HARVARD UNIVERSITY
Graduate School of Education
514 Roy E. Larsen Hall, Appian Way
Cambridge, Massachusetts 02138
(617) 496-6650 Fax (617) 496-3963

INITIATING, LEADING, AND FEELING IN CONTROL OF ONE'S FATE

EXECUTIVE SUMMARY

0F

FINDINGS FROM THE 2002-2003 STUDY OF NFTE IN SIX BOSTON PUBLIC HIGH SCHOOLS

Project IF: Inventing the Future

Harvard Graduate School of Education

Michael Nakkula, Ed.D., Principal Investigator

Miranda Lutyens, Project Coordinator

Claudia Pineda, Amy Dray, Frank Gaytan, and Jay Huguley

Research Assistants

June 2004

INTRODUCTION: PHASE TWO

During the 2002-03 academic year, Project IF (Inventing the Future) at the Harvard Graduate School of Education collected second-year data on a multi-year study of NFTE. The study is designed to address the role of NFTE in promoting the development of entrepreneurship, including entrepreneurial thinking and behavior. While a fair amount is known about how adult entrepreneurs think and act, little is known about how those entrepreneurial characteristics actually develop.

In phase one of our study (2001-02), we collected and reported on data from two large public high schools in Boston. In that phase, we found that NFTE students were more likely than Comparison group students to expand their college interests and occupational aspirations from pretest to posttest. In addition, NFTE students were more likely to increase their involvement in independent reading (non-school reading). These outcomes suggest clear implications for NFTE's impact not only as a *business entrepreneurship* training program, but also as a potential facilitator of broader educational and professional development. Furthermore, phase one indicated that Latino students may benefit from NFTE in particularly powerful ways. Most importantly, Latino students involved in our study of NFTE during 2001-02 showed an increased sense of connection to school, while Latino students in the Comparison group during that phase of our study declined in this area.

Phase two (2002-03) of the study builds upon the prior phase in a number of ways. First, we expanded the study to a larger number of schools and students, thereby allowing for the possibility to study NFTE in a broader range of learning contexts. In addition, this second phase incorporated some new instruments that allowed us to assess different factors potentially associated with NFTE's training and the development of entrepreneurship. Those instruments included a measure of entrepreneurially related activities (*Entrepreneurial Activities Checklist*) in which high school students can become involved. We also added a measure of Locus of Control, which has been found to be important in the adult entrepreneurship literature; this will allow us to assess whether NFTE promotes a greater sense of inner agency related to achievement and goal attainment, versus a belief that such outcomes are largely outside of one's control.

Finally, we included four key scales from new national research on important contributions to healthy or positive development. Those scales assess originality, curiosity, industriousness, and hopefulness, all areas that we believe are related to entrepreneurship, and in which NFTE may have an impact.

Because of time constraints inherent to administering survey instruments in schools, our testing of new survey measures required that we delete some others that were used in phase one of the study. The analysis of data from the two phases of the study has allowed us to determine which instruments seem most powerful in detecting change that might be promoted through NFTE participation.

Phase Two Sample

As alluded to above, we targeted six schools for this second phase of our study. We selected these schools based on various factors. All had populations with similar demographics to the 2001-02 sample from East Boston High and Brighton High. Five of the six schools in the second phase were large Boston public schools, each of which had a relatively strong relationship with NFTE. We decided to include Boston Evening Academy in the sample because, although the NFTE program was being taught there for the first time, NFTE staff believed the teacher and the school environment to be promising for the program. All of the schools arranged for us to collect data in Comparison classes, which, in most cases, provided similar class sizes to the NFTE classes. In some schools we worked with multiple NFTE and Comparison classes, and in others we worked with just one of each. In all, we collected data in 17 different classrooms across the six schools, and worked with 13 different teachers.

Table A. provides a breakdown of the sample by school.

Table A. Number of students per site

Boston Public School sample 2002-2003 (N=268).

	Boston Evening	Brighton	Charles-town	English	O'Bryant	West Roxbury	Total
NFTE	15	23	30	44	27	19	158
Comparison	13	18	21	17	17	24	110
Total	28	41	51	61	44	43	268

Table B. presents the basic demographic information on the sample, as provided by the Boston Public School's School-to-Career office.*

Table B. A Demographic Profile of NFTE vs. Comparison students

Boston Public School sample 2002-2003 (n=268).

	NFTE n=158		**Comparison** n=110	
	n	%	n	%
Gender				
Male	85	54%	62	56%
Female	73	45%	48	30%
Race				
African American	91	58%	46	42%
White	12	8%	2	2%
Asian	19	12%	20	18%
Latino	36	23%	41	37%
Other/No Response	0	0%	1	1%
Other Statistics				
Students Receiving Free/Reduced Lunch	109	69%	78	71%

*Demographic data for students from Boston Evening Academy was provided by the school, not the School-to-Career office.

REVIEW OF KEY FINDINGS

Phase two yielded a number of important findings. First, the results from our newly developed Entrepreneurial Activities Checklist (EAC) showed that NFTE students were more likely than their Comparison Group peers to change in key areas over the course of the academic year. The NFTE students' overall Entrepreneurial Behavior score increased significantly from pre to posttest, while the Comparison Group scores remained static. This finding is especially important to our study, given the lack of instruments for assessing what might be deemed *precursors to adult entrepreneurship*. Because we are not only studying entrepreneurship per se – that is, the opening and developing of one's own business – but also the adolescent correlates of and precursors to later entrepreneurship, we were not certain that our instrument would detect differences between NFTE and Comparison Group students; nor were we certain that NFTE would produce the changes we were looking for. Therefore, powerful changes detected in the *Starter* and *Leader* subscales of our instrument are especially heartening. The starter

subscale captures efforts to initiate new activities such as school clubs, or to start something new within existing areas such as sports and the arts; the leader subscale captures leadership activity exercised in these areas. Increased scores on these subscales for NFTE students (and not for Comparison Group students) suggest that the program is encouraging engagement in these arenas, and that our scales pick up this engagement.

Another important finding from the EAC is that change was found not only in the *business activity* subscale, but also in *sports and arts activity*. This finding suggests that NFTE students initiate and take leadership in sports and arts activities, as well as doing so in the business arena. This is important because the roots of entrepreneurship in adolescence likely have their moorings in areas rich with opportunities for initiation and leadership. Sports and the arts are two such areas. We anticipate that youth who initiate and take leadership in these arenas are likely to do so in other areas as well.

Related to "taking initiative" is the popular notion of *locus of control*. People high on *internal* locus of control have been found to lead and take initiative, because they view success as residing largely within themselves. On the contrary, people high on *external* locus of control view success as contingent upon a host of external factors, rather than attributing it primarily to their own efforts and capacities. Successful entrepreneurship has been associated with internal locus of control in other studies. Therefore, it is encouraging that NFTE students were found to increase their internal locus of control from pre to posttest substantially more than Comparison Group students. This was particularly the case for the immigrant participants in our study. In fact, immigrant students in the Comparison Group decreased markedly from pre to posttest on locus of control, becoming, by definition, more externally oriented.

Although we cannot explain why immigrant students in NFTE became more internally oriented while their Comparison Group peers did the reverse, we can speculate as to why this might be the case. Immigrant youth and their families generally have been found to be more entrepreneurial and idealistic about their future prospects than citizens who have lived in this country for multiple generations. However, the literature also shows that the children of immigrant families tend to decline in their idealism following years of assimilation to American norms. Our findings may help explain this phenomenon. That is, idealism that is met with barriers and obstacles is likely to turn to

frustration and disappointment. If, on the other hand, immigrant idealism is met with real tools for engaging the opportunities available in our society, perhaps the sense of personal efficacy grows stronger. The fact that NFTE seems to provide particular benefits to immigrant youth (based on findings from both phases one and two) suggests that they view it as a tool for accessing opportunities.

It also is important to note here that locus of control findings were strongest for students trained by NFTE's National Teacher of the Year. Students from this class increased dramatically in internal locus of control from pre to posttest. This finding reinforces a tenet that is critical to ongoing studies of NFTE: sampling must include top-notch NFTE teachers. In those cases were the programming is strongest, we are most likely to detect results that can inform the field. Although it is useful to study processes and outcomes associated with a range of NFTE teaching, studies of best practice teaching are essential to the overall picture.

Another example of the importance of strong NFTE teaching came through in our finding that general *teacher connectedness* increased for students trained in NFTE by another teacher-of-the-year award winner. Students trained in NFTE by this teacher reported increases in the degree to which they feel connected to their teachers, while the Comparison Group students from the same school showed a strong decline in teacher connectedness. The *Hemingway Measure of Adolescent Connectedness* was used in our study precisely to explore this type of experience. We hypothesized that if students could feel more connected to school through NFTE they would ultimately form a stronger bond to school itself. Our evidence is not strong enough to support this hypothesis yet, but the teacher connectedness finding is a step in that direction.

Connecting Phase One and Two Findings

When examining significant findings across the last two phases of our study, an impressive picture begins to emerge. Phase one showed that NFTE students were more likely to increase in their occupational aspirations over the course of the school year; more specifically, relative to the Comparison Group students, NFTE students expressed increasingly strong interest in occupations requiring advanced training or formal education. In addition, the NFTE students were more likely than the Comparison Group

students to express interests in college. Phase two findings show that NFTE students also are more likely than Comparison Group students to engage in a range of Entrepreneurial Behavior, such as taking initiative and leading in business, arts, and sports activities. When combining these findings, we see an emergent profile of NFTE students expanding their future occupational aspirations, taking initiative within their present circumstances, and taking on leadership roles in their lives. Although these findings need to be replicated through subsequent waves of study with larger samples of students before we can confidently stand behind them, the emerging picture is highly encouraging.

Assessment Lessons

Based on our analyses of the first two waves of data (2001-02 and 2002-03), we have learned important lessons for the measurement of NFTE's impact, at least in the time period immediately following completion of the program. It is possible and even likely, of course, that the most essential outcomes will not appear at posttest, but will, rather, show up further into the future. So instruments that did not show change at posttest are not necessarily ineffective for assessing NFTE; it is possible that their use over many measurement periods would yield important patterns of growth. Nonetheless, these first two phases of our study have shown that particular instruments are sensitive to detecting change immediately at posttest, and as such those instruments should receive strong consideration in future iterations of data collection.

In this 2002-03 phase of the study, we found that the *Entrepreneurial Activities Checklist* (EAC) proved enormously useful in detecting differences between NFTE and the Comparison students. Specifically, it showed that NFTE students changed significantly in the overall degree to which they engaged in a range of entrepreneurial behaviors, as defined by the instrument; the Comparison group students did not change significantly in this regard. Furthermore, the EAC was useful in picking up significant change in both starter- and leader-based activities, two important aspects of entrepreneurship. Although the EAC is still being refined it clearly shows strong potential for contributing to the standard package of assessment approaches.

The *Nowicki-Strickland Measure of Locus of Control* also yielded important findings that marked differences between the NFTE and Comparison groups. These

differences were especially pronounced for immigrant participants, and for students in classes known for strong NFTE teaching. Given the importance of locus of control (feeling in control of one's fate versus feeling that one's fate is due to chance or external factors) in the adult entrepreneurship field, the strength of the Nowicki-Strickland in our study makes it an important tool for the subsequent steps.

We have had mixed results with the *Hemingway Measure of Adolescent Connectedness* over the past two years, however, each year one important finding has been uncovered by this instrument. For this second phase of analysis, an important School Site by Teacher Connectedness interaction was found, whereby feelings of connections to one's teachers was dramatically increased for students who participated in NFTE with a recent NFTE New England Teacher of the Year award winner. This finding did not exist in the other NFTE schools, suggesting that when NFTE is taught particularly well, feelings of connection to one's teachers may be enhanced. This finding, of course, has strong implications for broader educational engagement and academic achievement.

In phase two, only the newly tried *Values in Action* (VIA) scales proved disappointing across the board. NFTE students did not show change on any of these scales. It is arguable that the scales assess deeper developmental and personality-related issues that take longer to change: originality, curiosity, industriousness, and hopefulness. Although these issues are important to entrepreneurship, we will need to give careful thought to whether we can further utilize them in our studies, given the constraints on time and student energy required to accurately complete the surveys.

In order to try out new instruments for phase two, we did not administer the ATOM (Across Time Orientation Measure), which focuses on students' self-perceptions across time, including present interests and future hopes and worries. The ATOM was critical to our phase one study, uncovering strong differences between NFTE and Comparison Group students in such areas as occupational aspirations, and ongoing educational interests. When examining outcomes from phases one and two together, it seems that an optimal assessment package would include the (1) ATOM, (2) Entrepreneurial Activities Checklist, (3) Nowicki-Strickland Measure of Locus of Control, and (4) the school and independent reading subscales of the Hemingway Measure of Adolescent Connectedness.

In the current academic year (2003-04) we are not collecting data on a new cohort of students; rather, we are collecting longitudinal follow-up data on students from phases one and two. This longitudinal data should allow us to further assess the impact of NFTE and the degree to which the various instruments are effective in picking up change. In addition to using each of the key instruments from phases one and two, we also added a new *Create a Resume* instrument, which will allow us to examine students' representations of their skills, accomplishments, and future career interests. The instrument will be scored in a manner that will help to determine the relative degree to which the students portray an entrepreneurial profile. This comprehensive assessment package should provide a fairly thorough depiction of the degree to which NFTE is shaping entrepreneurial attitudes and behaviors.