Teacher Turnover: How Teacher Attrition Affects Students and Schools. *Education Policy Analysis Archives*, vol. 27, no. 36, pp. 1-28.
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