MATHEMATICA
Policy Research, Inc.

Enhancing the 21st Century Community Learning Centers Evaluation: A Concept Paper

Final Draft

November 20, 2000

Mary Moore
Mark Dynarski
John Mullens
Susanne James-Burdumy
Linda Rosenberg

ABSTRACT

Expanding knowledge about the implementation of quality after-school programs and identifying program effects on students' school performance and social, emotional, and cognitive development are the key missions of the national evaluation of the 21st Century Community Learning Centers Program. With dramatic increases in funds since the Congress first funded the program in fiscal year 1998, the U.S. Department of Education (ED) now has awarded grants to school districts serving over 900 communities to establish school-based after-school centers. Sustained public interest in structured after-school programming for students has heightened the need for a comprehensive national evaluation that can inform policy makers and practitioners.

The C.S. Mott Foundation and ED are partners in contracting with Mathematica Policy Research, Inc. to carry out the national evaluation of 21st Century programs. This concept paper sets forth the assumptions and key relationships underlying the evaluation. While a major goal of the paper is to describe how various components of the evaluation—the ED core study and the Mott enhancement study—fit together, an equally important goal is to delineate the underlying perspectives and principles that shape the evaluation and its components. These perspectives and principles include (1) distinguishing implemented programs from intended programs, (2) ensuring sufficiently broad coverage to explore competing theories of effective programming, (3) collecting longitudinal information on students and centers, and (4) measuring program impacts with control/comparison group designs.

The paper also elaborates the conceptual framework for the national evaluation. A logic model serves as a touchstone for the evaluation's data collection, analysis, and report tasks across all components. The logic model, based on a blend of available research and craft knowledge, posits that after-school program elements are implemented in differing contextual settings (such as geography, demography, and school reforms). After-school program features (for example, academic and enrichment activities, outreach, dosage) are affected by these contexts, and in turn, may affect several conditioning factors that may moderate their effects (for example, age and at-risk status of children) or mediate them (for example, changes in parent/child interactions). Ultimately, the combination of context, program, and conditioning factors may produce a range of intermediate effects on students (such as completing assignments, improved personal and social problem-solving skills). Longer-term effects on students (such as higher grades, increased achievement scores, positive personal behaviors), however, are likely to emerge once students have evidenced these intermediate effects.

The components of the evaluation—their design and relationship—comprise the second half of the concept paper. The ED core study and the Mott enhancement both address impacts of 21st Century after-school programs on desired outcomes for elementary and middle school students and both examine issues of centers' implementation and sustainability. The Mott enhancement study, however, will select and focus on the ten 21st Century programs with elements associated with quality programs from the national evaluation's overall sample of 60 grantees. It also provides for extended follow-up of middle school students to capture high school experiences. In addition, the Mott enhancement will support several special studies that will add perspective and insight to the core study: a study of after-school time use by middle-school students, a survey of 21st Century participants' experiences in the program, a survey of non-participants' perspectives, a survey of principals in host-schools, a survey of 21st Century program staff, and a study of lessons from other mature (non-21st Century) after-school programs.

ENHANCING THE 21ST CENTURY COMMUNITY LEARNING CENTERS EVALUATION: A CONCEPT PAPER

This paper prepared expressly for the C. S. Mott Foundation provides a conceptual overview of the National Evaluation of 21st Century Community Learning Centers. It presents the assumptions and key relationships that underlie the national evaluation and articulates how different components of the evaluation funded by Mott and the U.S. Department of Education's Planning and Evaluation Service build on these assumptions and relationships to provide a thorough assessment of the 21st Century program. Readers are encouraged to consult a separate, companion document that elaborates technical design issues related to the U.S. Department of Education's plan for evaluating the 21st Century program.[1]

The 21st Century program has now awarded five cohorts of over 900 school districts with funding to provide quality after-school programs within public elementary and secondary schools. Federal funds to initiate and expand after-school programs at the local level have grown tenfold from $40 million appropriation in fiscal year 1998 to $450 million in fiscal year 2000. Another increment of around $200 million is expected before the current congress concludes its work later this year. These funds seek to stimulate the provision of extended learning opportunities in school settings that are safe and secure for students in the hours when schools are not routinely operating.

The national evaluation focuses on implementation and impacts achieved by 21st Century grantees serving elementary and middle school students in after-school programs (as distinct from summer programs and programs for high school students). It has two major components: (1) a core study funded by the U.S. Department of Education's (ED) Planning and Evaluation Service and (2) an enhancement to this core funded by the C. S. Mott Foundation. The core and the enhanced study represent an ambitious and forward thinking effort on the part of both sponsors. The ED core study reflects the interests of the federal government in learning how effective the 21st Century after-school programs are and what practices and approaches foster effectiveness in different contexts and for different student populations. The Mott Foundation enhancement builds on these objectives by opening opportunities to examine in-depth the aspects of after-school services that promote quality programs for youth and to look at the extended effects of after-school programs (that is, those beyond two years) that reflect these properties. The combined resources of ED and Mott embody a joint commitment to addressing the challenges involved in developing and sustaining after-school programs that provide high-quality experiences for children and in obtaining credible evidence that programs result in improved student performance and behaviors in and out of school.

The after-school programs supported by the 21st Century respond to several emergent needs in American society. These include the need for extended learning opportunities for children to

---

[1]This report is entitled: *A Broader View: The National Evaluation of the 21st Century Community Learning Centers Program,* (Dynarski et al. 2000).

build the academic and cognitive skills to succeed in school; the need for nurturing environments in which youth can explore interests, develop self-confidence, and acquire the social skills important to successful adulthood; and the need for quality after-school care for children of working parents to offset the dangers of self-care. Evidence indicates that these needs frequently go unmet for children and parents who reside in disadvantaged communities (Urban Institute 2000).

The 21st Century program, through a partnership with the Mott Foundation, has provided a vision of how after-school centers can construct programs that blend research and craft-inspired views of good practice to achieve academic improvement, developmentally appropriate youth outcomes, and safe and developmentally appropriate childcare (U.S. Department of Education, April 2000). This vision (which may be described as the "intended 21st Century program") includes the following attributes:

- Established goals, strong leadership, and effective management that includes planning for sustained operation

- Skilled and qualified staff with low staff-to-student ratios and manageable groups

- Academic support and academic activities that are challenging, fun, engaging, and complement those of the school day

- Enrichment activities that develop children's social, emotional, and physical well-being

- Parent involvement components that equip parents with child-relevant information, and afford opportunities for involvement as volunteers or participants in center programs

- Active collaborations involving networks of community-based and youth-serving organizations

- Linkages between regular-school staff and after-school staff to build coherence in program content and to provide coordinated responses to children's educational and developmental needs

A common vision, however, does not necessarily result in centers similar in mission, design or organization. This is particularly true of the 21st Century program where responsiveness to local community needs is considered critical to the success of an after-school program. The consequence is that the intended program becomes the "implemented program," or the after-school program that actually operates in the field. For example, among the full complement of needs confronting after-school centers, some needs may carry more weight in certain communities. The provision of safe, accessible child-care may dominate all other needs, thus delaying the introduction or full realization of program components that engage children developmentally or educationally. Other after-school centers may have a leading role in school reform efforts to reverse the inadequate performance of children on state-mandated assessments and thus concentrate their activities on building the knowledge and skills necessary to pass the

assessments. Another cluster of centers may place heaviest priority on building children's personal assets through the pursuit of individual and group projects, and opportunities for community service.

Variation among 21st Century after-school centers and divergence from the intended program also comes from factors such as the stage of a center's implementation and the availability of critical local resources. Centers in their first year of operation differ in important ways from those where the relevant organizations and staff have had time to establish programs and working relationships.[2] In start-up, after-school centers' levels of student participation may fall short of planned levels, coordination with the school and outside community groups may be in its infancy, and recruitment of qualified staff may be different. Programs that are replications of other centers may experience fewer of these early implementation challenges but they may encounter the difficulties of transplantation and forging relationships between new actors and community groups. Furthermore, for some centers, difficulties arise or continue despite the passage of time. Resource shortages—either in the form of qualified staff, transportation facilities that make centers inaccessible to many students, or a lack of community organizations with which to collaborate—can limit the development of important program components well beyond the phases of early implementation.

These observations underscore the importance of the national evaluation's ability to accommodate the variability of 21st Century after-school programs and their stages of evolution. In light of the numerous interventions defining after-school programs around the country, the evaluation has been constructed to incorporate two perspectives critical to national policy and sponsors of after-school efforts.   The first perspective addresses implementation and effectiveness questions through a focus on the program as actually implemented in a broad range of 21st Century centers. This perspective largely frames the core study sponsored by ED. The second perspective addresses these and related questions by focusing on centers that more closely approximate the intended program envisioned by the 21st Century partnership.   In general, this perspective frames the enhancements to the core study supported by the Mott Foundation.

A. RATIONALE, CONCEPTUAL FRAMEWORK, AND KEY RELATIONSHIPS FOR THE NATIONAL EVALUATION TO ADDRESS

The national evaluation as a whole seeks: (1) to discover if 21st Century after-school programs improve students' in-school performance and out-of-school experiences and behaviors, for whom these programs work, how they work, and under what circumstances they work, and (2) to identify ways to increase the effectiveness of after-school programs and to sustain them beyond the federal 21st Century grant.   The plan for accomplishing these purposes rests on key principles tied to the successful conduct of national evaluations in general and on a framework of

---

[2]Feister et al. (2000) underscore these observations in their recent evaluation of the The After School Corporation's (TASC) after-school programs in New York City.

major factors and their relationships that plausibly link after-school programs to positive changes in students' learning, behaviors, and personal growth.

Principles Guiding the National Evaluation of 21st Century Programs

The national evaluation of 21st Century programs is intentionally *broad in coverage*. Comprehensiveness is a critical principle in evaluations in which several specific interventions comprise an overall programmatic initiative. It is critical that national evaluations, unlike more targeted evaluations, have sufficient breadth to ensure exploring competing theories and explanations related to the potential outcomes that different interventions, or their differential implementation, may intentionally or unintentionally produce. Research findings and practitioners' experiences often are inconclusive about these matters. For example, research about the benefit of flexibility and choice in students' after-school activities so far has been inconsistent and would spawn different propositions. Some research suggests that more positive student-staff interactions are associated with greater flexibility for students associated with the selection of activities (Rosenthal and Vandell 1996), but other research has found that such flexibility is associated with lower language arts grades (Pierce et al. 1999). A current hypothesis of interest is the extent to which flexibility and choice have positive affects on the cognitive outcomes of middle-school children and are less beneficial for elementary children.

The national evaluation of 21st Century programs takes a *longitudinal approach*. Programs are dynamic rather than static; as they evolve, they change in their organization, content, staffing, and approach. While programs can mature and overcome difficult startup challenges, it is possible that they can also suffer setbacks (for example, changes in key staff positions, resources, or broader policies affecting after-school services.) It is important to capture these changes and to interpret results in light of them. Similarly, the length of time required for a program to produce observable changes varies. How long it will take students to accumulate the benefits of a program is often unknown at the outset of an evaluation. Many researchers expect that when participation ceases, benefits will start to erode. Nevertheless, latent effects, while often puzzling to explain, have been found by researchers. For these reasons, it is important to provide ample time to detect changes--for example, measuring changes while participants are involved in programs and ideally for a few years after services have stopped.

The national evaluation is designed to ensure credibility in the *measurement of program impacts*. It incorporates treatment and control/comparison techniques that are designed to separate changes in students that are attributable to participation in 21st Century programs and changes that are attributable to normal growth and other school, after-school, or home experiences. Most present research literature reporting after-school effects is hampered by a limited ability to attribute changes to programs. Being able to attribute changes correctly is important if the national evaluation is to capture a true picture of the impacts of after-school participation.

Framework of Factors and Key Relationships in How 21st Century Programs May Lead to Positive Student Outcomes
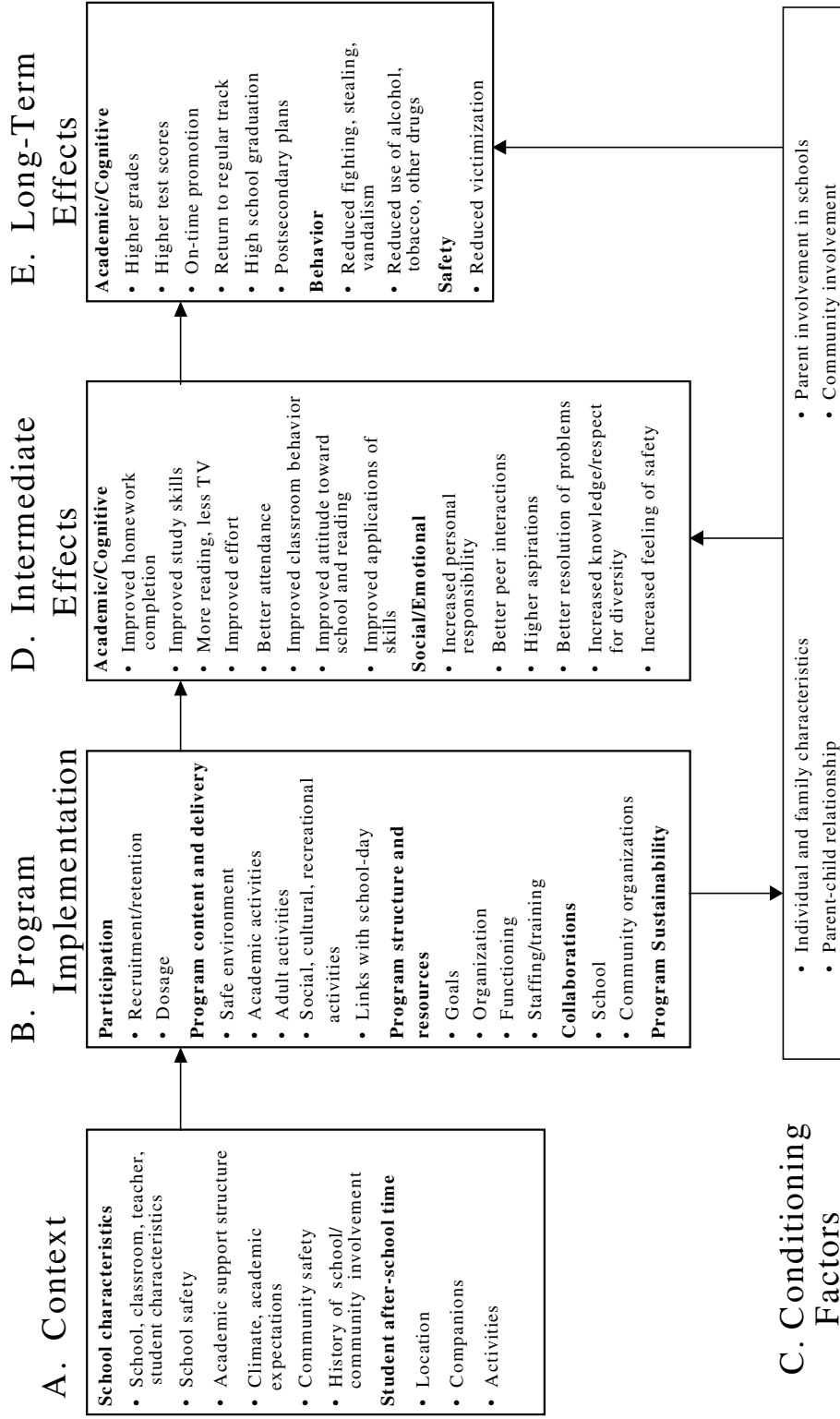
Although there is considerable variation in implemented after-school programs and a paucity of strong research findings on which to rely, it is possible to construct a general logic model and conceptual framework to guide the national evaluation. These tools help to direct the ED and Mott evaluation resources to appropriate areas of inquiry, data collection, and analysis. Figure 1 offers a graphical representation of the logical relationship among five main topical areas that are central to the national evaluation. These areas include: (A) the context in which each after-school program operates: (B) implementation of the after-school program; (C) family, individual, and community conditioning factors that in turn affect (D and E) students' intermediate and long-term outcomes. The figure highlights how after-school programs are embedded in the larger constellation of school, community, and family influences that contribute to youngsters' outcomes in and out of school. How after-school programs are shaped and how they shape these other influences, is key to understanding their ability to produce desired outcomes.

The following sections elaborate on each of the topical areas, indicating their relevance to the objectives of the national evaluation and how elements are related within and across areas. We begin with the context in which after-school programs are introduced. Next we turn to the outcomes that various research studies and proponents suggest are likely to ensue from after-school programs. We address the topical areas of program implementation and conditioning factors last, largely because after-school programs' impacts on student outcomes so heavily depend on the chains of events and experiences that these areas encompass.

The Context: School/Community Characteristics and Students' After-School Time

Obtaining a significant amount of information related to schools and communities is critical to fulfilling the objectives of the national evaluation. For example, identifying the circumstances under which after-school programs yield impacts requires information about the educational and policy climate of the schools (for example, the level of expectations placed on children and whether a school has failed to meet state performance standards). Overall perceptions of safety in school and in the community also are important for interpreting impact results related to students' sense of security and explaining differences in after-school programs' success in recruiting and retaining participants. The historical relationship between schools and community organizations often affects how well the two work together to develop an after-school program responsive to school and community needs. Differences between urban and rural communities also are important to interpreting after-school program implementation, accessibility, and effects on families and students. The access of different groups within the school community to the after-school program is a major issue. Charges for services and geography may be key factors in limiting some groups' attendance. Furthermore, a lack of sensitivity to ethnic differences may contribute to some groups' reluctance to participate.

FIGURE 1
LOGIC MODEL FOR UNDERSTANDING THE EFFECTS OF 21st CCLCs

A. Context

School characteristics
- School, classroom, teacher, student characteristics
- School safety
- Academic support structure
- Climate, academic expectations
- Community safety
- History of school/community involvement

Student after-school time
- Location
- Companions
- Activities

B. Program Implementation

Participation
- Recruitment/retention
- Dosage

Program content and delivery
- Safe environment
- Academic activities
- Adult activities
- Social, cultural, recreational activities
- Links with school-day

Program structure and resources
- Goals
- Organization
- Functioning
- Staffing/training

Collaborations
- School
- Community organizations

Program Sustainability

C. Conditioning Factors

- Individual and family characteristics
- Parent-child relationship
- Parent involvement in schools
- Community involvement

D. Intermediate Effects

Academic/Cognitive
- Improved homework completion
- Improved study skills
- More reading, less TV
- Improved effort
- Better attendance
- Improved classroom behavior
- Improved attitude toward school and reading
- Improved applications of skills

Social/Emotional
- Increased personal responsibility
- Better peer interactions
- Higher aspirations
- Better resolution of problems
- Increased knowledge/respect for diversity
- Increased feeling of safety

E. Long-Term Effects

Academic/Cognitive
- Higher grades
- Higher test scores
- On-time promotion
- Return to regular track
- High school graduation
- Postsecondary plans

Behavior
- Reduced fighting, stealing, vandalism
- Reduced use of alcohol, tobacco, other drugs

Safety
- Reduced victimization

6

Information about student demographics is essential for assessing the accessibility of different subpopulations. And knowledge of demand for services and awareness of after-school program opportunities among students and parents in the schools are key indicators of who is being reached by programs and who could be reached.

The policies, services, and contextual aspects of host schools also significantly influence the role played by after-school programs and can be important to understanding centers' effectiveness. For example, after-school programs that reinforce a climate of high expectations from the regular school day may be more effective than programs appended to less supportive school climates. Relatedly, after-school centers that are embedded in whole school reforms may have higher prospects of sustainability and, as a consequence, be better able to recruit, train, and retain a qualified staff. Mapping such information over the course of two or more years also can inform assertions that after-school programs are associated with changes in the larger school climate and with academic performance.[3]

Capturing information about students' activities once the regular school day concludes is crucial to the national evaluation. Depending on their age and circumstance, some children go home, some go to 21st Century or non-21st Century activities (such as sports or clubs), and others spend the time hanging out with friends. It is critical to learn about the after-school period to assess whether 21st Century students in fact have different learning experiences, form different relationships, and engage in more positive behaviors than similar students who do not participate in the 21st Century program. An important consideration for the national evaluation is addressing the possibility that in some communities, the 21st Century program's impacts may be reduced in magnitude because many non-21st Century students also receive other structured after-school support.[4] Without knowledge of what students who are in the full sample do in the hours after school, interpretations of impact results could be misleading. With such knowledge, the national evaluation will be able to conduct two types of comparisons. One will assess whether 21st Century programs have effects over and above those of other after-school programs that students attend. The other will use advanced analytic approaches to compare the outcomes

---

[3]Descriptions of how the operations of after-school programs appear linked with changes in schools' contexts can inform these assertions. Concluding that such changes occurred because of after-school programs would only be possible through controlling the presence of these other factors. This is not a feasible option in the national evaluation.

[4]The national evaluation's initial screening calls to 21st Century program directors found that the inclusion of educational components was seen as distinguishing 21st Century programs from nearby other after-school programs. This suggests the 21st Century centers may have greater impact on students' academic performance than other after-school services in the neighborhood.

of 21st Century participants' to those of similar students who do not participate in any structured after-school programs.[5]

Intermediate and Long-Term Effects: Key Outcomes

Consistent with the blend of needs fostering the 21st Century program (learning opportunities, social/cultural/physical development, safe and structured childcare), numerous student outcomes are expected of these after-school centers.[6] These include students' academic performance, positive behavioral changes, and increased personal competence in solving problems and valuing diverse traditions, and improved security. In conceptualizing how after-school programs can affect these outcomes, we have imposed a sequential order that separates outcomes into two stages: intermediate and long-term. The intermediate outcomes (for example, improved study skills, feeling secure, and increased interest in reading) are assumed to precede the longer term. The longer-term effects reflect changes that result from the sustained influence of intermediate effects. For example, grades and test scores are unlikely to show impacts unless students expend greater effort in the classroom or attend school more often. Similarly, risk behaviors are unlikely to be affected unless students first exhibit greater personal responsibility and bonding with peers who share positive values.

The division of effects into intermediate and longer term provides a temporal view of the order of certain changes and a reasoned basis for interpreting results over the multi-year course of the national evaluation. Arguably, some intermediate effects may be considered as stand-alone accomplishments for after-school programs. It is difficult to conclude that an improved self-concept, for example, sustained over time, is not a major benefit for youth, irrespective of whether it leads to higher grades or pursuit of post-secondary education. In the context of the 21st Century program, however, there is a clear expectation that the program should improve measures of in-school performance, as well as measures of out-of-school behaviors. For these

---

[5]These techniques are based on an instrumental variables approach that statistically allows subgroup impacts to be estimated within the larger sample used to compute impacts. These techniques are discussed in the National Evaluation's design report (Dynarski et al 2000).

[6]The research literature on in-school outcomes is mixed in findings and uneven in quality. A number of studies, including those investigating the Big Brothers/Big Sisters Boys and Girls Club-Educational Enhancement Program (EEP), Coca-Cola Valued Youth, Dallas School District, EXTRA Tutoring, Howard Street Tutoring, L.A.'s Best, Milwaukee School District, Quantum Opportunities, and Support Our Students, present evidence of positive effects on in-school outcomes. Other evidence from these same studies points to no effects or even negative effects, for some in-school outcomes. Researchers also have investigated a range of out-of-school outcomes (less risky behavior, reduced drug and alcohol use, decreased violence, behavioral incidents, higher self-esteem). The results are similar to those for in-school outcomes. Some studies show positive effects for specific programs and for some outcomes, while other studies indicate no, or occasionally negative, effects for these outcomes.

reasons, we consider increased aspirations and self-concept as intermediate steps to accomplishing these longer-term results.

The breadth or narrowness of goals espoused by 21st Century programs (and how well these goals align with centers' activities) is likely to exert a strong influence on the types of effects achieved by individual centers and the program as a whole. While programs can produce a range of unintended results, it is reasonable to assume that programs will effect changes in the specific outcomes they seek to influence, rather than those they see as outside their mission or current capability. For example, programs that concentrate on improving reading achievement and exclude areas of creative expression may see some improvements in achievement, but they are unlikely to show very many other intermediate or long-term effects (for example, higher aspirations). Importantly, this implies that after-school programs more closely approximating the broad mix of emphases defining the 21st Century "intended program" are likely to exhibit impacts across a broader range of outcomes.

Program Implementation

Importance of Recruitment and Retention. While the effects of after-school programs are likely to depend on a combination of factors, basic to their occurrence is students having adequate exposure to a program. It is almost axiomatic that the success of any intervention is conditional on the intended beneficiaries receiving a sufficient amount of the treatment in question. Evidence from a limited number of studies of the effects of after-school programs echoes the proposition that longer participation is related to improved outcomes (Fashola 1999, Rodriguez et al. 1999, Vandell and Pierce 1999, and Baker and Witt 1996). Clearly, for 21st Century programs to change students' performance and behaviors, centers must first attract participants and sustain their involvement for some period of time. In any examination of such effects, however, steps must be taken to overcome selection biases. Duration in after-school programs is likely to reflect such biases from two opposite ends of the spectrum. On one end are students who face more challenges in learning and thereby may be encouraged (or required) to participate in after-school programs for longer periods of time. At the other end are students who participate more because they have more motivation to join school-based activities and are generally more successful in school.

Recruitment is the first important step in engaging students to participate in an after-school program. Active outreach through community-based organizations as well as the school itself is likely to give parents and students greater confidence in an after-school center's ability to address diverse student and community needs. The basis on which programs enroll students also may influence how much the program appeals to students and retains them. For example, requiring students to participate in after-school instruction because of their lagging academic performance may increase the obstacles that programs have to overcome in keeping after-school attendance and engagement high. Moreover, enrollment fees may be disincentives to students' long-term participation. Alternatively, requirements for routine attendance and the risk of losing one's place in the program may boost attendance and retention.

Importance of Dosage. A limited body of empirical evidence informs the amount of after-school participation necessary to produce effects on different outcomes. One objective of the

national evaluation is to shed light on this crucial question. Nevertheless, some rough benchmarks are available. For example, ED's guidance for creating quality programs calls for after-school services to be offered a minimum of 15 hours each week (5 days a week for 3 hours each day) (U.S. Department of Education 1998). Of course, this benchmark does not indicate how many weeks or even years students have to attend before effects are likely to be realized. If students attended at the ED recommended weekly rate for the entire school year, the additional time they spend in learning activities could be substantial. Assuming a 180-day regular school calendar, a five-hour regular instructional day, and two-thirds of after-school time devoted to educationally enriched activities, the after-school program results in 360 hours of additional instructional time, a 40 percent increase.

Many after-school participants may not achieve the above dose of hours, given students' routine absences, family moves, and program schedules that are shorter than ED's suggested ideal. A key issue in setting expectations for the national evaluation's findings concerns how much after-school involvement may be reasonable for program impacts to ensue. Available research can assist somewhat in suggesting dosage levels that may induce program effects.

Current research linking dosage to positive outcomes from after-school participation has generally shown that longer duration is better, rather than how dosage is related to gains. For example, the Extended Day Tutoring Program in Memphis City linked higher attendance rates with better student performance (Fashola 1999). Rodriguez et al. (1999) found that youth participating in 4-H for longer than one year scored higher on leadership, conflict resolution, communication, and self-confidence. Baker and Witt (1996) estimated dosage by counting the number of after-school activities in which students participated. They found that students who took part in the most activities offered by an after-school program posted higher grades than nonparticipants, and youth who participated in five or more activities had higher grades than youth who participated in fewer activities. Vandell and Pierce (1999) uncovered positive effects on work habits and attendance when students attended the program for more days. However, they found no effects on higher academic grades. The national evaluation affords a major opportunity for assessing what doses of after-school exposure are associated with different effects and how different measures of dosage relate to each other.

Because gains in achievement are conceived as a longer-term outcome than some of the intermediate outcomes listed above, it is particularly important to consult research external to after-school programs to suggest levels of dosage that may relate to changes in achievement. Unfortunately, the evidence is far from consistent in this area. For example, Title I compensatory programs which amount to about 10 to 15 minutes additional instruction each day (about 45 hours or more additional instruction each year) have not amassed much evidence of impacts on student achievement (Puma et al. 1997). Askoy and Link (2000), however, have found that increasing math class by ten minutes each day (an estimated 30 hours of additional instructional time for the school year) increased average math test performance by 5 to 6 percent. Relatedly, Cooper et al.'s (2000) meta-analysis of evaluations of summer school programs indicates statistically significant effects on standardized test scores between .24 and .31 standard deviations for students in grades K-3 and between .14 and .19 for youth in grades 3-6. These programs typically involved 60 hours. A recent study of supplemental after-school and summer instruction for Chicago Public School students who had failed to achieve the necessary scores for promotion to the next grade reveals modest effects on students' test score gains for the school-

year supplement but much larger effects for the summer program (Roderick et al. 1999). The after-school program in Chicago amounted to about an hour of additional instruction each day and the summer program amounted to 90 or more hours of instruction depending on the students' ages.

The above results, while uneven and drawn from different types of programs with different levels of instructional intensity, suggest that it may be possible to see modest effects on achievement when students supplemental dose of instructional time is upwards of 60 hours. Translated into after-school terms, this could mean that students who participated in one hour of instruction, five days a week, for six weeks might post some gains in test scores. Nevertheless, because many after-school programs by nature are not instructionally intensive, it may be safer to anticipate achievement gains when dosage rises to the level of 100 hours or more.

Such speculation on the effects of dosage needs to be tempered by the critical influences that stem from how after-school programs are focused and function. Although time merely spent in after-school programs may yield important benefits for some students (for example, increased security, improved homework completion), a limited but growing body of research suggests that most effects desired from 21st Century programs require the presence of features associated with quality after-school programming.   These features, many of which were discussed in the introductory section of this paper as elements of the intended program, include the content provided by programs; the delivery of the content; the structures and resources supporting the development and daily operation of after-school programs; collaborations with schools, parents, and the community; and the program's potential to be sustained.

Importance of Program Content and Delivery

Engaging Academic Activities with Links to Regular School Curricula.   Homework, tutoring, focused instruction, hands-on learning, and enrichment activities are all ways in which structured after-school programs address students' academic needs. Establishing an appropriate mix of these approaches and infusing curricular themes within the broad range of activities are likely to prove important to centers' efforts to improve students' academic outcomes in two ways. First, they respond to the expectations of key stakeholders (parents, regular day teachers) and thus aid in the recruitment and retention of students. Second, they are instructionally sound in their reinforcement of academic material and their engagement of students through different modes.

Activities Focused on Developing Students' Assets.   Social, cultural, and recreational activities that present students with opportunities to explore interests, express talents, develop ownership, work in teams, and handle conflict are key to developing the social skills, confidence, and protective factors necessary to meet the challenges that many students encounter at home, with peers, and in the classroom. These types of activities also serve to promote students' duration and engagement in the after-school program.

Activities Characterized by Positive Interactions and Personalized Contact. The scale and character of interactions can significantly influence students' engagement in the after-school activities of centers and in overall student satisfaction. Pierce (1999) found that after-school

programs in which staff interacted more negatively with students were associated with lower academic reading and math grades for participants. Higher child-staff ratios also have been linked with more negative child/staff interactions (Rosenthal and Vandell 1996). It is important to note the growing body of general education research which has shown that smaller classes and smaller schools improve a range of student outcomes, including achievement. The dimensions that produce this effect appear to be fewer disruptions that teachers have to address and increased contact between students and teachers. It is likely that such factors also apply to after-school programs' effectiveness. Consistent with this research, we suspect that an appropriate child-staff ratio (ED suggests 10:1 for young children, and 15:1 for older youth) will influence the 21st Century program effects on many outcomes.[7]

Student Involvement in Center Activities. An important consideration in linking the mix of activities to the effects achieved through after-school programs is the varied types of activities to which students may be assigned. Determining which students are assigned to different activities (for example, children below minimum proficiency levels may be required to spend more time in tutoring sessions rather than enrichment activities) is important to understanding how after-school programs affect subgroups differentially. Furthermore, in many centers students will choose activities. While it may not prove feasible to gather specific breakdowns of program activities for each child in the entire national evaluation sample, uncovering the extent of variability can be useful when analyzing data and interpreting findings.

Activities Serving Parents and the Community. Efforts that link parents and the community to the center are likely to stimulate students' positive attitudes toward the after-school program and to aid in recruitment and retention. The existence of such activities also may encourage parents' and other participating adults' feelings of attachment to the community, and discourage families from changing their residence. Furthermore, educational opportunities that draw parents into the center can spill over into offering models of behavior for the children; and informational sessions and cultural activities can improve communication between parents and children and between parents and the schools.

Activities serving parents generally fall into a variety of categories, not all of which are equally likely to influence the range of relevant student outcomes. For example, after-school centers may afford opportunities for parental involvement in advisory roles or planning committees. They also may include roles for parents to assist in raising funds or in volunteering for activities.   While these types of activities can provide valuable experiences and demonstrations of support, they often reach a limited number of parents and may only remotely influence how students perform in and out of school. (It is reasonable to assume, however, that these activities may influence overall student participation in centers.) By contrast, activities that

---

[7]The most recent version of *Working for Children and Families: Safe and Smart After-School Programs* (April 2000) indicates these desirable ratios, noting research by Vandell that ratios in excess of 13:1 appear to produce behavioral management difficulties for staff and long waiting times for young children. This report also notes that groups larger than 30 students detract from the learning function and in certain activities are potentially dangerous.

provide parents with sessions in how to improve their skills in parenting and in reinforcing schoolwork at home may have a more powerful association with the outcomes of their children. More specifically, classes that help parents positively manage the behavior of adolescents may influence the parent-child dynamic and translate into improvements in students' social and emotional behavior. In general, we expect that the more tangibly and directly an activity impinges on parental roles, the more likely will be the relationship with student outcomes.

Importance of Program Structure and Staff Resources

Goals, Leadership, and Organization. To build programs with the features described above requires that centers have adequate support and sound organization. Formal program goals and objectives need to be established in order to construct programs directed toward accomplishment of those goals. Organizationally, appointing a full-time center director may be key to ensuring goals are developed with broad input, communicated to stakeholders and clients, and followed through in terms of program offerings and assessments. Recruitment of staff and students, coordination with the schools and community groups, on-site supervision of the after-school team, and building a strong working relationship with the principal, parents, and relevant district staff are additional demands that reinforce the potential significance of a full-time center director.

Procedures and Structure. From a structural perspective, formal role specifications and procedures are critical to ensuring a smoothly functioning and predictable environment that results in high retention of staff and students. To keep center activities fresh, challenging, and coordinated with the regular school program requires regular meetings for staff, adequate planning time, and the provision of professional development opportunities.

Skilled and Stable Staff. A stable, qualified staff undoubtedly is a major component of an effective program. Stability in the form of low turnover will be enhanced by adequate compensation and supportive working conditions. Defining the specific qualifications that matter for after-school positions is more complicated, with little research on which to rely. Staff who are skilled in building learning opportunities into a range of activities and have experience assisting children acquire proficiency in academic areas may be a major influence on how effectively centers perform, particularly with respect to academic areas. The educational level of the staff may prove important to certain outcomes (particularly those relating to academic skills and educational aspirations), but we also suspect it may improve relationships with regular school staff and thus further communication and content linkages. Professional training is likely to be a significant factor in centers' effectiveness because it focuses on the skills staff need rather than the qualifications they come with. Learning firsthand from staff how well prepared they feel for their roles (for example, adapting to children from different cultures and with special needs; managing younger and older children through positive and personally reinforcing techniques) will allow the national evaluation to identify skills that should be targeted.

Importance of Collaborations

With Schools. Regular interactions and communication channels that link after-school staff and regular school staff are critical to creating learning and developmental activities that complement and reinforce those of the school day. These collaborations can be significant in giving both groups of staff insight into the problems faced by individual children, modes in which they might learn more effectively, and experiences that can help them blossom. Interaction and communication also can help alleviate the tensions stemming from shared space and resources–a major issue to most after-school centers. Productive collaborations between regular and after-school staff will depend heavily on principals' general support and commitment to the after-school program, and specific support for making communications between both staffs a high priority (Feister et al. 2000). It may take time for these traits to be cultivated and developed among principals whose first priority is likely to focus on smooth functioning of the regular school program. Furthermore, with respect to building linkages, hiring teachers from the regular school program for the after-school program is also likely to be advantageous in promoting effective working relationships and frequent communication.

With Community Partners. Active outreach to and collaborations with community organizations may be associated with after-school programs having larger effects; however, the relationship is likely to be indirect. We expect that collaborative community partnerships may be linked to student outcomes through the contributions that these organizations make to strengthen various aspects of the after-school program. Such potential contributions include expanding the expertise available to the after-school program in the form of speakers, mentors, and volunteers; providing opportunities for students to undertake community service; offering opportunities for older students to intern in businesses or nonprofit organizations; helping in the recruitment of staff and students; sharpening the focus of the after-school program on the most critical needs of students and parents; and collaborating in fundraising efforts that enable 21st Century grantees to sustain the after-school program. Several factors are likely to emerge as significant in realizing these potential contributions. These include the involvement of community organizations in needs assessment, goal-setting, and program review processes; routine meetings of designated lead staff from each organization (possibly through an advisory board that meets regularly); development of clear understandings of the expectations of partnering organizations; and a consensus-building managerial approach on the part of the school principal and after-school coordinator.

The large variety of organizations that serve as community collaborators in after-school programs raises questions about whether some organizations are more influential than others on students' outcomes, levels of participation, and centers' long-term continuity. As noted, community organizations that function at a broad institutional level in an area may benefit the programs in after-school centers through the provision of instructors with unique skills and through ascertaining additional funds to continue center operations into the future. Yet if they are detached from the parents and youth in specific neighborhoods served by the after-school centers, they are unlikely to encourage participation in after-school programs among youth in those areas. Furthermore, they are unlikely to guide the centers' activities in ways that recognize and attend to assets that are present in the surrounding community. It will be important for the evaluation to recognize that different types of community organizations (those that are "of" the

community versus those that seek to serve the community as external agents) are likely to be associated with different kinds of results.

Importance of Program Sustainability

Developing self-sustaining after-school programs is a major goal of the 21st Century program. Three years of federal support are expected to transition to a more lasting financial arrangement. While sustainability constitutes an important outcome in and of itself, it is important to recognize that centers' prospects for sustainability also are likely to play an important role in program's outcomes. After-school programs that show strong prospects for continuation are less likely to be considered marginal and will have stronger appeal to staff and parents as choices arise about where to work and live. After-school programs that project continuity also are likely to command greater attention and time investments from regular school staff.

The process of achieving sustainability is likely to depend on the extent to which the after-school program is a key component in the schools' system of support services and in the community's network of services for families. As noted previously, after-school programs that are wrapped into whole school reform efforts may accrue major sustainability benefits from this arrangement. Sustainability and the prospect of sustainability also are likely to be furthered by early planning for the transition to other forms of support. For example, arrangements that graduate cost-sharing with other state or local funds may smooth the transition to these other sources by annually reducing the proportion of federal funds supporting a center. Documented evidence of parent and student satisfaction and program results can also prove particularly important to centers' efforts to achieve sustainability. Finally, many centers may be overwhelmed with day-to-day operations to effectively address future finances; indeed, concerns about future funding may detract from important program and staff development activities. Access to planning support and technical assistance from sources outside the center and achieving sustainability may prove critical to successful navigation of the transition to other forms of support.

Conditioning Factors: Individual Student Characteristics, Child-Parent Relationships, and Parent/Community Involvement

External factors and relationships that intervene between the program and participating students influence the effects of after-school programs on students. Some factors will moderate the effects of after-school participation. For example, specific features of after-school programs will affect students of middle-school age differently than younger students. Students who have greater learning deficits, or who are more at risk academically due to limited English proficiency, may benefit more from after-school programs than students less at risk. Uncovering why such differential effects occur is always challenging, but recognizing their existence can suggest steps for making program adjustments or more strategic targeting of after-school activities.

After-school programs also can alter factors and relationships in an effort to improve student performance and behaviors. Tracking whether changes occur in these arenas will provide

important insights into how after-school programs mediate changes in student outcomes. For example, parents' attachment to the workforce may be strengthened by the care provided by after-school programs. The services after-school programs provide may help reduce the residential mobility of families by increasing ties to the neighborhood school. Parental educational attainment may be aided by adult learning activities provided in after-school centers. After-school impacts on all these outcomes are likely to translate into better child performance.

Parent-child interactions at home may improve through more frequent discussion and spending quality time together. Parents, for instance, may be encouraged to read more to their children and discuss their schoolwork. Increasing parents' knowledge of school programs and children's concerns in school can help parents become more proficient in discussing matters with regular school staff and asking the child about aspects of the school day. Consistent with previous observations, the emergence of these behaviors is likely to occur in programs that sponsor specific events to help parents in these areas.

Similarly, after-school programs are likely to provide a bridge for other organizations in the community to become more active in providing input and guidance to improve various elements of the regular school program. Furthermore, the student-community relationship may be enhanced as participating students undertake community service roles and gain awareness of the assets in the community. Through such engagements, students are likely to increase their sense of personal responsibility and develop problem-solving skills. Finally, the after-school program may help foster community development by collaborations that attract additional health services, neighborhood surveillance, and resources to improve parks, playgrounds, and other forms of physical infrastructure.

B. COMPONENTS OF THE EVALUATION

The overall study of the 21st Century program encompasses both ED components and Mott enhancement components.[8] The two in concert are intended to complement each other and increase what would be learned from either one in isolation. Each has a somewhat different emphasis, however; thus, understanding the different emphases is important for understanding how the two fit together.

As noted above, the ED components focus on examining how 21st Century programs are implemented and how they affect student outcomes—in particular, outcomes related to education, social, and personal behavior. The ED components will enable the study to analyze how program effects vary for different groups of students, in different local and educational contexts, and for different program structures. The measurement design for the ED components emphasizes internal validity in its use of random assignment to measure program impacts for

---

[8]The enhancement components discussed in subsequent sections are under assessment for how their costs align with budgeted resources from the Mott Foundation. Final decisions about specific components will be made in light of these assessments and the foundation's priorities.

elementary-school aged students, and external validity in its reliance on randomly sampling programs serving middle-school aged students as its basis for measuring program effects. Policymakers and funders considering the overall 21st Century program are a central audience for the ED study. Practitioners seeking insights into how programs work and sustain their operations over time are another key audience for the study.

The central role of the Mott enhancement components is to deepen and expand knowledge of quality after-school programming. The enhancement will gather in-depth information about 21st Century centers that have elements in place that previous research suggests are related to program quality. For example, the enhancement will explore: the roles of community partnerships in implementing programs; the role parents and other adults play in program design; implementation, service delivery, and service receipt; the perspectives of principals, program staff and program participants about their experiences in the programs; and what can be learned from successful after-school programs that were operating before the 21st Century program began. A study of the time use patterns of middle-school students who are in 21st Century centers and of those who are not in 21st Century centers during the hours of 3:00 and 6:00 PM each weekday will provide insights into students' actual activities, associations, levels of engagement, and emotional well-being after the regular school day is over. Because the overall study will include detailed information about program practices, along with student outcomes data and rigorous impact measurement designs, the study will be able to explore whether program practices thought to be effective are indeed linked with improved outcomes for students. After-school program designers and technical assistance providers are a key audience for the Mott enhancement, along with a wide range of policymakers and funders.

A graphic display is helpful to showing how the ED and Mott components of the overall study inter-relate. Figure 2 emphasizes the two basic dimensions that frame both studies: (1) a study of program impacts on intermediate and long-term outcomes of students and their parents and (2) a study of program implementation that addresses the processes and experiences that are essential to understanding after-school programs. The scheduling of most data collection and analysis is heavily concentrated in the period from Fall 2000 through the end of 2003. A planned longer-term examination of impacts for middle-school students potentially will extend the evaluation for four additional years. Common elements in the form of questionnaires and site visits will occur in the grantees sampled as ED and Mott sites. (The shaded areas in Figure 2 represent these shared approaches.) The common elements will create the consistency needed for the data to be combined and results generated for the overall study. For example, results for program impacts on students' aspirations will be estimated using data from all sites regardless of their selection into the ED or Mott samples.

Figures 3 and 4 depict key research components and underlying questions for the impact and implementation dimensions of the national evaluation. These figures also provide an overview of the target sample sizes comprising each component. Importantly, while impact and implementation will be assessed independently to address several questions, data from both sources data will be combined during the analysis phase of the study to explore how various features of programs link to greater levels of success and to help shed light on the presence or absence of results.

FIGURE 2
ED AND MOTT STUDY COMPONENTS

2000   2003

IMPACT STUDY

ED Impact Study 30 Middle School (MS) Sites (Comparison Design)
                   Up to 20 Elementary School (ES) Sites (RA Design)

Mott Enhancement 5 Middle School Sites (Comparison Design)
                    Up to 5 Elementary School Sites (RA Design)

Mott Enhancement
Student Follow-up for 5 MS Sites

IMPLEMENTATION STUDY

ED Implementation Study
     2 visits to 30 MS sites and up to 20 ES sites

Mott Enhancement
     Principal and staff survey for all sites
     3 visits to 5 MS sites and up to 5 ES sites

Mott Enhancement
     Study of after-school time in 5 MS sites
     Participant and nonparticipant surveys 10 sites
     Lessons from non-21st Century programs

Gray shade indicates components sharing instruments or protocols

18

FIGURE 3
COMPONENTS OF THE 21ST CENTURY IMPACT STUDY

Middle School Study	Elementary School Study
ED 30 Grantees Mott 5 Grantees 35 grantees selected randomly 5 Mott grantees identified based on program components Comparison student design using propensity-score matching Samples of up to 150 students per grantee (ED sites), with baseline and two follow-ups Samples of up to 300 students per grantee (Mott sites), with baseline and four follow-ups	ED: 10 to 20 Grantees Mott: up to 5 Grantees Grantees selected purposively 5 Mott grantees identified based on program components Experimental designs for two grantee cohorts Samples of up to 400 students per grantee, with baseline and two follow-ups

Major Research Areas of Overall Impact Study

➤ Do programs improve academic skills and test scores?

➤ Do programs increase sense of safety and reduce self care?

➤ Do programs increase positive behaviors in the classroom and out of school and reduce negative behaviors?

➤ What types of students are most affected by programs?

➤ What program factors are related to improved outcomes?

Focus of Impact Study for Mott Enhancement

➤ Do programs enhance developmentally appropriate youth outcomes? Which types of programs have the largest effects on these outcomes

➤ Do programs with strong community partnerships show larger effects?

➤ Do programs with strong parent and community involvement show larger effects?

➤ Which impacts are sustained into the future (for middle school students, are impacts sustained into the high school years)? What types of programs show sustained impacts? What types of students show sustained impacts?

FIGURE 4
COMPONENTS OF THE 21ST CENTURY IMPLEMENTATION STUDY

Middle School Study	Elementary School Study
ED 30 Grantees Mott 5 Grantees 35 grantees selected randomly 5 Mott grantees identified based on program components Two site visits to ED grantees Three site visits to Mott grantees	ED: 10 to 20 Grantees Mott: Up to 5 Grantees Grantees selected purposively 5 Mott grantees identified based on program components Two site visits to ED grantees Three site visits to Mott grantees

Major Research Areas Of Overall Implementation Study

➢ Key contextual issues affecting design of after-school programs
➢ Grantee goals and philosophies and how they are translated into practice
➢ Organizational structures (staffing, management, decision-making)
➢ Services delivered and enrichment/academic emphasis
➢ Student, parent, and other adult involvement in the program
➢ Participant recruiting and participation patterns
➢ Participant experiences and perceptions
➢ Collaborative structures and community partnerships
➢ Links between programs and schools
➢ Challenges to implementing and sustaining programs

Focus of Implementation Study for Mott Enhancement

➢ How do programs implement philosophies and activities to foster developmentally appropriate youth outcomes?
➢ How do programs implement strong community partnerships?
➢ How do programs create and sustain strong parent and community involvement?
➢ What elements contribute to program quality?

A brief explanation about the short-hand terminology used in Figures 3 and 4 is necessary. Central to the Mott enhancement studies is the investigation of developmentally appropriate youth outcomes related to the cognitive, social, emotional, and physical spheres. These child-centered outcomes are grouped for ease of communication under the phrase "developmentally appropriate youth outcomes" throughout the remainder of this paper.

The Impact Study

The main focus of the impact study is investigation of the elements in the logic model (Figure 1) categorized as conditioning factors, intermediate effects, and long-term effects. The core impact questions concern whether programs increase cognitive skills and lead to test score and grade increases; whether programs enhance safety; whether programs increase social and emotional skills of students; and whether they promote more positive behaviors and reduce negative behaviors. The impact study also will explore the types of students who experience significant effects and the types of programs that have significant effects.

The impact measurement design for the overall evaluation, which is depicted in Figure 3, combines two distinct designs. The first design, for elementary schools, is a purposive selection of 21st Century programs that serve elementary school children, with random assignment of participating children into treatment and control groups. The elementary site sample will encompass two waves of elementary grantees—one wave beginning random assignment in fall 2000 and the other beginning in fall 2001. The second design, for middle schools, is a random sample of 21st Century programs that serve middle school children, with comparison schools and children at those schools selected to match the schools and the children in the treatment group. The Mott enhancement sample for impacts will be culled from the larger group sampled at each school level. Because the emphasis of the enhancement is on how quality features can be developed and contribute to stronger impacts, the Mott sample of sites will reflect 21st Century grantees that align most closely with the intended vision which was described earlier in this paper. A series of screening calls and a site visit will be made to the Mott candidate sites as a basis for making the final selection of sites for the Mott sample.[9]

The data needed to conduct the impact study will come from a variety of sources.[10] Parent and student background data and information about outcomes (for example, reading and television watching, feelings of safety, aspirations, activities after school, parent/child interactions, and so on) will be gathered through baseline and followup questionnaires. Teacher

---

[9]Geographic and demographic diversity will be sought in the sample. Candidate sites will be rated for their strengths across the following categories: collaborations, academic/cognitive components, social/emotional/recreational components, parent and community involvement, staff training opportunities, school-program linkages, and inclusion of a summer program.

[10]Background on instruments and the data collection plan is discussed in the national evaluation design report (Dynarski, et al. 2000).

questionnaires for each student in the impact sample will provide two rounds of information about students' academic/cognitive performance and behavior in the regular classroom. In addition, SAT 9 reading tests will be administered to all elementary students in the impact sample. School records will provide information about students' grades, progression, and school attendance. To acquire key information to examine dosage questions, each center will maintain and share individual data on the sampled students' daily attendance in the 21st Century after-school program. These data will be linked with site-visit data obtained from each center to develop an estimate of dosage for each student in the treatment sample. This will allow the analysis to focus on what differences result from various amounts of time spent in 21st Century after-school programs.[11]

To carry out analyses of what kinds of programs work for whom and under what conditions, the national evaluation will pool subgroups of students and programs to correspond with key dimensions–for example, students who are more at-risk, or programs that place a strong emphasis on parent involvement strategies. More discussion about how programs will be coded into types is provided in a later section of this paper and is elaborated more fully in the design report for the national evaluation.

The Mott enhancement's longitudinal followup promises to yield important information about the long-term effects of after-school program participation. As noted previously, the accumulation of important benefits from after-school programs may only appear years later. Should impacts appear on some intermediate outcomes, additional efforts to follow students into later years to see if and when longer-term impacts also will materialize appear warranted. The Mott enhancement will permit the national evaluation to follow students who were in Mott middle-school sites during fall 2000 over four additional years by administering surveys to them in spring 2004 and 2006. The sample for this followup (150 program participants and 150 comparison group members in five Mott middle-school sites or a subsample) will comprise the longitudinal follow-up group. Assessments about the advisability of following particular subgroups of students who exhibit positive results will also be undertaken (for example, setting a dosage threshold where impacts are observable to identify the follow-up sample). The followup will collect important information about the effects of after-school program participation on long-term outcomes, such as course-taking and behavior in high school, high school completion, expectations and plans for postsecondary education, and actions taken to prepare for post-secondary education, such as whether the student has taken the SAT, and visited or applied to colleges or universities. Evidence of effects on high school completion and post-secondary education could potentially have important implications for the future economic opportunities of students who attended after-school programs.

---

[11]Students and parents in the control groups will provide information about participation in various activities in the after-school hours between 3 and 6 PM. It will not be possible to gather precise dosage estimates on the full sample of controls. Useful insights will be obtained from a subgroup of these students through a special study of student time use that is discussed later in this section of the concept paper.

The Implementation Study

The implementation study, which is depicted in Figure 4, encompasses a core set of case studies involving all sampled sites and an in-depth round of case study visits designed to capture important aspects of quality after-school programming in the Mott sampled sites. Overall, the implementation study seeks to understand how 21st Century programs are locally implemented and structured with the intent to identify ways to increase effectiveness and sustain local projects beyond the federal grant. The major questions guiding the implementation study are noted in the figure. They include contextual factors affecting program design, how grantee goals and philosophies translate into practice, how grantees structure their programs, what experiences are afforded students in after-school centers, how school and after-school staff align curricula and collaborate, and so on. The elements in the context and program implementation boxes of the logic model (Figure 1) serve as the focal point for the implementation study.[12]

The core implementation study (Figure 4), like the impact study, involves several common protocols, interview guides, and grantee/center assessment forms to ensure that both the ED and Mott sampled sites generate comparable information. The case studies for the core implementation study will be based on two rounds of site visits. During these visits, relevant parties associated with each center, host school, district, and partner organizations will be interviewed or asked to participate in focus groups. To gather a comprehensive picture of the centers' design and functioning, a wide range of parties will be tapped as respondents.[13] Patterns of service delivery for different students (for example, the amount of time associated with different activities and the likely mix of activities for students during the course of a year) will be a key topic to be explored in the site visit discussions. Further information about actual service delivery will be gathered through observations of a sampling of program activities at each center. Reviews of documents related to center operations (for example, needs assessments, handbooks, and evaluators' reports) will also add insight about such topics as recruitment, plans for staff development, and sustainability challenges facing the center.

The data from the site visits will be condensed into a narrative summary which will provide an open-ended account that organizes relevant knowledge about each grantee and center. The organizational framework for the narrative summary is the list of key research questions which are referenced in Figure 4. Fact-based, descriptive data for each center will be recorded in a separate profile form so that dimensions such as program organization, staff professional

---

[12] Background on the implementation study design and instruments is discussed in chapter 4 of the design report for the national evaluation (Dynarski et al. 2000).

[13] The list includes project directors, center coordinators, center staff, community partners, district representatives, school principals, regular school teachers with students attending the after-school program, middle-school students, parents of participants, and, in some cases, other adult participants in the center.

qualifications, provision of transportation, and student eligibility requirements can be readily accessed and brought into analyses by the research team. Data from the site visits also will be condensed into an assessment form that captures a perception-based, closed-ended categorical summary for each grantee and center in the national evaluation. This assessment will pose a set of questions about which site visitors will be asked to judge evidence gathered after each visit—for example, the extent to which a center allows students flexibility in their choice of activities. These assessments will be used to construct variables describing key aspects of programs in which students in the sample are or have been involved. The resultant variables will be then compare impacts among the different pools and identify program-level characteristics associated with various impacts.
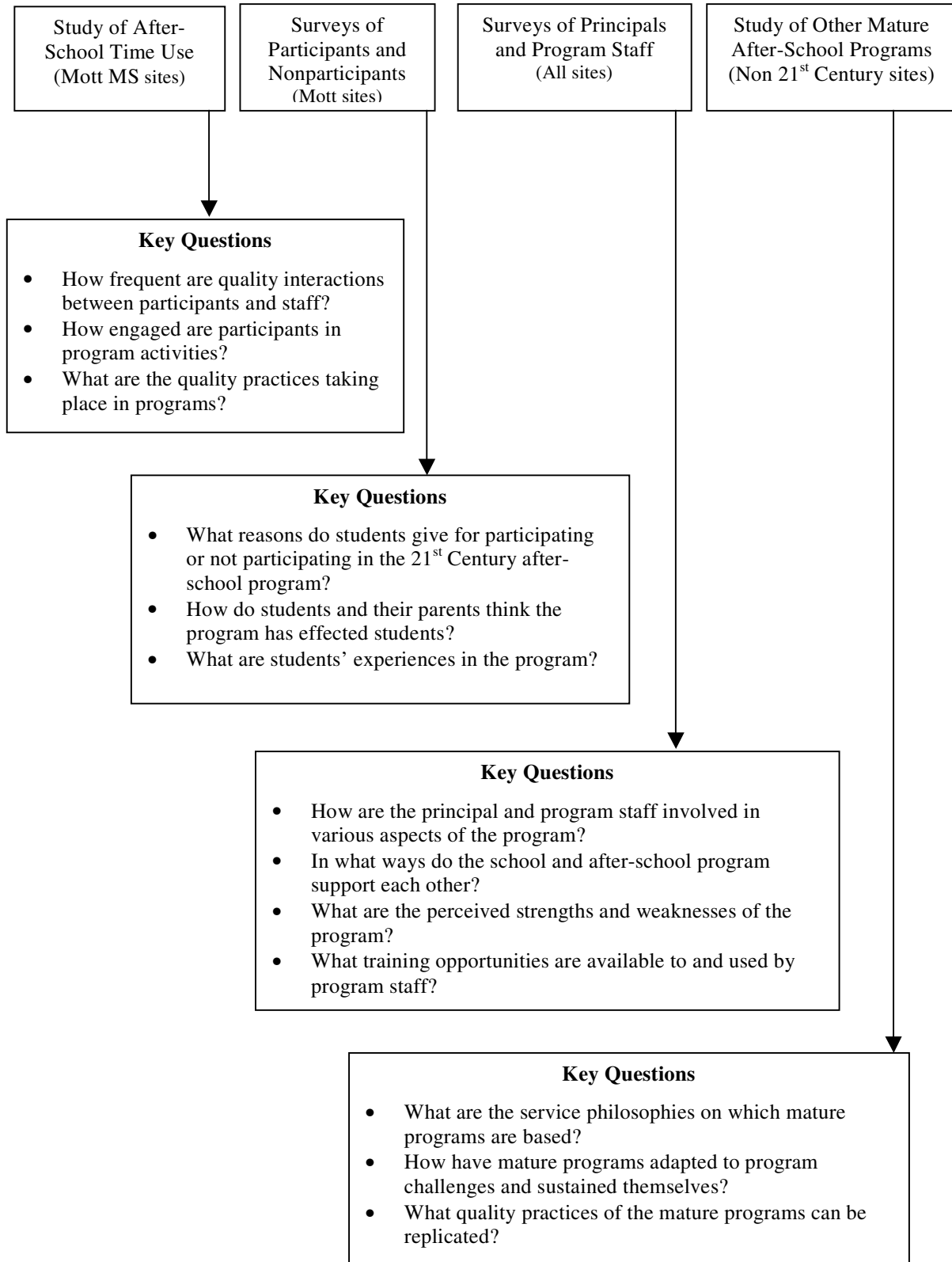
The Mott enhancement provides one additional opportunity to visit sites with quality elements in place to obtain greater insights into the actual workings of these elements and their evolution. The third box in Figure 4 indicates likely issues that this additional visit will explore in the Mott sites. These include how programs implement philosophies and activities linked to the field of youth development, how programs work to create and sustain strong community partnerships, and how programs work to create and sustain strong parental involvement. Some investigation of these issues will be undertaken in all sites, to provide for comparability across the two studies. However, the additional resources provided by the Mott enhancement will facilitate deeper, more thorough investigations of these issues in selected sites. It is also possible that these focal issues may change as the first round of core site visits are completed in these sites and analyses move other compelling issues to the forefront for the third site visit.

Special Studies Supported by the Mott Enhancement

The Mott enhancement study also will explore issues related to after-school program access, services, and best practices that go beyond the above implementation analysis. Figure 5 indicates the Mott enhancement studies that broaden the implementation analysis and provide more information with which to understand and interpret program impacts. These include a study of after-school time use among 21st Century middle-school students and comparison students, surveys of program participants and nonparticipants (parents of elementary and middle school students and also middle school students), surveys of principals and program staff, and a qualitative study of mature after-school programs not receiving 21st Century funding. The focus of each Mott special-focus study is described below.

Study of After-School Time Use. In-depth knowledge would be very useful to constructing a clearer sense of how middle-school youth spend the time between 3:00 and 6:00 PM. The patterns of time use are expected to vary depending on whether students are 21st Century after-school participants, have withdrawn from after-school, or have never enrolled in a 21st Century after-school program. This information can shed light on the contrasts that occur among these groups in the hours after-school. It would permit assessing whether the expectation proves accurate that after-school participants spend more time in academic, enrichment (extracurricular), and sports activities and youth not participating watch more television, are home alone or are with siblings, and spend more time with peers in settings where adults are not present. While the core impact study questionnaires will ask students to report what they did

FIGURE 5
ADDITIONAL MOTT COMPONENTS OF THE NATIONAL EVALUATION

Study of After-School Time Use (Mott MS sites)	Surveys of Participants and Nonparticipants (Mott sites)	Surveys of Principals and Program Staff (All sites)	Study of Other Mature After-School Programs (Non 21st Century sites)

Key Questions

- How frequent are quality interactions between participants and staff?
- How engaged are participants in program activities?
- What are the quality practices taking place in programs?

Key Questions

- What reasons do students give for participating or not participating in the 21st Century after-school program?
- How do students and their parents think the program has effected students?
- What are students' experiences in the program?

Key Questions

- How are the principal and program staff involved in various aspects of the program?
- In what ways do the school and after-school program support each other?
- What are the perceived strengths and weaknesses of the program?
- What training opportunities are available to and used by program staff?

Key Questions

- What are the service philosophies on which mature programs are based?
- How have mature programs adapted to program challenges and sustained themselves?
- What quality practices of the mature programs can be replicated?

after-school during the previous week, a sharper picture can be obtained when information about these issues is collected in real time and at a variety of points.

The collection of experience sampling data, a technique pioneered by Csikszentmihalyi and Larson (1987), provides a means of constructing this sharper picture. It can be used to document who youth are with, where they are, what activities they are involved in, their level of involvement or engagement, and their affect or emotion. The data can be collected by giving a sample of middle-school youth "wrist watches" programmed to beep 15 times over a five-day period. When beeped, the youth record preset categories of information in a small booklet.

Categories include time of day, day of week, where the youth is (for example, home, school, friend's house, shopping mall), who else is present, and specific activities (for example, one-to-one instruction, instruction in a group, homework, television, coached sports, pick-up sports). Prior observations of programs will be used to adequately customize the specific activities used as response options to the 21st Century centers where the study will occur. Two distinct one-week periods are desired to capture variations over the school year. Initial plans suggest a sample of 300 students drawn from 5 middle-school grantees (with two centers apiece) resulting in approximately 60 students for each grantee (30 treatments and 30 comparisons). While students who leave the after-school program will continue to be "beeped" as part of the study, it probably will prove necessary to add new students to the treatment sample to overcome attrition problems that can restrict what is learned about the uses of time in after-school programs. The data from this study can be analyzed in at least three ways to help sharpen overall understanding.

1. To broadly compare the experiences of different groups of youth.

2. To contrast the experiences of youth in 21st Century centers that use different approaches to after-school programming and that may have different kinds of outcomes.

3. To elucidate processes that account for associations between program participation and educational outcomes.

Surveys of Program Participants and Nonparticipants. The kinds of experiences that participants have in 21st Century programs and how participants believe they are affected by the programs can provide useful information to guide program design and development. When compared with student and staff turnover in programs, these types of information can offer insight into what may be the contributing factors. Also, asking nonparticipants about their reasons for not participating, and whether barriers exist that hinder them from participating, can contribute to a better understanding of how 21st Century programs can be more appealing and possibly attract and retain more students. It also will inform the question of whether students and parents have equal access to the 21st Century after-school programs and assessing how much additional demand exists for access to after-school programs.

The participant survey will be administered twice in Mott sites starting with the middle-school Mott sites in spring 2001. Ideally the survey will be appended as a module to the impact study's first and second student followup questionnaires.[14] Students in elementary Mott sites will receive this survey beginning in spring 2002. The survey will provide information about the after-school experiences of 21st Century participants, including the after-school services and activities in which students participate, recommendations for new activities and services, benefits from involvement, and the effect of participation on their families.

<div style="border:1px solid black; padding:1em;">

Participant Survey Topics

- Type of Services Provided by Program
- Type of Services Used, Frequency of Use, and Satisfaction with Services
- Availability of and Participation in Joint Child-Parent Activities
- Interest in Activities Not Currently Offered
- Methods to Encourage Participation
- Recommendations to Change Services Provided
- Notification/Recruitment Process
- Benefits from Involvement
- Frequency and Quality of Student-Adult Interactions
- Effect of Participation on Family Situation
- Equity and Access Issues

</div>

The survey of nonparticipants will be administered once in spring 2001 for middle-school Mott sites and spring 2002 for elementary school Mott sites. Plans call for samples of 1,000 nonparticipating students at middle school Mott sites and 1,000 parents of nonparticipating students at elementary school sites. While the student surveys will try to determine students' reasons for not participating, the parent survey will be designed to address why the parents think their children do not attend the after-school program.

---

[14]Response burden as affected by the number of questions asked may necessitate conducting this survey through a standalone questionnaire.

```
┌─────────────────────────────────────────────────────────────────┐
│              Nonparticipant Survey Topics:  Students              │
│                                                                   │
│      •   Knowledge of Program                                     │
│      •   Interest in and Need for Program                         │
│      •   Reasons for Not Participating                            │
│      •   Reasons for Participating in Other After-School Programs  │
│      •   Prior Experience with After-School Program               │
│      •   Interest in Activities Not Currently Offered             │
│      •   Ways to Encourage Participation                          │
│      •   Notification of Program Services and Activities          │
│      •   Feelings About Program                                   │
│      •   Impressions of Equity and Access Issues                  │
│      •   Current After-School Activities                          │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────────┐
│              Nonparticipant Survey Topics:  Parents               │
│                                                                   │
│      •   Knowledge of Program                                     │
│      •   Reasons for Not Participating                            │
│      •   Reasons for Child's Participation in Other Programs       │
│      •   Prior Experience with After-School Program               │
│      •   Changes Needed for Child's Participation                 │
│      •   Ways to Encourage Child's Participation                  │
│      •   Notification of Program Services and Activities          │
│      •   Feelings About Program                                   │
│      •   Impressions of Equity and Access Issues                  │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

Surveys of Principals and Program Staff. To complement perceptions obtained from the case studies in the core implementation study, standalone surveys of principals and program staff will afford a quantified means of presenting information about how these key actors in the operation of after-school programs conduct their roles, tap resources, and coordinate regular and after-school programs. The Mott enhancement's principal survey will contribute to a better understanding of the school settings in which 21st Century programs operate. Findings from the TASC evaluation attest to the crucial role of the principal in the implementation of an after-school program (Fiester et al. 2000). Surveys of principals will support an investigation of this role, the extent to which principals support and are involved in the program, and the ways in which programs possibly can create stronger relationships with principals. The survey will be administered in the spring of each year to the site principals in all middle and elementary schools hosting 21st Century after-school centers in the national evaluation, starting in 2001. Two administrations of the survey will permit assessing how some principals' views change as they gain greater familiarity with their role and how changes in principals may alter the types of support and role responsibilities assumed by principals. The questionnaire will include questions on the role of the principal in developing and sustaining the 21st Century program, how the

principal participates in program planning, whether the principal encourages school day teachers to participate in the after-school program, and whether and how the principal helps the after-school staff coordinate their curriculum with the regular school day. The intent is to model the questionnaire closely on the previous principal questionnaire employed in the TASC evaluation in New York City.

The staff survey will provide important information about the context in which the program operates; it, like the principal survey, will be administered twice (once each spring) to middle and elementary school center staff, starting in spring 2001. The survey will provide a different perspective on support for the program from that provided by the principal. It will also provide useful descriptive information about staff working for programs, the interactions they have with other staff, and their perception of the program's effect on student outcomes. Project directors and site coordinators will provide information on criteria used when hiring staff, staff turnover, and the existence of vacant positions.

Principal Survey Topics

- Role in Initiating the 21st Century Grant Application
- Role in Planning After-School Program Curriculum
- Encouragement of School Day Staff Participation in After-School Program
- School-Program Linkages and Coordination
- Ways Involved in After-School Program
- Primary Program Goals and Objectives
- Program Decision-making Process
- Perception of Program's Effect on Student Outcomes

Staff Survey Topics

- Administrative Support for Program
- Job Title, Responsibilities, and Benefits
- Employment Status (full-time, part-time)
- Relationships with Other Staff
- Perception of Program Goals
- Perception of Program's Effect on Student Outcomes
- Job Satisfaction
- Personal Characteristics (race, sex, education)

Lessons from Other Mature After-School Programs. Qualitative research to examine the activities and experiences of after-school programs not funded by the 21st Century program provides a valuable opportunity to understand and promote practices that may benefit and help sustain 21st Century programs that have been operating only a short time. By identifying and

visiting a set of after-school programs that have operated successfully and sustained their services and funding, this study will yield insights into how 21st Century programs can benefit from effective practices of programs that have been operating a longer time, and that are demonstrating sustainability.

Prior research and knowledgeable experts will help construct an initial sample of about 20 to 30 non-21st Century programs in diverse communities. Sites in the sample will have met a range of program characteristics and challenges likely to be faced by 21st Century programs. For example, non-21st Century programs sampled for this special study will be those that operate after school and are based in or closely linked with schools, since all 21st Century programs are linked with schools. They also will reflect a number of the attributes of the intended 21st Century program laid out earlier in this paper. Furthermore, priority will be placed on programs that provide open access to students and families from low-income families, impose no fees on families, have stable funding arrangements, have formal or informal evidence of success, and have operated at least 3 years without federal funding. Telephone interviews will be used to learn about the following aspects of the projects.

Topics for Initial Interviews with Non-21st Century Programs

- Project Goals
- Activities and Services Offered
- Evidence of Success (based on student outcomes)
- Partners (Who pays, lobbies, makes arrangements, attends to stakeholder concerns? What changes have occurred?)
- Problems Solved and Challenges to Meet (What has been hard?)
- Future Expectations (Stability of funding? Factors important to longevity?)

Ultimately, five sites will be chosen from the larger initial pool of sites and visited. These sites will represent approaches or contexts that differ in ways that characterize the wider arena of after-school programs and are strong in one or more of the features believed to contribute to effectiveness and longevity. The visits will concentrate on uncovering ideas, strategies, and organizational arrangements that can be applied in other settings to improve effectiveness and sustainability.

Measuring Impacts and Integrating Impacts with Implementation Findings

A wide range of analyses are planned across the study components of the national evaluation. The intention is to use the relationships addressed in the first half of this paper as a springboard for analyses of data captured in various components of the study. Rich, descriptive statistical tabulations, qualitative comparisons, and regression models that test the strength of relationships will be used to address questions about patterns of participation, the contextual conditions that surround after-school programs, student and parent background characteristics and activities, duration in programs, experiences in programs, staff preparation and challenges,

and the like. Efforts to contrast different groups of participants, types of programs, and geographic circumstances (for example, participants from low-income homes or rural versus urban contexts) will be a major priority. These approaches apply broadly to all components of the national evaluation and are discussed in considerable detail in the design report prepared for ED.

The Mott enhancement study in particular underscores the importance of analyzing information gathered by components of the national evaluation to shed light on ways that quality programming relates to impacts on desired outcome measures. Consistent with this emphasis, the Mott enhancement will supplement the impact analysis in four ways: (1) the larger sample size made possible by the additional Mott sites improves the precision of impact estimates, (2) the longitudinal followup in Mott sites allows the analysis to investigate the effect of program participation on long-term student outcomes, (3) the collection of data on quality components in Mott sites permits an analysis of the effect of quality characteristics on student outcomes, and (4) the observational study and the surveys of principals, staff, and participants enriches the understanding and interpretation of observed impacts.

A crucial objective of the overall evaluation is to assess the impacts of 21st Century programs on key outcomes. Do 21st Century participants do better academically, develop more, and engage in fewer risky behaviors outside of school? What types of students benefit from programs? What program elements or characteristics are associated with better outcomes? Do students who participate more have better outcomes? These questions can be divided into three areas: (1) general impacts, (2) subgroup impacts, and (3) dosage impacts. Methods for conducting general impact analyses are well known, and are not discussed here. Basically, random assignment ensures that simple differences of average outcomes for treatment and control groups measure program impacts, and similar logic applies to rigorous comparison-group designs.[15]

The second type of impact analysis, looking at subgroup impacts, is particularly useful for identifying the types of students who benefit most from program participation, and the types of programs that generate impacts. Looking at impacts by student subgroup is useful for identifying the types of students that program should target to achieve the greatest impacts within their fixed resources.[16] Looking at impacts by type of site involves calculating site-level impact estimates and examining whether there are any patterns between the site-level impacts and site characteristics. For example, the analysis could find that programs with a strong academic focus had larger impacts on academic outcomes.

---

[15] The impact analysis plan is described in much greater detail in chapter 5 of the design report for the national evaluation (Dynarski et al 2000).

[16]Myers and Moore (2000) explore this issue, using findings from the National Evaluation of the Upward Bound program.

Because site-level sample sizes are modest, however, a more useful approach will be to combine sites with similar characteristics and assess whether groups of sites ("pools") have greater impacts. For example, pools could be created based on the strength of the academic focus at each site, impact estimates obtained for each strength level, and then impact estimates of the various strength levels compared for statistical differences. The analysis may find that a pool of programs with the strongest academic focus has a larger impact on academic outcomes than a pool of sites with a weaker academic focus.

The implementation analysis is crucial for generating the information needed to code programs into pools. Figure 6 shows schematically how the coding would work. Based on observations from site visits, programs would be rated on various categories (such as their academic focus, enrichment focus, and integration with the school day), creating a variable that can be used to separate different programs into various pools. The analysis will then compare impacts among the different pools and identify program-level characteristics associated with various impacts.
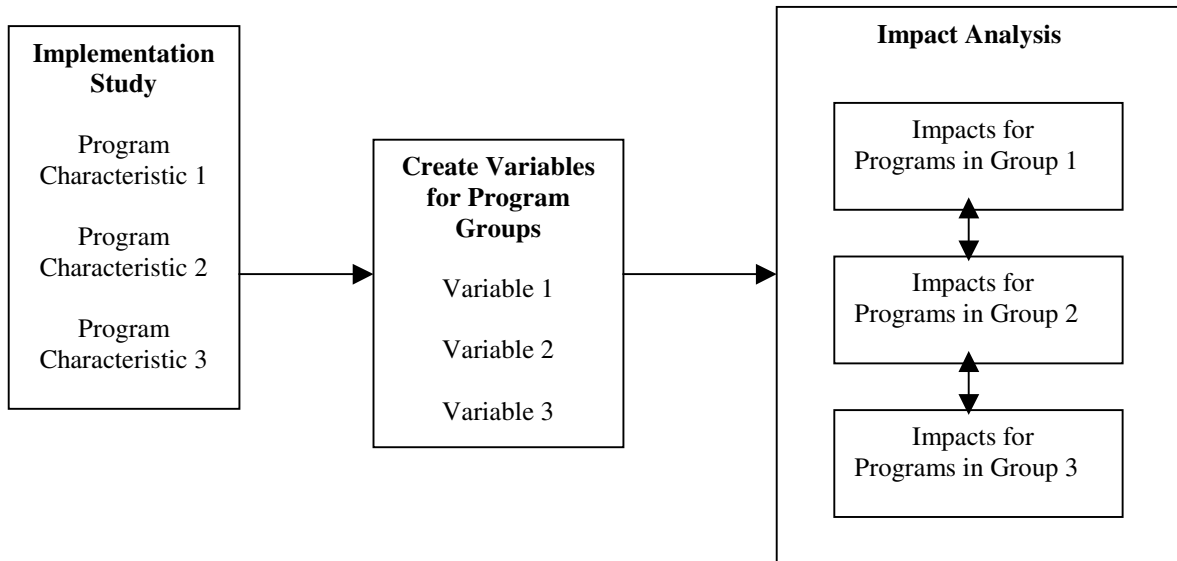
The same coding schemes generated by the implementation analysis can be used to estimate hierarchical linear models. These models are increasingly used in research contexts in which units are nested within larger units. In this case, the analysis will be examining the impacts on students nested within programs. The first stage of the HLM approach will estimate program-level impact estimates. The second stage will estimate the program-level factors that affect program impacts. For example, the second state analysis may show that the variable indicating program academic focus may have a positive relationship with academic impacts, indicating that programs rated as having greater academic focus do, in fact, result in larger academic impacts.

Estimating the effects of higher program dosages requires extensive analytic adjustments even when impacts are based on random assignment designs. Students who receive larger doses of program services may differ systematically from other students, which introduces bias into measurement designs. One approach for offsetting the bias is to create a comparison group of students that is similar to students who receive larger doses in terms of their basic sociodemographic characteristics. Using a propensity-score method, for example, the analysis would (1) estimate a model of whether participants stay for a long duration, (2) compute propensity scores and match control group members with long-stay treatment group members, and (3) estimate program impacts as the difference between large-dose treatment group members and matched comparison group members.

The Work Ahead: Evaluation Timeline, Reporting Plans, and Research Considerations

The attached Figure 7 provides a broad overview of the schedule for main activities of the national evaluation. Data collection for the overall study occurs primarily during the 2000-2001 and the 2001-2002 school years. Additional analysis and the preparation of reports will extend through the end of 2003, and potentially longer if additional followup is found useful based on the core study's results. Major reports for ED and Mott will be prepared after each of the two data collection periods, and a synthesis report will be prepared after the second data collection is completed and results reported. Current plans call for combining implementation findings with

FIGURE 6
LINKING IMPLEMENTATION AND IMPACT ANALYSES

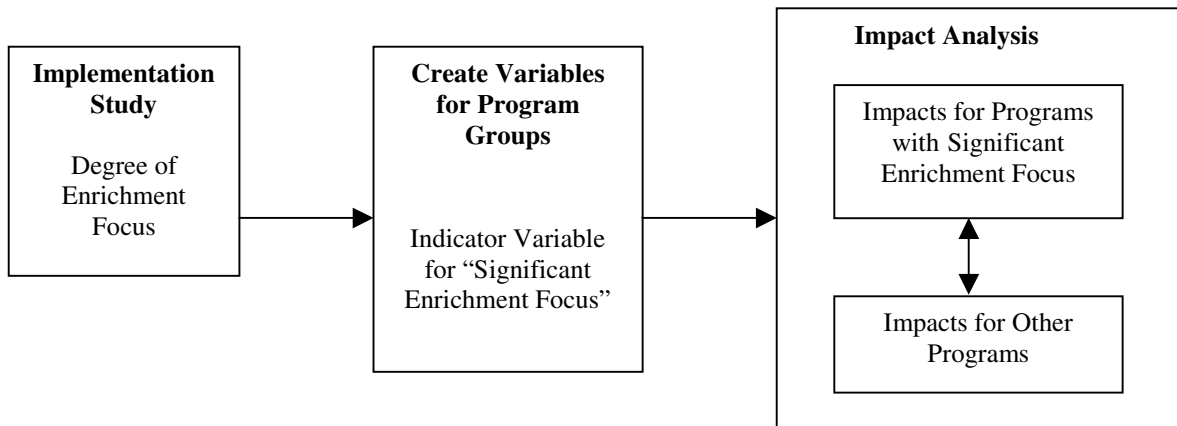| Implementation Study		Create Variables for Program Groups		Impact Analysis
Program Characteristic 1	→	Variable 1	→	Impacts for Programs in Group 1 ↕ Impacts for Programs in Group 2 ↕ Impacts for Programs in Group 3
Program Characteristic 2		Variable 2		
Program Characteristic 3		Variable 3		

Example: Enrichment Focus

Implementation Study		Create Variables for Program Groups		Impact Analysis
Degree of Enrichment Focus	→	Indicator Variable for "Significant Enrichment Focus"	→	Impacts for Programs with Significant Enrichment Focus ↕ Impacts for Other Programs

FIGURE 7
SCHEDULE FOR NATIONAL EVALUATION OF 21ST CENTURY LEARNING CENTERS:
RESEARCH COMPONENTS

Task Name	2000	2001		2002		2003		2004+
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Impact Study								
Core Study (ED/Mott)	———————————————————							
Longitudinal Study (Mott)						———————————→		
Implementation Study								
Core Study (ED/Mott)	——————		——————		——————			
Mott Additional Visits	——————		——————					
Special Studies (Mott)								
Study of Students' Time Use		——————			——————			
Participant/Non-participant Surveys		——————		——————				
Principal/Staff Surveys		——————		——————				
Other After-School Programs Study		——————						
Reports								
Annual (ED/Mott)		——————		——————		—————————→		

impact findings and not producing an impacts-only report. Data collection for the planned longitudinal study occurs through 2006, and reports will be prepared following each survey wave. Opportunities for separate reports focusing on special themes or separable study efforts (for example, the Study of Other After-School Programs) also will be incorporated into the reporting plan, as appropriate.

An overview of the entire work plan for the Mott enhancement study is separately presented in Figure 8. This summary, which zeroes in on the components of the overall national evaluation developed through the Mott contribution, identifies the various research activities planned under the enhancement, the anticipated focus and projected sample parameters for each activity, and special considerations that may need to be addressed as the studies unfold. The last column in Figure 8 provides a quick reference to the anticipated schedules for specific activities within the Mott enhancement.

FIGURE 8
RESEARCH ACTIVITIES FOR MOTT ENHANCEMENT STUDY

Activity	Focus and Sample	Special Considerations	Schedule
A. Add ten 21st Century grantees to the core national evaluation	Purposively identify 5 elementary (ES) and 5 middle-school (MS) projects implementing after-school programs with quality features; quality ratings based on screening calls and first site visit. Overall, anticipate sample of 1500 MS students and 750 ES students. Conduct core impact and implementation study in these sites (baseline plus two followup surveys of students and parents; two followup surveys of teachers; collection of student records; reading achievement tests of ES students). Also conduct one site visit in addition to the core study's two visits; focus of visit may address parent involvement, collaborating community organizations, and/or summer program components.	Middle school sites selected from grantee cohorts 1 through 3. Elementary school selections will occur one year later based on recruitment of additional random assignment sites from 4th and 5th grantee cohorts.	MS sites data collection: Summer 2000 through Spring 2002 ES sites data collection: Winter 2001 through Spring 2003
B. Long-term Longitudinal Study of Middle School Students	Assess outcomes through high school years of 1,500 students (treatments plus comparisons). Includes outcomes such as high school progress, academic course taking, postsecondary expectations and preparations, attitudes toward school and self.	Conduct two follow-up telephone interviews, with tracking efforts between years. Final decision dependent on finding evidence of intermediate or long-term effects in first two years. Evaluate basing followup sample on students who register a dosage threshold that is consistent with detectable impacts.	Annual tracking begins spring 2003 with surveys in spring 2004 and spring 2006.

FIGURE 8 (*continued*)

Activity	Focus and Sample	Special Considerations	Schedule
D. After-school Staff Survey (All Sites)	Gather systematic information about ways the 21st Century program and the school program are mutually supportive, perceived strengths and weaknesses of program, training opportunities and needs, and staff involvement in aspects of the program. Anticipate sample of 1280 paid after-school staff across 60 grantees.	Will administer direct mail-in questionnaire through centers. Will use separate instruments for project directors, center coordinators, and other staff. Will amend MOUs currently in place with sampled grantees.	Spring 2001 through Spring 2003 (coincides with principal survey)
E. Participant Survey in 10 Mott Sites	Gather systematic information from participating students about experiences in the 21st Century centers, activities, benefits, perceived changes from the program, likes and dislikes. Can be used to provide guidance regarding program design and development. Maximum expected sample of 21st Century participants is 1125 (375 ES students and 750 MS students); plan to restrict to students in grades 3-5 will somewhat reduce number sampled at elementary level.	Plan includes two administrations of participation questions. Assume will be coordinated with each spring follow-up survey as a module added to the questionnaire. Field tests will assess respondent compliance and possible need for incentives, and/or shifting to standalone survey. Will build on existing questionnaires to the extent possible (e.g. After School Environment Scale [ASES] developed by Rosenthal and Vandell).	Spring 2001 through Spring 2003
F. Nonparticipant Survey in 10 Mott Sites	Gather information about demand for after-school programs and reasons for not participating. Will survey parents of ES students and MS students. Anticipate sample of 1,000 non-participating elementary parents and 1,000 nonp-participating middle school students (about 200 respondents per host school).	Will survey respondents once. Will undersample students/parents included as control or comparisons in core impact study to minimize respondent burden.	MS students: Spring 2001 ES parents: Spring 2002

37

FIGURE 8 (*continued*)

Activity	Focus and Sample	Special Considerations	Schedule
G. Lessons from Other Mature After-School Programs (Lead: Policy Studies Associates)	Study a range of 20-30 best-practice, mature after-school programs that have demonstrated effectiveness and reflect establishment of ED/Mott's intended after-school program. In-depth focus and site visits to 5 select programs. Develop lessons on sustainability and alignment of cognitive and psycho-emotional components. Sample will reflect diversity in urban/rural aspects and cultural groups; focus on high poverty schools, school-based or school-linked programs, and evidence of effectiveness based on outcomes and longevity.	Reviews of research studies and contacts with relevant experts will be basis for identifying pool of sites. Telephone interviews using semi-structured protocol will be used for site-level data collection for pool of identified sites. Site visits will be conducted in 5 sites selected for their different approaches or contexts.	December 2000 through January 2002
H. Study of After-school Time in Mott MS Sites (Lead: Deborah Vandell, University of Wisconsin)	Gather information about MS student activities and time use during after school period using experience sampling; explore differences in how students in treatment and comparison students spend time after school and how their experiences relate to outcomes. Sample will draw approximately 60 students from each grantee sample, to yield overall sample of 300 students (150 participants and 150 comparisons).	Design work will determine activity codes that align with offerings in centers, appropriate time sampling protocol, and log books. In-depth training and monitoring of field data collectors will be key. Parental notice and specific consent will be sought.	Design work: Spring 2001 Data collection: Two one-week periods in 2001-2002 school year.

38

REFERENCES

Baker, Dwayne and Peter Witt. "Evaluation of the Impact of Two After-School Recreation Programs." *Journal of Park and Recreation Administration,* vol. 14, no. 3, 1996, pp. 23-44.

Brooks, Pauline, Cynthia Mojica, and Robert Land. "Final Evaluation Report: Longitudinal Study of LA's BEST After-School Education and Enrichment Program, 1992-94." Los Angeles: Center for the Study of Evaluation, Graduate School of Education and Information Studies, UCLA, spring 1995.

Cooper, Harris, K. Charlton, J.C. Valentine, and L. Muhlenbruck. *Making the Most of Summer School: A Meta-Analytic and Narrative Review*. Malden, MA: Blackwell, 2000.

Csikszentmihalyi, Mihaly and Reed Larson. "Validity and Reliability of the Experience-Sampling Method." Journal of Nervous and Mental Disease, vol. 175, no. 9, 1987, pp. 526-536.

Dynarski, M., S. James-Burdumy, D. Mayer, M. Moore, J. Mullens, T. Silva, C. Pistorino and D. Hermond. "A Broader View: The National Evaluation of the 21st Century Learning Centers Initiative. Design Report (draft). Mathematica Policy Research, Inc., Princeton, NJ, 2000.

Feister, Leila, Richard N. White, Elizabeth Reisner, and Anne M. Castle. "Increasing and Improving After-School Opportunities: Evaluation Results from the TASC After-School Program's First Year." DC: Policy Studies Associates, February 2000.

Fashola, Olatokumbo. "Report No. 24: Review of Extended-Day and After-School Programs and Their Effectiveness." [http://www.csos.jhu.edu/CRESPAR%20Reports/ report24entire.htm]. Accessed May 17, 1999.

Hahn, Andrew, Tom Leavitt, and Paul Aaron. "Evaluation of the Quantum Opportunities Program: Did the Program Work?" Waltham, MA: Center for Human Resources, Heller Graduate School, Brandeis University, 1994.

Johnson, Janet, and Jan Donley. "Support Our Students (SOS) Program: 1998-99." 1999.

Moore, Mary T. and David Myers. "Getting More From Dollars Invested: Translating Results from Impact Studies Into Changes in Operating Programs." A paper presented at the annual meeting of the American Education Finance Association, Austin, TX, March 9, 2000.

Morris, Darrell, Beverly Shaw, and Jan Perney. "Helping Low Readers in Grades 2 and 3: An After-School Volunteer Tutoring Program." *The Elementary School Journal*. vol. 91, no. 12, 1990, pp. 133-150.

Pierce, Kim, Jill Hamm, and Deborah Lowe Vandell. "Experiences in After-School Programs and Children's Adjustment in First-Grade Classrooms." *Child Development*, vol. 70, no.3, April 1999.

Posner, Jill, and Deborah Lowe Vandell. "Low-Income Children's After-School Care: Are There Beneficial Effects of After-School Programs?" *Child Development* Special Issue: Children and Poverty, vol. 65, no. 2, April 1994, pp. 440-456.

Puma, Michael J., N. Karweit, C. Price, A. Riccuiti, W. Thompson, and M. Vaden-Kiernan. Prospects: Final Report on Student Outcomes. Report prepared for the U. S. Department of Education, Planning and Evaluation Service. Cambridge, MA: Abt Associates, 1997.

Roderick, Melissa, Anthony Bryk, Brian Jacob, John Easton, and Elaine Allensworth. "Ending Social Promotion: Results from the First Two Years." Chicago, IL: Consortium on Chicago School Research, December 1999.

Rodriguez, Eunice, Thomas Hirschl, June Mead, and Stephen Goggin. "Understanding the Difference 4-H Clubs Make in the Lives of New York Youth: How 4-H Contributes to Positive Youth Development. [http://www.cce.cornell.edu/youth/4h/news/final_report.html]. August 1999.

Rosenthal, Robert, and Deborah Lowe Vandell. "Quality of Care at School-Age Child-Care Programs: Regulatable Features." Observed Experiences, Child Perspectives, and Parent Perspectives." *Child Development*, vol. 67, 1996, pp. 2434-2445.

Schinke, Steven, Kristin Cole, and Mario Orlandi. "Thirty-Month Data and Process Findings: Evaluation of Educational Enhancement Program of Boys and Girls Clubs of America." New York: Carnegie Corporation, December 1998.

Sheley, Joseph. "Evaluation of the Centralized Structured After-School Tutorial." *Journal of Educational Research*, vol. 77, no. 4, March/April 1984, pp. 213-218.

Tierney, Joseph, Jean Baldwin Grossman, and Nancy Resch. "Making a Difference: An Impact Study of Big Brothers/Big Sisters." Philadelphia: Public/Private Ventures, November 1995.

U.S. Department of Education. "Safe and Smart: Making the After-School Hours Work for Kids." [http://www.ed.gov/pubs/SafeandSmart/index.html]. June 1998.

U.S Department of Education/U.S Department of Justice. Working for Children and Families: Safe and Smart After-School Programs. [http://www.ed.gov]. April 2000.

Urban Institute. "1997 NSAF Public Use File Documentation and Codebook." [http://newfederalism.urban.org/nsaf/methodology.html]. Accessed January 28, 2000.

Vandell, Deborah Lowe and Mary Ann Corasaniti. "The Relation Between Third Graders' After-School Care and Social, Academic, and Emotional Functioning." *Child Development*, vol. 59, 1988, pp. 868-875.

Vandell, Deborah Lowe, and Kim Pierce. "Can After-School Programs Benefit Children Who Live in High-Crime Neighborhoods?" Poster Symposium conducted at the meeting of the Society for Research in Child Development, Albuquerque, NM, April 14-18, 1999.

Vandell, D.L., Shumow, L., and Posner, J.K. "Children's After-School programs: Promoting Resiliency or Vulnerability?" In Promoting Resiliency in Families and Children at Risk: Interdisciplinary Perspectives. H.I. McCubbin, A.I. Thompson, J. Futrell, and L.D. McCubbin, eds. Thousand Oaks, CA: Sage Publications, in press.